

# **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**

**25 February, 2019**

**Plan: PROPOSAL #1**



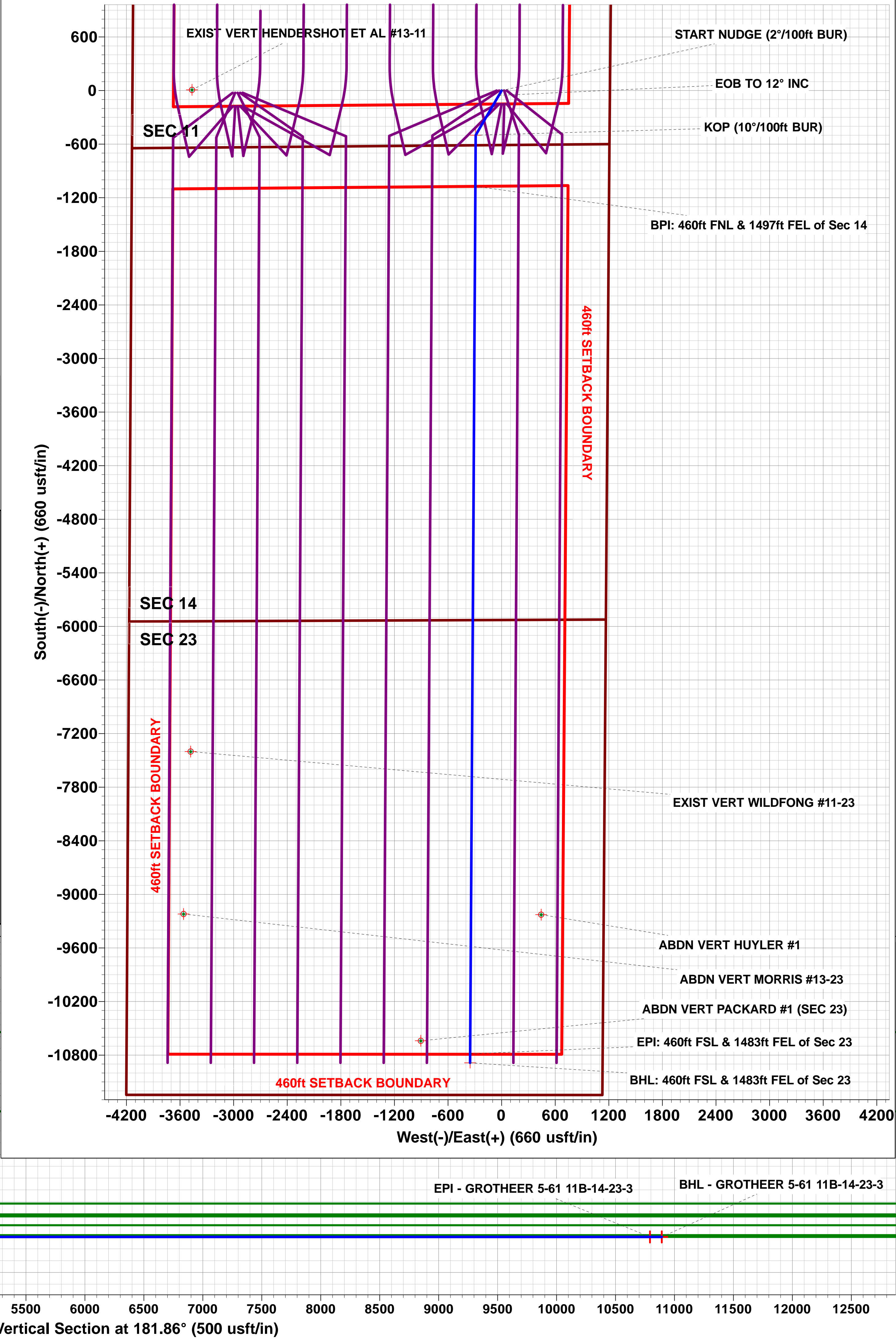
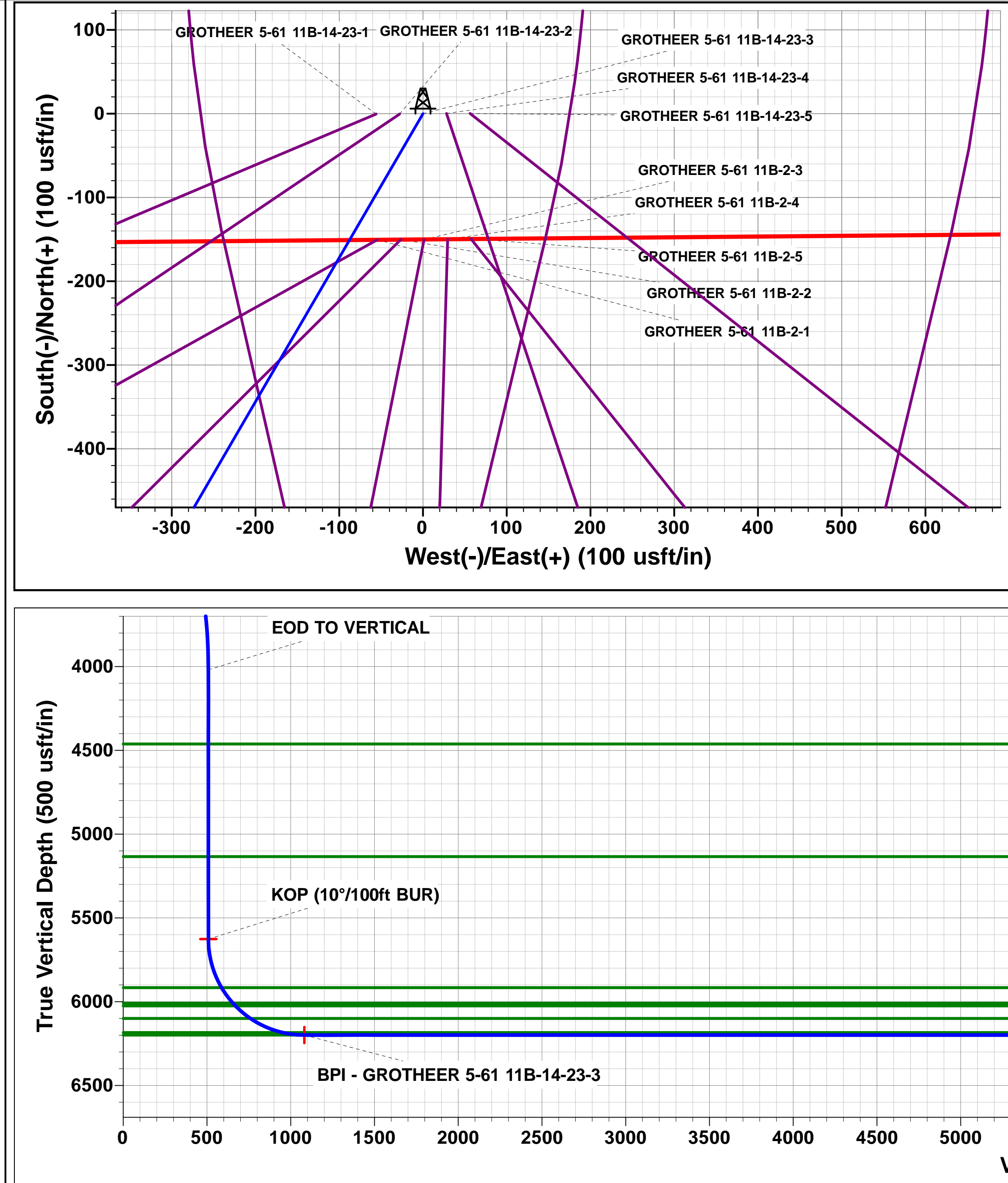
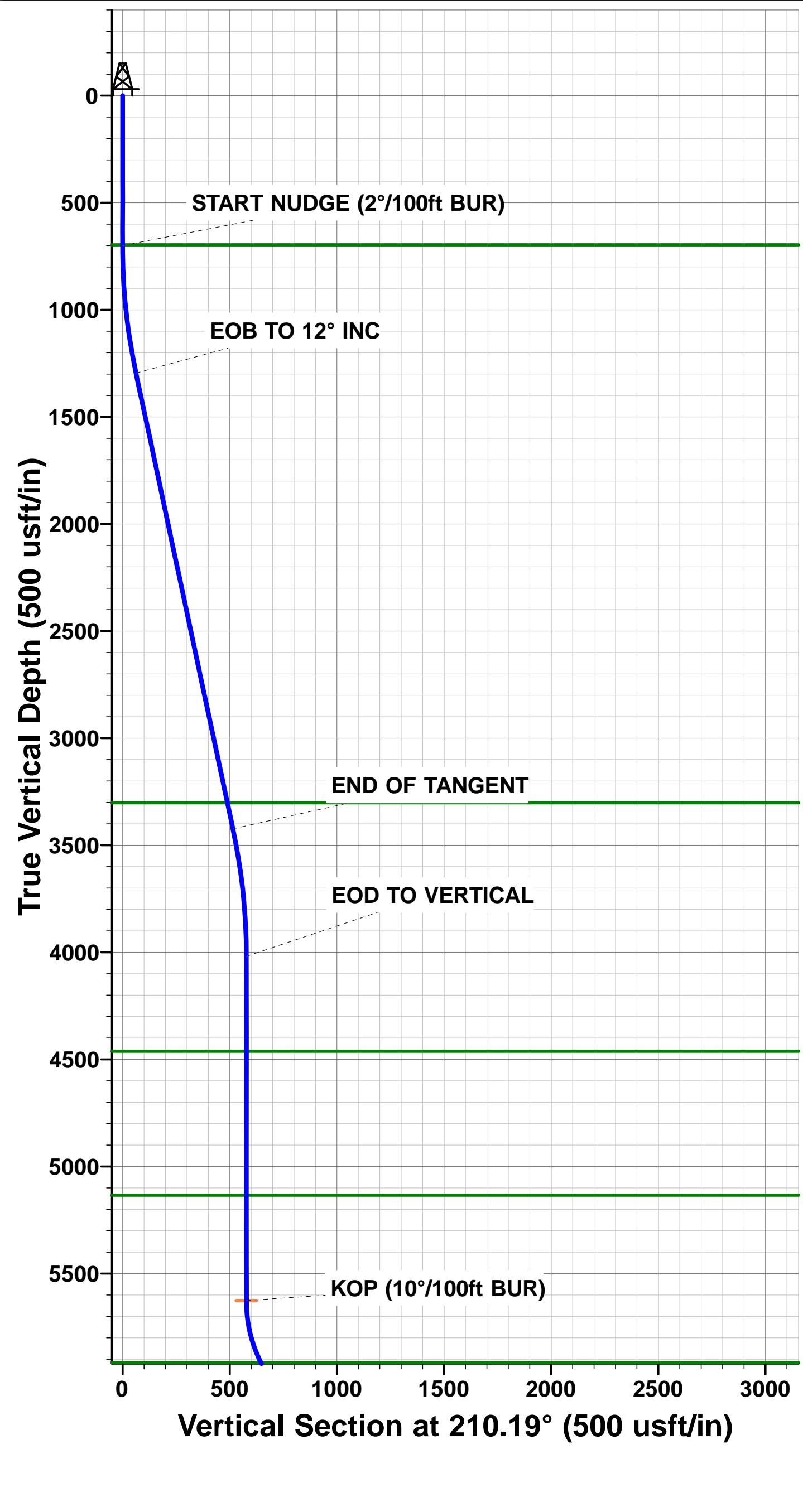


Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SE SE SEC. 11 T5N R61W 6th P.M.  
Well: GROTHEER 5-61 11B-14-23-3  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 610ft FSL & 1213ft FEL of Sec 11	
700.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)	
1295.62	1300.00	12.00	210.19	-54.11	-31.48	55.10	62.60	EOB TO 12° INC	
3423.68	3475.59	12.00	210.19	-445.10	-258.93	453.25	514.93	END OF TANGENT	
4019.30	4075.59	0.00	0.00	-499.21	-290.41	508.35	577.54	EOD TO VERTICAL	
5626.14	5682.44	0.00	0.00	-499.21	-290.41	508.35	577.54	KOP (10°/100ft BUR)	
6199.10	6582.44	90.00	180.34	-1072.16	-293.81	1081.11	1150.50	BPI: 460ft FNL & 1497ft FEL of Sec 14	
6199.10	16296.96	90.00	180.35	-10786.50	-352.15	10792.25	10865.02	EPI: 460ft FSL & 1483ft FEL of Sec 23	
6199.10	16396.78	90.00	180.29	-10886.33	-352.71	10892.04	10964.84	BHL: 460ft FSL & 1483ft FEL of Sec 23	

PROPOSED LOCAL COORDINATES:  
  
SHL: 610ft FSL & 12131ft 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	5626.14	-499.21	-290.41	40.408885	-104.171375
BPI - GROTHEER 5-61 11B-14-23-3	6199.10	-1072.16	-293.81	40.407312	-104.171387
EPI - GROTHEER 5-61 11B-14-23-3	6199.10	-10786.50	-352.15	40.380647	-104.171596
BHL - GROTHEER 5-61 11B-14-23-3	6199.10	-10886.33	-352.71	40.380373	-104.171598



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<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>	KB 25' @ 4712.10usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4712.10usft (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-14-23-3	<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-14-23-3					
Well Position	+N-S	0.36 usft	Northing:	1,395,072.28 usft	Latitude:	40.410255
	+E-W	55.97 usft	Easting:	3,370,256.41 usft	Longitude:	-104.170332
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,687.10 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>
	6,199.10	0.00	0.00	181.86

<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	-4,712.10	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	-4,012.10	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	12.00	210.19	1,295.62	-3,416.48	-54.11	-31.48	2.00	2.00	0.00	210.19	
3,475.59	12.00	210.19	3,423.68	-1,288.42	-445.10	-258.93	0.00	0.00	0.00	0.00	
4,075.59	0.00	0.00	4,019.30	-692.80	-499.21	-290.41	2.00	-2.00	0.00	180.00	
5,682.44	0.00	0.00	5,626.14	914.04	-499.21	-290.41	0.00	0.00	0.00	0.00	KOP - GROTHEER
6,582.44	90.00	180.34	6,199.10	1,487.00	-1,072.16	-293.81	10.00	10.00	-19.96	180.34	BPI - GROTHEER !
16,296.96	90.00	180.35	6,199.10	1,487.00	-10,786.50	-352.15	0.00	0.00	0.00	90.13	EPI - GROTHEER !
16,396.78	90.00	180.29	6,199.10	1,487.00	-10,886.33	-352.71	0.06	0.00	-0.06	-89.98	BHL - GROTHEER

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4712.10usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4712.10usft (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-14-23-3	<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 &amp; 1213ft FEL of Sec 11</b>										
0.00	0.00	0.00	0.00	4,712.10	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,612.10	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,512.10	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,412.10	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	4,312.10	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	4,212.10	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	4,112.10	0.00	0.00	0.00	0.00	0.00	0.00
<b>PIERRE SHALE (BASE FOX HILLS)</b>										
697.10	0.00	0.00	697.10	4,015.00	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	4,012.10	0.00	0.00	0.00	0.00	0.00	0.00
800.00	2.00	210.19	799.98	3,912.12	-1.51	-0.88	1.54	2.00	2.00	0.00
900.00	4.00	210.19	899.84	3,812.26	-6.03	-3.51	6.14	2.00	2.00	0.00
1,000.00	6.00	210.19	999.45	3,712.65	-13.57	-7.89	13.81	2.00	2.00	0.00
1,100.00	8.00	210.19	1,098.70	3,613.40	-24.10	-14.02	24.54	2.00	2.00	0.00
1,200.00	10.00	210.19	1,197.47	3,514.63	-37.62	-21.89	38.31	2.00	2.00	0.00
<b>EOB TO 12° INC</b>										
1,300.00	12.00	210.19	1,295.62	3,416.48	-54.11	-31.48	55.10	2.00	2.00	0.00
1,400.00	12.00	210.19	1,393.44	3,318.66	-72.08	-41.93	73.40	0.00	0.00	0.00
1,500.00	12.00	210.19	1,491.25	3,220.85	-90.06	-52.39	91.70	0.00	0.00	0.00
1,600.00	12.00	210.19	1,589.07	3,123.03	-108.03	-62.84	110.00	0.00	0.00	0.00
1,700.00	12.00	210.19	1,686.88	3,025.22	-126.00	-73.30	128.31	0.00	0.00	0.00
1,800.00	12.00	210.19	1,784.70	2,927.40	-143.97	-83.75	146.61	0.00	0.00	0.00
1,900.00	12.00	210.19	1,882.51	2,829.59	-161.94	-94.21	164.91	0.00	0.00	0.00
2,000.00	12.00	210.19	1,980.33	2,731.77	-179.91	-104.66	183.21	0.00	0.00	0.00
2,100.00	12.00	210.19	2,078.14	2,633.96	-197.88	-115.12	201.51	0.00	0.00	0.00
2,200.00	12.00	210.19	2,175.96	2,536.14	-215.86	-125.57	219.81	0.00	0.00	0.00
2,300.00	12.00	210.19	2,273.77	2,438.33	-233.83	-136.03	238.11	0.00	0.00	0.00
2,400.00	12.00	210.19	2,371.59	2,340.51	-251.80	-146.48	256.41	0.00	0.00	0.00
2,500.00	12.00	210.19	2,469.40	2,242.70	-269.77	-156.94	274.71	0.00	0.00	0.00
2,600.00	12.00	210.19	2,567.22	2,144.88	-287.74	-167.39	293.01	0.00	0.00	0.00
2,700.00	12.00	210.19	2,665.03	2,047.07	-305.71	-177.84	311.31	0.00	0.00	0.00
2,800.00	12.00	210.19	2,762.84	1,949.26	-323.68	-188.30	329.61	0.00	0.00	0.00
2,900.00	12.00	210.19	2,860.66	1,851.44	-341.66	-198.75	347.91	0.00	0.00	0.00
3,000.00	12.00	210.19	2,958.47	1,753.63	-359.63	-209.21	366.21	0.00	0.00	0.00
3,100.00	12.00	210.19	3,056.29	1,655.81	-377.60	-219.66	384.51	0.00	0.00	0.00
3,200.00	12.00	210.19	3,154.10	1,558.00	-395.57	-230.12	402.81	0.00	0.00	0.00
3,300.00	12.00	210.19	3,251.92	1,460.18	-413.54	-240.57	421.11	0.00	0.00	0.00
<b>PARKMAN</b>										
3,351.30	12.00	210.19	3,302.10	1,410.00	-422.76	-245.94	430.50	0.00	0.00	0.00
3,400.00	12.00	210.19	3,349.73	1,362.37	-431.51	-251.03	439.41	0.00	0.00	0.00
<b>END OF TANGENT</b>										
3,475.59	12.00	210.19	3,423.68	1,288.42	-445.10	-258.93	453.25	0.00	0.00	0.00
3,500.00	11.51	210.19	3,447.57	1,264.53	-449.40	-261.43	457.63	2.00	-2.00	0.00
3,600.00	9.51	210.19	3,545.89	1,166.21	-465.16	-270.60	473.68	2.00	-2.00	0.00
3,700.00	7.51	210.19	3,644.78	1,067.32	-477.96	-278.05	486.71	2.00	-2.00	0.00
3,800.00	5.51	210.19	3,744.13	967.97	-487.76	-283.75	496.69	2.00	-2.00	0.00
3,900.00	3.51	210.19	3,843.81	868.29	-494.56	-287.70	503.62	2.00	-2.00	0.00
4,000.00	1.51	210.19	3,943.71	768.39	-498.35	-289.91	507.47	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
4,075.59	0.00	0.00	4,019.30	692.80	-499.21	-290.41	508.35	2.00	-2.00	0.00
4,100.00	0.00	0.00	4,043.70	668.40	-499.21	-290.41	508.35	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-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4712.10usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4712.10usft (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-14-23-3	<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)
4,200.00	0.00	0.00	4,143.70	568.40	-499.21	-290.41	508.35	0.00	0.00	0.00
4,300.00	0.00	0.00	4,243.70	468.40	-499.21	-290.41	508.35	0.00	0.00	0.00
4,400.00	0.00	0.00	4,343.70	368.40	-499.21	-290.41	508.35	0.00	0.00	0.00
4,500.00	0.00	0.00	4,443.70	268.40	-499.21	-290.41	508.35	0.00	0.00	0.00
<b>SUSSEX</b>										
<b>4,518.40</b>	<b>0.00</b>	<b>0.00</b>	<b>4,462.10</b>	<b>250.00</b>	<b>-499.21</b>	<b>-290.41</b>	<b>508.35</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,600.00	0.00	0.00	4,543.70	168.40	-499.21	-290.41	508.35	0.00	0.00	0.00
4,700.00	0.00	0.00	4,643.70	68.40	-499.21	-290.41	508.35	0.00	0.00	0.00
4,800.00	0.00	0.00	4,743.70	-31.60	-499.21	-290.41	508.35	0.00	0.00	0.00
4,900.00	0.00	0.00	4,843.70	-131.60	-499.21	-290.41	508.35	0.00	0.00	0.00
5,000.00	0.00	0.00	4,943.70	-231.60	-499.21	-290.41	508.35	0.00	0.00	0.00
5,100.00	0.00	0.00	5,043.70	-331.60	-499.21	-290.41	508.35	0.00	0.00	0.00
<b>SHANNON</b>										
<b>5,190.40</b>	<b>0.00</b>	<b>0.00</b>	<b>5,134.10</b>	<b>-422.00</b>	<b>-499.21</b>	<b>-290.41</b>	<b>508.35</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,200.00	0.00	0.00	5,143.70	-431.60	-499.21	-290.41	508.35	0.00	0.00	0.00
5,300.00	0.00	0.00	5,243.70	-531.60	-499.21	-290.41	508.35	0.00	0.00	0.00
5,400.00	0.00	0.00	5,343.70	-631.60	-499.21	-290.41	508.35	0.00	0.00	0.00
5,500.00	0.00	0.00	5,443.70	-731.60	-499.21	-290.41	508.35	0.00	0.00	0.00
5,600.00	0.00	0.00	5,543.70	-831.60	-499.21	-290.41	508.35	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>5,682.44</b>	<b>0.00</b>	<b>0.00</b>	<b>5,626.14</b>	<b>-914.04</b>	<b>-499.21</b>	<b>-290.41</b>	<b>508.35</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,700.00	1.76	180.34	5,643.70	-931.60	-499.48	-290.41	508.62	10.00	10.00	0.00
5,800.00	11.76	180.34	5,742.88	-1,030.78	-511.23	-290.48	520.37	10.00	10.00	0.00
5,900.00	21.76	180.34	5,838.51	-1,126.41	-540.02	-290.65	549.15	10.00	10.00	0.00
<b>SHARON SPRINGS SHALE</b>										
<b>5,986.46</b>	<b>30.40</b>	<b>180.34</b>	<b>5,916.10</b>	<b>-1,204.00</b>	<b>-578.00</b>	<b>-290.88</b>	<b>587.11</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,000.00	31.76	180.34	5,927.69	-1,215.59	-584.98	-290.92	594.10	10.00	10.00	0.00
6,100.00	41.76	180.34	6,007.71	-1,295.61	-644.75	-291.27	653.84	10.00	10.00	0.00
<b>NIOBRARA FORMATION</b>										
<b>6,101.87</b>	<b>41.94</b>	<b>180.34</b>	<b>6,009.10</b>	<b>-1,297.00</b>	<b>-645.99</b>	<b>-291.28</b>	<b>655.09</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>NIOBRARA A CHALK</b>										
<b>6,123.76</b>	<b>44.13</b>	<b>180.34</b>	<b>6,025.10</b>	<b>-1,313.00</b>	<b>-660.93</b>	<b>-291.37</b>	<b>670.02</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,200.00	51.76	180.34	6,076.13	-1,364.03	-717.50	-291.70	726.57	10.00	10.00	0.00
<b>NIOBRARA B CHALK</b>										
<b>6,240.57</b>	<b>55.81</b>	<b>180.34</b>	<b>6,100.10</b>	<b>-1,388.00</b>	<b>-750.23</b>	<b>-291.90</b>	<b>759.28</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,300.00	61.76	180.34	6,130.88	-1,418.78	-801.03	-292.20	810.07	10.00	10.00	0.00
6,400.00	71.76	180.34	6,170.30	-1,458.20	-892.79	-292.74	901.80	10.00	10.00	0.00
<b>NIOBRARA C CHALK</b>										
<b>6,451.05</b>	<b>76.86</b>	<b>180.34</b>	<b>6,184.10</b>	<b>-1,472.00</b>	<b>-941.92</b>	<b>-293.04</b>	<b>950.91</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,500.00	81.76	180.34	6,193.18	-1,481.08	-990.01	-293.32	998.99	10.00	10.00	0.00
<b>BPI: 460ft FNL &amp; 1497ft FEL of Sec 14 - NIOBRARA C LP</b>										
<b>6,582.44</b>	<b>90.00</b>	<b>180.34</b>	<b>6,199.10</b>	<b>-1,487.00</b>	<b>-1,072.16</b>	<b>-293.81</b>	<b>1,081.11</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,600.00	90.00	180.34	6,199.10	-1,487.00	-1,089.72	-293.91	1,098.67	0.00	0.00	0.00
6,700.00	90.00	180.34	6,199.10	-1,487.00	-1,189.72	-294.51	1,198.63	0.00	0.00	0.00
6,800.00	90.00	180.34	6,199.10	-1,487.00	-1,289.72	-295.10	1,298.60	0.00	0.00	0.00
6,900.00	90.00	180.34	6,199.10	-1,487.00	-1,389.72	-295.69	1,398.56	0.00	0.00	0.00
7,000.00	90.00	180.34	6,199.10	-1,487.00	-1,489.71	-296.29	1,498.53	0.00	0.00	0.00
7,100.00	90.00	180.34	6,199.10	-1,487.00	-1,589.71	-296.88	1,598.49	0.00	0.00	0.00
7,200.00	90.00	180.34	6,199.10	-1,487.00	-1,689.71	-297.47	1,698.46	0.00	0.00	0.00
7,300.00	90.00	180.34	6,199.10	-1,487.00	-1,789.71	-298.07	1,798.42	0.00	0.00	0.00
7,400.00	90.00	180.34	6,199.10	-1,487.00	-1,889.71	-298.66	1,898.39	0.00	0.00	0.00
7,500.00	90.00	180.34	6,199.10	-1,487.00	-1,989.70	-299.26	1,998.35	0.00	0.00	0.00
7,600.00	90.00	180.34	6,199.10	-1,487.00	-2,089.70	-299.85	2,098.32	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-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4712.10usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4712.10usft (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-14-23-3	<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	6,199.10	-1,487.00	-2,189.70	-300.45	2,198.28	0.00	0.00	0.00
7,800.00	90.00	180.34	6,199.10	-1,487.00	-2,289.70	-301.04	2,298.25	0.00	0.00	0.00
7,900.00	90.00	180.34	6,199.10	-1,487.00	-2,389.70	-301.64	2,398.21	0.00	0.00	0.00
8,000.00	90.00	180.34	6,199.10	-1,487.00	-2,489.70	-302.23	2,498.18	0.00	0.00	0.00
8,100.00	90.00	180.34	6,199.10	-1,487.00	-2,589.69	-302.83	2,598.14	0.00	0.00	0.00
8,200.00	90.00	180.34	6,199.10	-1,487.00	-2,689.69	-303.42	2,698.11	0.00	0.00	0.00
8,300.00	90.00	180.34	6,199.10	-1,487.00	-2,789.69	-304.02	2,798.07	0.00	0.00	0.00
8,400.00	90.00	180.34	6,199.10	-1,487.00	-2,889.69	-304.61	2,898.04	0.00	0.00	0.00
8,500.00	90.00	180.34	6,199.10	-1,487.00	-2,989.69	-305.21	2,998.00	0.00	0.00	0.00
8,600.00	90.00	180.34	6,199.10	-1,487.00	-3,089.69	-305.81	3,097.97	0.00	0.00	0.00
8,700.00	90.00	180.34	6,199.10	-1,487.00	-3,189.68	-306.40	3,197.93	0.00	0.00	0.00
8,800.00	90.00	180.34	6,199.10	-1,487.00	-3,289.68	-307.00	3,297.90	0.00	0.00	0.00
8,900.00	90.00	180.34	6,199.10	-1,487.00	-3,389.68	-307.60	3,397.86	0.00	0.00	0.00
9,000.00	90.00	180.34	6,199.10	-1,487.00	-3,489.68	-308.19	3,497.83	0.00	0.00	0.00
9,100.00	90.00	180.34	6,199.10	-1,487.00	-3,589.68	-308.79	3,597.79	0.00	0.00	0.00
9,200.00	90.00	180.34	6,199.10	-1,487.00	-3,689.67	-309.39	3,697.76	0.00	0.00	0.00
9,300.00	90.00	180.34	6,199.10	-1,487.00	-3,789.67	-309.98	3,797.72	0.00	0.00	0.00
9,400.00	90.00	180.34	6,199.10	-1,487.00	-3,889.67	-310.58	3,897.69	0.00	0.00	0.00
9,500.00	90.00	180.34	6,199.10	-1,487.00	-3,989.67	-311.18	3,997.65	0.00	0.00	0.00
9,600.00	90.00	180.34	6,199.10	-1,487.00	-4,089.67	-311.78	4,097.62	0.00	0.00	0.00
9,700.00	90.00	180.34	6,199.10	-1,487.00	-4,189.67	-312.37	4,197.58	0.00	0.00	0.00
9,800.00	90.00	180.34	6,199.10	-1,487.00	-4,289.66	-312.97	4,297.55	0.00	0.00	0.00
9,900.00	90.00	180.34	6,199.10	-1,487.00	-4,389.66	-313.57	4,397.51	0.00	0.00	0.00
10,000.00	90.00	180.34	6,199.10	-1,487.00	-4,489.66	-314.17	4,497.48	0.00	0.00	0.00
10,100.00	90.00	180.34	6,199.10	-1,487.00	-4,589.66	-314.77	4,597.44	0.00	0.00	0.00
10,200.00	90.00	180.34	6,199.10	-1,487.00	-4,689.66	-315.36	4,697.41	0.00	0.00	0.00
10,300.00	90.00	180.34	6,199.10	-1,487.00	-4,789.65	-315.96	4,797.37	0.00	0.00	0.00
10,400.00	90.00	180.34	6,199.10	-1,487.00	-4,889.65	-316.56	4,897.34	0.00	0.00	0.00
10,500.00	90.00	180.34	6,199.10	-1,487.00	-4,989.65	-317.16	4,997.30	0.00	0.00	0.00
10,600.00	90.00	180.34	6,199.10	-1,487.00	-5,089.65	-317.76	5,097.27	0.00	0.00	0.00
10,700.00	90.00	180.34	6,199.10	-1,487.00	-5,189.65	-318.36	5,197.24	0.00	0.00	0.00
10,800.00	90.00	180.34	6,199.10	-1,487.00	-5,289.65	-318.96	5,297.20	0.00	0.00	0.00
10,900.00	90.00	180.34	6,199.10	-1,487.00	-5,389.64	-319.56	5,397.17	0.00	0.00	0.00
11,000.00	90.00	180.34	6,199.10	-1,487.00	-5,489.64	-320.16	5,497.13	0.00	0.00	0.00
11,100.00	90.00	180.34	6,199.10	-1,487.00	-5,589.64	-320.76	5,597.10	0.00	0.00	0.00
11,200.00	90.00	180.34	6,199.10	-1,487.00	-5,689.64	-321.36	5,697.06	0.00	0.00	0.00
11,300.00	90.00	180.34	6,199.10	-1,487.00	-5,789.64	-321.96	5,797.03	0.00	0.00	0.00
11,400.00	90.00	180.34	6,199.10	-1,487.00	-5,889.63	-322.56	5,896.99	0.00	0.00	0.00
11,500.00	90.00	180.34	6,199.10	-1,487.00	-5,989.63	-323.16	5,996.96	0.00	0.00	0.00
11,600.00	90.00	180.34	6,199.10	-1,487.00	-6,089.63	-323.76	6,096.92	0.00	0.00	0.00
11,700.00	90.00	180.34	6,199.10	-1,487.00	-6,189.63	-324.36	6,196.89	0.00	0.00	0.00
11,800.00	90.00	180.34	6,199.10	-1,487.00	-6,289.63	-324.96	6,296.85	0.00	0.00	0.00
11,900.00	90.00	180.34	6,199.10	-1,487.00	-6,389.63	-325.56	6,396.82	0.00	0.00	0.00
12,000.00	90.00	180.34	6,199.10	-1,487.00	-6,489.62	-326.17	6,496.78	0.00	0.00	0.00
12,100.00	90.00	180.34	6,199.10	-1,487.00	-6,589.62	-326.77	6,596.75	0.00	0.00	0.00
12,200.00	90.00	180.34	6,199.10	-1,487.00	-6,689.62	-327.37	6,696.71	0.00	0.00	0.00
12,300.00	90.00	180.34	6,199.10	-1,487.00	-6,789.62	-327.97	6,796.68	0.00	0.00	0.00
12,400.00	90.00	180.34	6,199.10	-1,487.00	-6,889.62	-328.57	6,896.64	0.00	0.00	0.00
12,500.00	90.00	180.35	6,199.10	-1,487.00	-6,989.62	-329.18	6,996.61	0.00	0.00	0.00
12,600.00	90.00	180.35	6,199.10	-1,487.00	-7,089.61	-329.78	7,096.57	0.00	0.00	0.00
12,700.00	90.00	180.35	6,199.10	-1,487.00	-7,189.61	-330.38	7,196.54	0.00	0.00	0.00
12,800.00	90.00	180.35	6,199.10	-1,487.00	-7,289.61	-330.98	7,296.50	0.00	0.00	0.00
12,900.00	90.00	180.35	6,199.10	-1,487.00	-7,389.61	-331.59	7,396.47	0.00	0.00	0.00
13,000.00	90.00	180.35	6,199.10	-1,487.00	-7,489.61	-332.19	7,496.44	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-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4712.10usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4712.10usft (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-14-23-3	<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	180.35	6,199.10	-1,487.00	-7,589.60	-332.79	7,596.40	0.00	0.00	0.00
13,200.00	90.00	180.35	6,199.10	-1,487.00	-7,689.60	-333.39	7,696.37	0.00	0.00	0.00
13,300.00	90.00	180.35	6,199.10	-1,487.00	-7,789.60	-334.00	7,796.33	0.00	0.00	0.00
13,400.00	90.00	180.35	6,199.10	-1,487.00	-7,889.60	-334.60	7,896.30	0.00	0.00	0.00
13,500.00	90.00	180.35	6,199.10	-1,487.00	-7,989.60	-335.20	7,996.26	0.00	0.00	0.00
13,600.00	90.00	180.35	6,199.10	-1,487.00	-8,089.60	-335.81	8,096.23	0.00	0.00	0.00
13,700.00	90.00	180.35	6,199.10	-1,487.00	-8,189.59	-336.41	8,196.19	0.00	0.00	0.00
13,800.00	90.00	180.35	6,199.10	-1,487.00	-8,289.59	-337.02	8,296.16	0.00	0.00	0.00
13,900.00	90.00	180.35	6,199.10	-1,487.00	-8,389.59	-337.62	8,396.12	0.00	0.00	0.00
14,000.00	90.00	180.35	6,199.10	-1,487.00	-8,489.59	-338.23	8,496.09	0.00	0.00	0.00
14,100.00	90.00	180.35	6,199.10	-1,487.00	-8,589.59	-338.83	8,596.05	0.00	0.00	0.00
14,200.00	90.00	180.35	6,199.10	-1,487.00	-8,689.58	-339.43	8,696.02	0.00	0.00	0.00
14,300.00	90.00	180.35	6,199.10	-1,487.00	-8,789.58	-340.04	8,795.98	0.00	0.00	0.00
14,400.00	90.00	180.35	6,199.10	-1,487.00	-8,889.58	-340.64	8,895.95	0.00	0.00	0.00
14,500.00	90.00	180.35	6,199.10	-1,487.00	-8,989.58	-341.25	8,995.91	0.00	0.00	0.00
14,600.00	90.00	180.35	6,199.10	-1,487.00	-9,089.58	-341.86	9,095.88	0.00	0.00	0.00
14,700.00	90.00	180.35	6,199.10	-1,487.00	-9,189.57	-342.46	9,195.85	0.00	0.00	0.00
14,800.00	90.00	180.35	6,199.10	-1,487.00	-9,289.57	-343.07	9,295.81	0.00	0.00	0.00
14,900.00	90.00	180.35	6,199.10	-1,487.00	-9,389.57	-343.67	9,395.78	0.00	0.00	0.00
15,000.00	90.00	180.35	6,199.10	-1,487.00	-9,489.57	-344.28	9,495.74	0.00	0.00	0.00
15,100.00	90.00	180.35	6,199.10	-1,487.00	-9,589.57	-344.88	9,595.71	0.00	0.00	0.00
15,200.00	90.00	180.35	6,199.10	-1,487.00	-9,689.57	-345.49	9,695.67	0.00	0.00	0.00
15,300.00	90.00	180.35	6,199.10	-1,487.00	-9,789.56	-346.10	9,795.64	0.00	0.00	0.00
15,400.00	90.00	180.35	6,199.10	-1,487.00	-9,889.56	-346.70	9,895.60	0.00	0.00	0.00
15,500.00	90.00	180.35	6,199.10	-1,487.00	-9,989.56	-347.31	9,995.57	0.00	0.00	0.00
15,600.00	90.00	180.35	6,199.10	-1,487.00	-10,089.56	-347.92	10,095.53	0.00	0.00	0.00
15,700.00	90.00	180.35	6,199.10	-1,487.00	-10,189.56	-348.52	10,195.50	0.00	0.00	0.00
15,800.00	90.00	180.35	6,199.10	-1,487.00	-10,289.55	-349.13	10,295.46	0.00	0.00	0.00
15,900.00	90.00	180.35	6,199.10	-1,487.00	-10,389.55	-349.74	10,395.43	0.00	0.00	0.00
16,000.00	90.00	180.35	6,199.10	-1,487.00	-10,489.55	-350.35	10,495.39	0.00	0.00	0.00
16,100.00	90.00	180.35	6,199.10	-1,487.00	-10,589.55	-350.95	10,595.36	0.00	0.00	0.00
16,200.00	90.00	180.35	6,199.10	-1,487.00	-10,689.55	-351.56	10,695.33	0.00	0.00	0.00
<b>EPI: 460ft FSL &amp; 1483ft FEL of Sec 23</b>										
16,296.96	90.00	180.35	6,199.10	-1,487.00	-10,786.50	-352.15	10,792.25	0.00	0.00	0.00
16,300.00	90.00	180.35	6,199.10	-1,487.00	-10,789.55	-352.17	10,795.29	0.05	0.00	-0.05
<b>BHL: 460ft FSL &amp; 1483ft FEL of Sec 23</b>										
16,396.78	90.00	180.29	6,199.10	-1,487.00	-10,886.33	-352.71	10,892.04	0.06	0.00	-0.06

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<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>	KB 25' @ 4712.10usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4712.10usft (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-14-23-3	<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 (°)
697.10	697.10	PIERRE SHALE (BASE FOX HILLS			
3,351.30	3,302.10	PARKMAN			
4,518.40	4,462.10	SUSSEX			
5,190.40	5,134.10	SHANNON			
5,986.46	5,916.10	SHARON SPRINGS SHALE			
6,101.87	6,009.10	NIOBRARA FORMATION			
6,123.76	6,025.10	NIOBRARA A CHALK			
6,240.57	6,100.10	NIOBRARA B CHALK			
6,451.05	6,184.10	NIOBRARA C CHALK			
6,582.44	6,199.10	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 & 1213ft FEL of Sec 11
700.00	700.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1,300.00	1,295.62	-54.11	-31.48	EOB TO 12° INC
3,475.59	3,423.68	-445.10	-258.93	END OF TANGENT
4,075.59	4,019.30	-499.21	-290.41	EOD TO VERTICAL
5,682.44	5,626.14	-499.21	-290.41	KOP (10°/100ft BUR)
6,582.44	6,199.10	-1,072.16	-293.81	BPI: 460ft FNL & 1497ft FEL of Sec 14
16,296.96	6,199.10	-10,786.50	-352.15	EPI: 460ft FSL & 1483ft FEL of Sec 23
16,396.78	6,199.10	-10,886.33	-352.71	BHL: 460ft FSL & 1483ft FEL of Sec 23