

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

NW NW SEC. 13 T7N R61W 6th P.M.

MILLER 7-61 13A-24-2

ORIGINAL WELLBORE

26 July, 2018

Plan: PROPOSAL #1

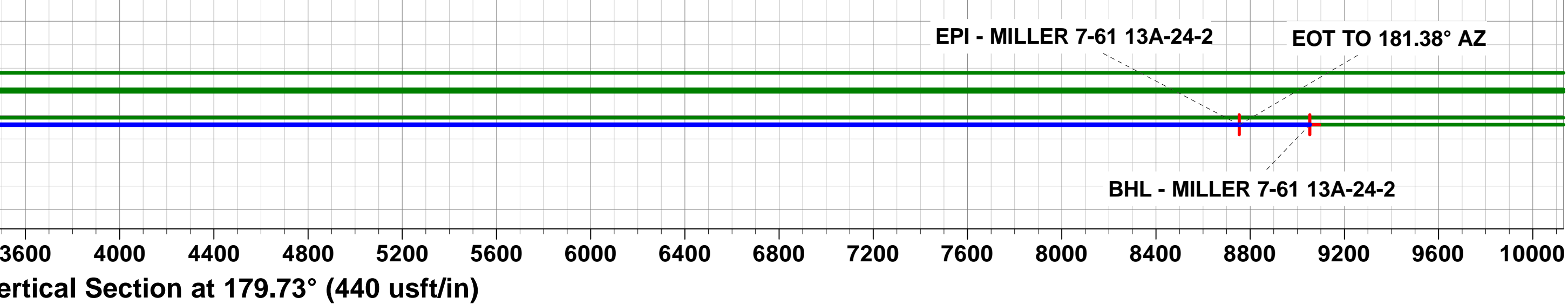
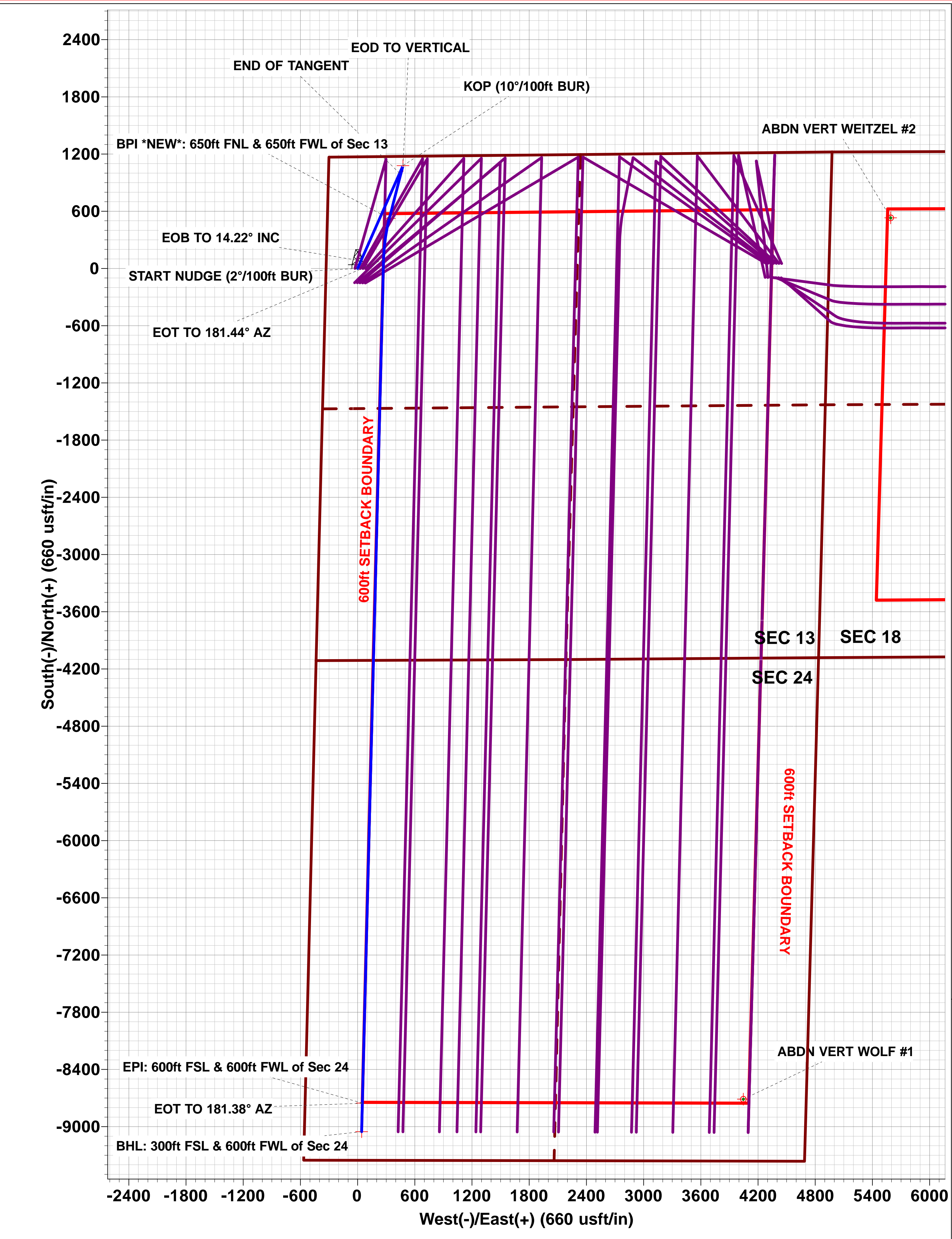
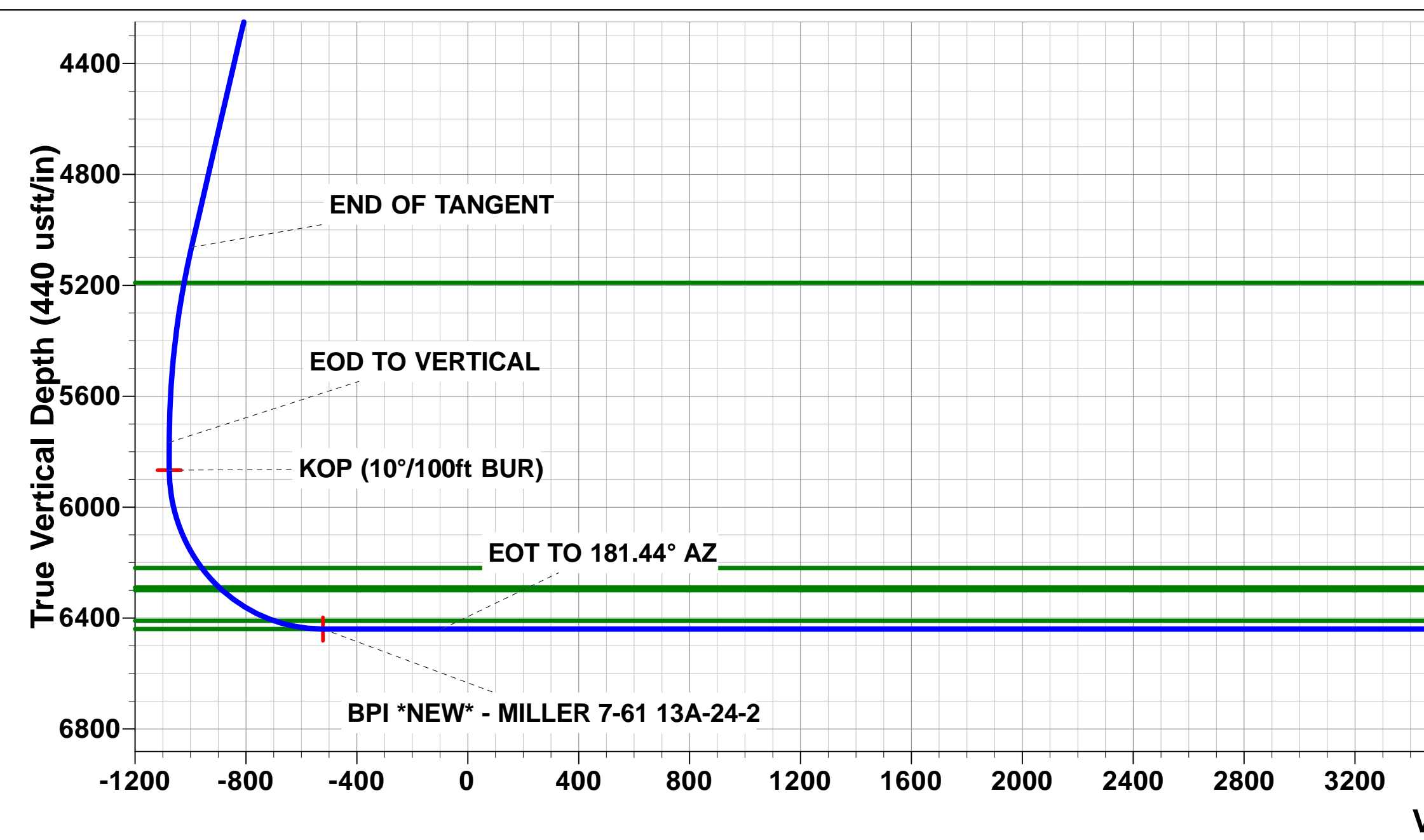
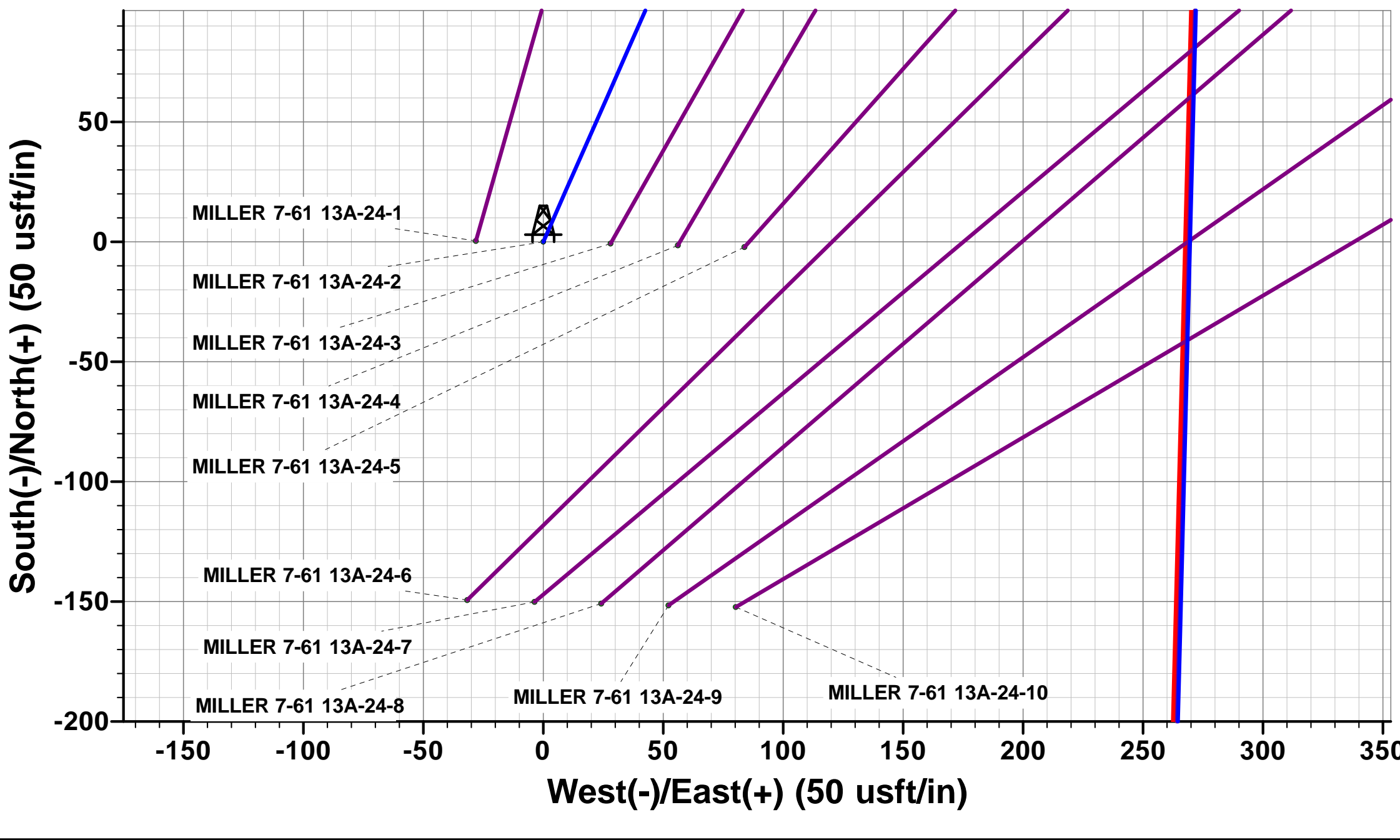
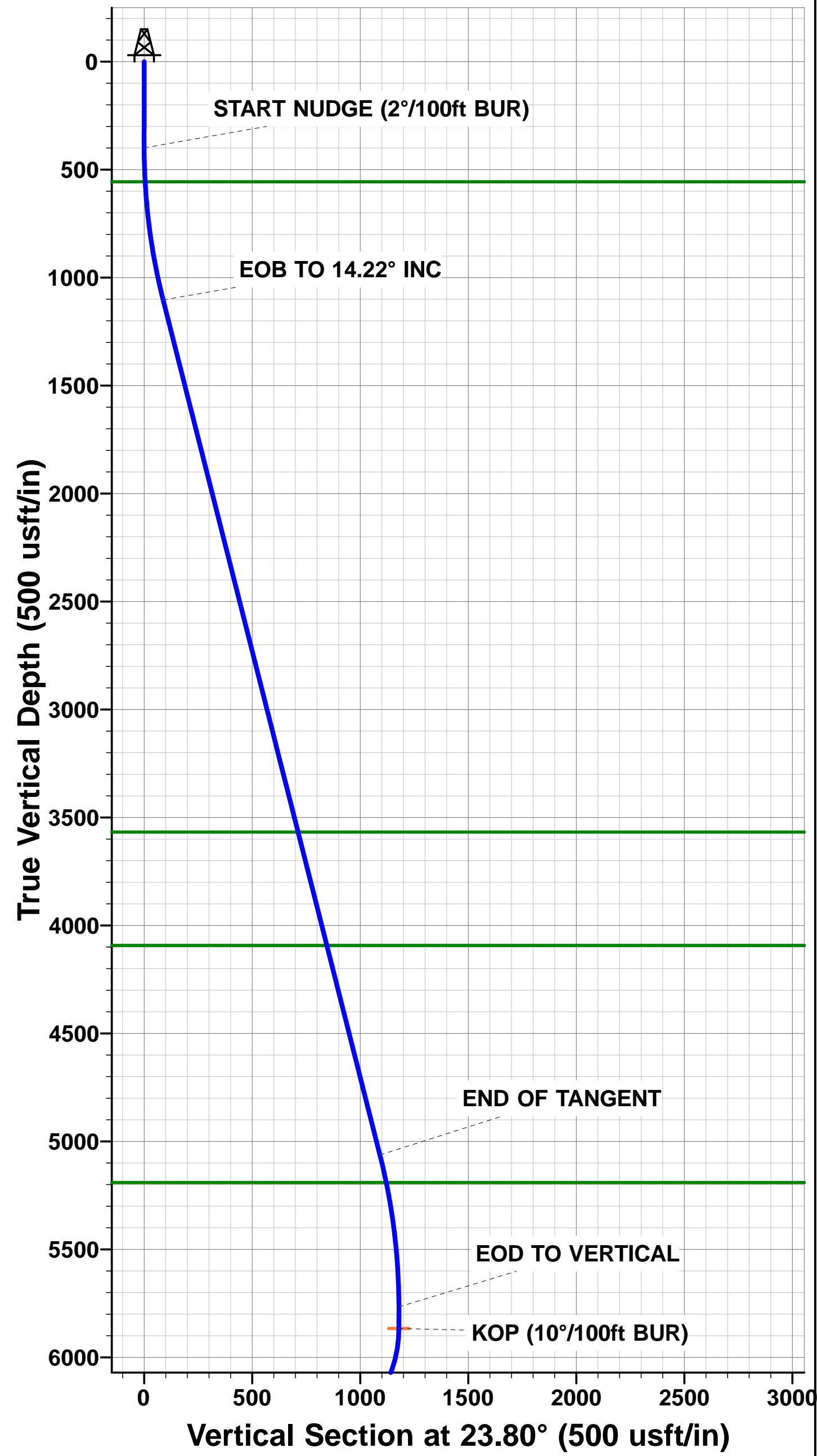




Project: WELD COUNTY, COLORADO (NAD 83)
Site: NW NW SEC. 13 T7N R61W 6th P.M.
Well: MILLER 7-61 13A-24-2
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

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: 1171ft FNL & 331ft FWL of Sec 13	
400.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)	
1103.72	1111.00	14.22	23.80	80.31	35.42	-80.15	87.78	EOB TO 14.22° INC	
5062.92	5195.34	14.22	23.80	998.31	440.26	-996.25	1091.07	END OF TANGENT	
5766.64	5906.34	0.00	0.00	1078.62	475.68	-1076.40	1178.85	EOD TO VERTICAL	
5866.64	6006.34	0.00	0.00	1078.62	475.68	-1076.40	1178.85	KOP (10°/100ft BUR)	
6439.60	6906.35	90.00	194.50	523.91	332.22	-522.36	1751.82	BPI *NEW*: 650ft FNL & 650ft FWL of Sec 13	
6439.60	7341.59	90.00	181.44	93.80	271.99	-92.53	2187.07	EOT TO 181.44° AZ	
6439.60	16191.38	90.00	181.44	-8753.18	49.18	8753.31	11036.85	EPI: 600ft FSL & 600ft FWL of Sec 24	
6439.60	16193.46	90.00	181.38	-8755.27	49.13	8755.40	11036.93	EOT TO 181.38° AZ	
6439.60	16491.30	90.00	181.38	-9053.02	41.96	9053.11	11336.77	BHL: 300ft FSL & 600ft FWL of Sec 24	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - MILLER 7-61 13A-24-2	5866.64	1078.62	475.68	40.582009	-104.162081
BPI *NEW* - MILLER 7-61 13A-24-2	6439.60	523.91	332.22	40.580486	-104.162597
EPI - MILLER 7-61 13A-24-2	6439.60	-8753.18	49.18	40.555022	-104.163616
BHL - MILLER 7-61 13A-24-2	6439.60	-9053.02	41.96	40.554199	-104.163642



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well MILLER 7-61 13A-24-2
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Site:	NW NW SEC. 13 T7N R61W 6th P.M.	North Reference:	True
Well:	MILLER 7-61 13A-24-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	WELD COUNTY, COLORADO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	NW NW SEC. 13 T7N R61W 6th P.M.		
Site Position:		Northing:	1,456,584.76 usft
From:	Lat/Long	Easting:	3,371,122.49 usft
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000 ft
		Latitude:	40.579049
		Longitude:	-104.163894
		Grid Convergence:	0.86 °

Well	MILLER 7-61 13A-24-2					
Well Position	+N/-S	-0.37 usft	Northing:	1,456,584.81 usft	Latitude:	40.579048
	+E/-W	28.06 usft	Easting:	3,371,150.55 usft	Longitude:	-104.163793
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,964.60 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	26/07/2018	7.78	67.06	52,419

Design	PROPOSAL #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	6,439.60	0.00	0.00	179.73

Plan Sections											
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	-4,989.60	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	-4,589.60	0.00	0.00	0.00	0.00	0.00	0.00	
1,111.00	14.22	23.80	1,103.72	-3,885.88	80.31	35.42	2.00	2.00	0.00	23.80	
5,195.34	14.22	23.80	5,062.92	73.32	998.31	440.26	0.00	0.00	0.00	0.00	
5,906.34	0.00	0.00	5,766.64	777.04	1,078.62	475.68	2.00	-2.00	0.00	180.00	
6,006.34	0.00	0.00	5,866.64	877.04	1,078.62	475.68	0.00	0.00	0.00	0.00	KOP - MILLER 7-61
6,906.35	90.00	194.50	6,439.60	1,450.00	523.91	332.22	10.00	10.00	-18.39	194.50	BPI *NEW* - MILLE
7,341.59	90.00	181.44	6,439.60	1,450.00	93.80	271.99	3.00	0.00	-3.00	-90.00	
16,191.38	90.00	181.44	6,439.60	1,450.00	-8,753.18	49.18	0.00	0.00	0.00	0.00	EPI - MILLER 7-61
16,193.46	90.00	181.38	6,439.60	1,450.00	-8,755.27	49.13	3.00	0.00	-3.00	-90.00	
16,491.30	90.00	181.38	6,439.60	1,450.00	-9,053.02	41.96	0.00	0.00	0.00	0.00	BHL - MILLER 7-61

Planning Report



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Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Site:	NW NW SEC. 13 T7N R61W 6th P.M.	North Reference:	True
Well:	MILLER 7-61 13A-24-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
SHL: 1171ft FNL & 331ft FWL of Sec 13										
0.00	0.00	0.00	0.00	4,989.60	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,889.60	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,789.60	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,689.60	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
400.00	0.00	0.00	400.00	4,589.60	0.00	0.00	0.00	0.00	0.00	0.00
500.00	2.00	23.80	499.98	4,489.62	1.60	0.70	-1.59	2.00	2.00	0.00
PIERRE SHALE (BASE OF FOX HILLS)										
556.68	3.13	23.80	556.60	4,433.00	3.92	1.73	-3.91	2.00	2.00	0.00
600.00	4.00	23.80	599.84	4,389.76	6.39	2.82	-6.37	2.00	2.00	0.00
700.00	6.00	23.80	699.45	4,290.15	14.36	6.33	-14.33	2.00	2.00	0.00
800.00	8.00	23.80	798.70	4,190.90	25.51	11.25	-25.46	2.00	2.00	0.00
900.00	10.00	23.80	897.47	4,092.13	39.82	17.56	-39.74	2.00	2.00	0.00
1,000.00	12.00	23.80	995.62	3,993.98	57.28	25.26	-57.16	2.00	2.00	0.00
1,100.00	14.00	23.80	1,093.06	3,896.54	77.86	34.34	-77.70	2.00	2.00	0.00
EOB TO 14.22° INC										
1,111.00	14.22	23.80	1,103.72	3,885.88	80.31	35.42	-80.15	2.00	2.00	0.00
1,200.00	14.22	23.80	1,190.00	3,799.60	100.32	44.24	-100.11	0.00	0.00	0.00
1,300.00	14.22	23.80	1,286.93	3,702.67	122.79	54.15	-122.54	0.00	0.00	0.00
1,400.00	14.22	23.80	1,383.87	3,605.73	145.27	64.07	-144.97	0.00	0.00	0.00
1,500.00	14.22	23.80	1,480.80	3,508.80	167.75	73.98	-167.40	0.00	0.00	0.00
1,600.00	14.22	23.80	1,577.74	3,411.86	190.22	83.89	-189.83	0.00	0.00	0.00
1,700.00	14.22	23.80	1,674.68	3,314.92	212.70	93.80	-212.26	0.00	0.00	0.00
1,800.00	14.22	23.80	1,771.61	3,217.99	235.17	103.71	-234.69	0.00	0.00	0.00
1,900.00	14.22	23.80	1,868.55	3,121.05	257.65	113.63	-257.12	0.00	0.00	0.00
2,000.00	14.22	23.80	1,965.48	3,024.12	280.13	123.54	-279.55	0.00	0.00	0.00
2,100.00	14.22	23.80	2,062.42	2,927.18	302.60	133.45	-301.98	0.00	0.00	0.00
2,200.00	14.22	23.80	2,159.36	2,830.24	325.08	143.36	-324.41	0.00	0.00	0.00
2,300.00	14.22	23.80	2,256.29	2,733.31	347.55	153.27	-346.84	0.00	0.00	0.00
2,400.00	14.22	23.80	2,353.23	2,636.37	370.03	163.19	-369.27	0.00	0.00	0.00
2,500.00	14.22	23.80	2,450.16	2,539.44	392.50	173.10	-391.70	0.00	0.00	0.00
2,600.00	14.22	23.80	2,547.10	2,442.50	414.98	183.01	-414.13	0.00	0.00	0.00
2,700.00	14.22	23.80	2,644.04	2,345.56	437.46	192.92	-436.56	0.00	0.00	0.00
2,800.00	14.22	23.80	2,740.97	2,248.63	459.93	202.83	-458.99	0.00	0.00	0.00
2,900.00	14.22	23.80	2,837.91	2,151.69	482.41	212.75	-481.42	0.00	0.00	0.00
3,000.00	14.22	23.80	2,934.84	2,054.76	504.88	222.66	-503.85	0.00	0.00	0.00
3,100.00	14.22	23.80	3,031.78	1,957.82	527.36	232.57	-526.28	0.00	0.00	0.00
3,200.00	14.22	23.80	3,128.72	1,860.88	549.84	242.48	-548.71	0.00	0.00	0.00
3,300.00	14.22	23.80	3,225.65	1,763.95	572.31	252.39	-571.14	0.00	0.00	0.00
3,400.00	14.22	23.80	3,322.59	1,667.01	594.79	262.31	-593.57	0.00	0.00	0.00
3,500.00	14.22	23.80	3,419.52	1,570.08	617.26	272.22	-615.99	0.00	0.00	0.00
3,600.00	14.22	23.80	3,516.46	1,473.14	639.74	282.13	-638.42	0.00	0.00	0.00
PARKMAN										
3,652.76	14.22	23.80	3,567.60	1,422.00	651.60	287.36	-650.26	0.00	0.00	0.00
3,700.00	14.22	23.80	3,613.40	1,376.20	662.22	292.04	-660.85	0.00	0.00	0.00
3,800.00	14.22	23.80	3,710.33	1,279.27	684.69	301.95	-683.28	0.00	0.00	0.00
3,900.00	14.22	23.80	3,807.27	1,182.33	707.17	311.87	-705.71	0.00	0.00	0.00
4,000.00	14.22	23.80	3,904.20	1,085.40	729.64	321.78	-728.14	0.00	0.00	0.00
4,100.00	14.22	23.80	4,001.14	988.46	752.12	331.69	-750.57	0.00	0.00	0.00
SUSSEX										
4,194.35	14.22	23.80	4,092.60	897.00	773.32	341.04	-771.74	0.00	0.00	0.00
4,200.00	14.22	23.80	4,098.08	891.52	774.59	341.60	-773.00	0.00	0.00	0.00

Planning Report



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Wellbore:	ORIGINAL WELLBORE		
Design:	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)
4,300.00	14.22	23.80	4,195.01	794.59	797.07	351.51	-795.43	0.00	0.00	0.00
4,400.00	14.22	23.80	4,291.95	697.65	819.55	361.43	-817.86	0.00	0.00	0.00
4,500.00	14.22	23.80	4,388.88	600.72	842.02	371.34	-840.29	0.00	0.00	0.00
4,600.00	14.22	23.80	4,485.82	503.78	864.50	381.25	-862.72	0.00	0.00	0.00
4,700.00	14.22	23.80	4,582.76	406.84	886.97	391.16	-885.15	0.00	0.00	0.00
4,800.00	14.22	23.80	4,679.69	309.91	909.45	401.07	-907.58	0.00	0.00	0.00
4,900.00	14.22	23.80	4,776.63	212.97	931.93	410.99	-930.01	0.00	0.00	0.00
5,000.00	14.22	23.80	4,873.56	116.04	954.40	420.90	-952.44	0.00	0.00	0.00
5,100.00	14.22	23.80	4,970.50	19.10	976.88	430.81	-974.87	0.00	0.00	0.00
END OF TANGENT										
5,195.34	14.22	23.80	5,062.92	-73.32	998.31	440.26	-996.25	0.00	0.00	0.00
5,200.00	14.13	23.80	5,067.44	-77.84	999.35	440.72	-997.30	2.00	-2.00	0.00
5,300.00	12.13	23.80	5,164.82	-175.22	1,020.13	449.88	-1,018.03	2.00	-2.00	0.00
SHANNON										
5,326.34	11.60	23.80	5,190.60	-201.00	1,025.08	452.07	-1,022.98	2.00	-2.00	0.00
5,400.00	10.13	23.80	5,262.93	-273.33	1,037.78	457.67	-1,035.65	2.00	-2.00	0.00
5,500.00	8.13	23.80	5,361.66	-372.06	1,052.30	464.07	-1,050.13	2.00	-2.00	0.00
5,600.00	6.13	23.80	5,460.89	-471.29	1,063.65	469.08	-1,061.46	2.00	-2.00	0.00
5,700.00	4.13	23.80	5,560.48	-570.88	1,071.82	472.68	-1,069.62	2.00	-2.00	0.00
5,800.00	2.13	23.80	5,660.33	-670.73	1,076.81	474.88	-1,074.60	2.00	-2.00	0.00
5,900.00	0.13	23.80	5,760.30	-770.70	1,078.61	475.68	-1,076.40	2.00	-2.00	0.00
EOD TO VERTICAL										
5,906.34	0.00	0.00	5,766.64	-777.04	1,078.62	475.68	-1,076.40	2.00	-2.00	0.00
6,000.00	0.00	0.00	5,860.30	-870.70	1,078.62	475.68	-1,076.40	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,006.34	0.00	0.00	5,866.64	-877.04	1,078.62	475.68	-1,076.40	0.00	0.00	0.00
6,100.00	9.37	194.50	5,959.89	-970.29	1,071.22	473.77	-1,069.02	10.00	10.00	0.00
6,200.00	19.37	194.50	6,056.64	-1,067.04	1,047.23	467.56	-1,045.06	10.00	10.00	0.00
6,300.00	29.37	194.50	6,147.61	-1,158.01	1,007.34	457.25	-1,005.21	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,386.61	38.03	194.50	6,219.60	-1,230.00	960.87	445.23	-958.79	10.00	10.00	0.00
6,400.00	39.37	194.50	6,230.05	-1,240.45	952.76	443.13	-950.70	10.00	10.00	0.00
NIOBRARA FORMATION										
6,482.12	47.58	194.50	6,289.60	-1,300.00	898.11	429.00	-896.11	10.00	10.00	0.00
NIOBRARA A CHALK										
6,497.17	49.08	194.50	6,299.60	-1,310.00	887.23	426.18	-885.24	10.00	10.00	0.00
6,500.00	49.37	194.50	6,301.45	-1,311.85	885.15	425.65	-883.17	10.00	10.00	0.00
6,600.00	59.37	194.50	6,359.64	-1,370.04	806.56	405.32	-804.68	10.00	10.00	0.00
6,700.00	69.37	194.50	6,402.84	-1,413.24	719.39	382.78	-717.61	10.00	10.00	0.00
NIOBRARA B CHALK										
6,720.11	71.38	194.50	6,409.60	-1,420.00	701.05	378.03	-699.29	10.00	10.00	0.00
6,800.00	79.37	194.50	6,429.76	-1,440.16	626.27	358.69	-624.61	10.00	10.00	0.00
6,900.00	89.37	194.50	6,439.56	-1,449.96	530.05	333.81	-528.50	10.00	10.00	0.00
BPI *NEW*: 650ft FNL & 650ft FWL of Sec 13 - NIOBRARA B LP										
6,906.35	90.00	194.50	6,439.60	-1,450.00	523.91	332.22	-522.36	10.00	10.00	0.00
7,000.00	90.00	191.69	6,439.60	-1,450.00	432.70	311.00	-431.25	3.00	0.00	-3.00
7,100.00	90.00	188.69	6,439.60	-1,450.00	334.29	293.31	-332.92	3.00	0.00	-3.00
7,200.00	90.00	185.69	6,439.60	-1,450.00	235.08	280.80	-233.78	3.00	0.00	-3.00
7,300.00	90.00	182.69	6,439.60	-1,450.00	135.36	273.49	-134.09	3.00	0.00	-3.00
EOT TO 181.44° AZ										
7,341.59	90.00	181.44	6,439.60	-1,450.00	93.80	271.99	-92.53	3.00	0.00	-3.00
7,400.00	90.00	181.44	6,439.60	-1,450.00	35.41	270.52	-34.15	0.00	0.00	0.00
7,500.00	90.00	181.44	6,439.60	-1,450.00	-64.56	268.00	65.80	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well MILLER 7-61 13A-24-2
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Site:	NW NW SEC. 13 T7N R61W 6th P.M.	North Reference:	True
Well:	MILLER 7-61 13A-24-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
7,600.00	90.00	181.44	6,439.60	-1,450.00	-164.53	265.49	165.76	0.00	0.00	0.00
7,700.00	90.00	181.44	6,439.60	-1,450.00	-264.50	262.97	265.71	0.00	0.00	0.00
7,800.00	90.00	181.44	6,439.60	-1,450.00	-364.47	260.45	365.67	0.00	0.00	0.00
7,900.00	90.00	181.44	6,439.60	-1,450.00	-464.43	257.93	465.62	0.00	0.00	0.00
8,000.00	90.00	181.44	6,439.60	-1,450.00	-564.40	255.41	565.58	0.00	0.00	0.00
8,100.00	90.00	181.44	6,439.60	-1,450.00	-664.37	252.90	665.54	0.00	0.00	0.00
8,200.00	90.00	181.44	6,439.60	-1,450.00	-764.34	250.38	765.49	0.00	0.00	0.00
8,300.00	90.00	181.44	6,439.60	-1,450.00	-864.31	247.86	865.45	0.00	0.00	0.00
8,400.00	90.00	181.44	6,439.60	-1,450.00	-964.27	245.34	965.40	0.00	0.00	0.00
8,500.00	90.00	181.44	6,439.60	-1,450.00	-1,064.24	242.83	1,065.36	0.00	0.00	0.00
8,600.00	90.00	181.44	6,439.60	-1,450.00	-1,164.21	240.31	1,165.31	0.00	0.00	0.00
8,700.00	90.00	181.44	6,439.60	-1,450.00	-1,264.18	237.79	1,265.27	0.00	0.00	0.00
8,800.00	90.00	181.44	6,439.60	-1,450.00	-1,364.15	235.27	1,365.22	0.00	0.00	0.00
8,900.00	90.00	181.44	6,439.60	-1,450.00	-1,464.12	232.76	1,465.18	0.00	0.00	0.00
9,000.00	90.00	181.44	6,439.60	-1,450.00	-1,564.08	230.24	1,565.14	0.00	0.00	0.00
9,100.00	90.00	181.44	6,439.60	-1,450.00	-1,664.05	227.72	1,665.09	0.00	0.00	0.00
9,200.00	90.00	181.44	6,439.60	-1,450.00	-1,764.02	225.20	1,765.05	0.00	0.00	0.00
9,300.00	90.00	181.44	6,439.60	-1,450.00	-1,863.99	222.69	1,865.00	0.00	0.00	0.00
9,400.00	90.00	181.44	6,439.60	-1,450.00	-1,963.96	220.17	1,964.96	0.00	0.00	0.00
9,500.00	90.00	181.44	6,439.60	-1,450.00	-2,063.93	217.65	2,064.91	0.00	0.00	0.00
9,600.00	90.00	181.44	6,439.60	-1,450.00	-2,163.89	215.13	2,164.87	0.00	0.00	0.00
9,700.00	90.00	181.44	6,439.60	-1,450.00	-2,263.86	212.61	2,264.82	0.00	0.00	0.00
9,800.00	90.00	181.44	6,439.60	-1,450.00	-2,363.83	210.10	2,364.78	0.00	0.00	0.00
9,900.00	90.00	181.44	6,439.60	-1,450.00	-2,463.80	207.58	2,464.74	0.00	0.00	0.00
10,000.00	90.00	181.44	6,439.60	-1,450.00	-2,563.77	205.06	2,564.69	0.00	0.00	0.00
10,100.00	90.00	181.44	6,439.60	-1,450.00	-2,663.74	202.54	2,664.65	0.00	0.00	0.00
10,200.00	90.00	181.44	6,439.60	-1,450.00	-2,763.70	200.03	2,764.60	0.00	0.00	0.00
10,300.00	90.00	181.44	6,439.60	-1,450.00	-2,863.67	197.51	2,864.56	0.00	0.00	0.00
10,400.00	90.00	181.44	6,439.60	-1,450.00	-2,963.64	194.99	2,964.51	0.00	0.00	0.00
10,500.00	90.00	181.44	6,439.60	-1,450.00	-3,063.61	192.47	3,064.47	0.00	0.00	0.00
10,600.00	90.00	181.44	6,439.60	-1,450.00	-3,163.58	189.96	3,164.42	0.00	0.00	0.00
10,700.00	90.00	181.44	6,439.60	-1,450.00	-3,263.55	187.44	3,264.38	0.00	0.00	0.00
10,800.00	90.00	181.44	6,439.60	-1,450.00	-3,363.51	184.92	3,364.34	0.00	0.00	0.00
10,900.00	90.00	181.44	6,439.60	-1,450.00	-3,463.48	182.40	3,464.29	0.00	0.00	0.00
11,000.00	90.00	181.44	6,439.60	-1,450.00	-3,563.45	179.89	3,564.25	0.00	0.00	0.00
11,100.00	90.00	181.44	6,439.60	-1,450.00	-3,663.42	177.37	3,664.20	0.00	0.00	0.00
11,200.00	90.00	181.44	6,439.60	-1,450.00	-3,763.39	174.85	3,764.16	0.00	0.00	0.00
11,300.00	90.00	181.44	6,439.60	-1,450.00	-3,863.36	172.33	3,864.11	0.00	0.00	0.00
11,400.00	90.00	181.44	6,439.60	-1,450.00	-3,963.32	169.81	3,964.07	0.00	0.00	0.00
11,500.00	90.00	181.44	6,439.60	-1,450.00	-4,063.29	167.30	4,064.02	0.00	0.00	0.00
11,600.00	90.00	181.44	6,439.60	-1,450.00	-4,163.26	164.78	4,163.98	0.00	0.00	0.00
11,700.00	90.00	181.44	6,439.60	-1,450.00	-4,263.23	162.26	4,263.94	0.00	0.00	0.00
11,800.00	90.00	181.44	6,439.60	-1,450.00	-4,363.20	159.74	4,363.89	0.00	0.00	0.00
11,900.00	90.00	181.44	6,439.60	-1,450.00	-4,463.17	157.23	4,463.85	0.00	0.00	0.00
12,000.00	90.00	181.44	6,439.60	-1,450.00	-4,563.13	154.71	4,563.80	0.00	0.00	0.00
12,100.00	90.00	181.44	6,439.60	-1,450.00	-4,663.10	152.19	4,663.76	0.00	0.00	0.00
12,200.00	90.00	181.44	6,439.60	-1,450.00	-4,763.07	149.67	4,763.71	0.00	0.00	0.00
12,300.00	90.00	181.44	6,439.60	-1,450.00	-4,863.04	147.16	4,863.67	0.00	0.00	0.00
12,400.00	90.00	181.44	6,439.60	-1,450.00	-4,963.01	144.64	4,963.62	0.00	0.00	0.00
12,500.00	90.00	181.44	6,439.60	-1,450.00	-5,062.98	142.12	5,063.58	0.00	0.00	0.00
12,600.00	90.00	181.44	6,439.60	-1,450.00	-5,162.94	139.60	5,163.54	0.00	0.00	0.00
12,700.00	90.00	181.44	6,439.60	-1,450.00	-5,262.91	137.09	5,263.49	0.00	0.00	0.00
12,800.00	90.00	181.44	6,439.60	-1,450.00	-5,362.88	134.57	5,363.45	0.00	0.00	0.00
12,900.00	90.00	181.44	6,439.60	-1,450.00	-5,462.85	132.05	5,463.40	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well MILLER 7-61 13A-24-2
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Site:	NW NW SEC. 13 T7N R61W 6th P.M.	North Reference:	True
Well:	MILLER 7-61 13A-24-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
13,000.00	90.00	181.44	6,439.60	-1,450.00	-5,562.82	129.53	5,563.36	0.00	0.00	0.00
13,100.00	90.00	181.44	6,439.60	-1,450.00	-5,662.79	127.01	5,663.31	0.00	0.00	0.00
13,200.00	90.00	181.44	6,439.60	-1,450.00	-5,762.75	124.50	5,763.27	0.00	0.00	0.00
13,300.00	90.00	181.44	6,439.60	-1,450.00	-5,862.72	121.98	5,863.22	0.00	0.00	0.00
13,400.00	90.00	181.44	6,439.60	-1,450.00	-5,962.69	119.46	5,963.18	0.00	0.00	0.00
13,500.00	90.00	181.44	6,439.60	-1,450.00	-6,062.66	116.94	6,063.14	0.00	0.00	0.00
13,600.00	90.00	181.44	6,439.60	-1,450.00	-6,162.63	114.43	6,163.09	0.00	0.00	0.00
13,700.00	90.00	181.44	6,439.60	-1,450.00	-6,262.59	111.91	6,263.05	0.00	0.00	0.00
13,800.00	90.00	181.44	6,439.60	-1,450.00	-6,362.56	109.39	6,363.00	0.00	0.00	0.00
13,900.00	90.00	181.44	6,439.60	-1,450.00	-6,462.53	106.87	6,462.96	0.00	0.00	0.00
14,000.00	90.00	181.44	6,439.60	-1,450.00	-6,562.50	104.36	6,562.91	0.00	0.00	0.00
14,100.00	90.00	181.44	6,439.60	-1,450.00	-6,662.47	101.84	6,662.87	0.00	0.00	0.00
14,200.00	90.00	181.44	6,439.60	-1,450.00	-6,762.44	99.32	6,762.82	0.00	0.00	0.00
14,300.00	90.00	181.44	6,439.60	-1,450.00	-6,862.40	96.80	6,862.78	0.00	0.00	0.00
14,400.00	90.00	181.44	6,439.60	-1,450.00	-6,962.37	94.29	6,962.74	0.00	0.00	0.00
14,500.00	90.00	181.44	6,439.60	-1,450.00	-7,062.34	91.77	7,062.69	0.00	0.00	0.00
14,600.00	90.00	181.44	6,439.60	-1,450.00	-7,162.31	89.25	7,162.65	0.00	0.00	0.00
14,700.00	90.00	181.44	6,439.60	-1,450.00	-7,262.28	86.73	7,262.60	0.00	0.00	0.00
14,800.00	90.00	181.44	6,439.60	-1,450.00	-7,362.25	84.21	7,362.56	0.00	0.00	0.00
14,900.00	90.00	181.44	6,439.60	-1,450.00	-7,462.21	81.70	7,462.51	0.00	0.00	0.00
15,000.00	90.00	181.44	6,439.60	-1,450.00	-7,562.18	79.18	7,562.47	0.00	0.00	0.00
15,100.00	90.00	181.44	6,439.60	-1,450.00	-7,662.15	76.66	7,662.42	0.00	0.00	0.00
15,200.00	90.00	181.44	6,439.60	-1,450.00	-7,762.12	74.14	7,762.38	0.00	0.00	0.00
15,300.00	90.00	181.44	6,439.60	-1,450.00	-7,862.09	71.63	7,862.34	0.00	0.00	0.00
15,400.00	90.00	181.44	6,439.60	-1,450.00	-7,962.06	69.11	7,962.29	0.00	0.00	0.00
15,500.00	90.00	181.44	6,439.60	-1,450.00	-8,062.02	66.59	8,062.25	0.00	0.00	0.00
15,600.00	90.00	181.44	6,439.60	-1,450.00	-8,161.99	64.07	8,162.20	0.00	0.00	0.00
15,700.00	90.00	181.44	6,439.60	-1,450.00	-8,261.96	61.56	8,262.16	0.00	0.00	0.00
15,800.00	90.00	181.44	6,439.60	-1,450.00	-8,361.93	59.04	8,362.11	0.00	0.00	0.00
15,900.00	90.00	181.44	6,439.60	-1,450.00	-8,461.90	56.52	8,462.07	0.00	0.00	0.00
16,000.00	90.00	181.44	6,439.60	-1,450.00	-8,561.87	54.00	8,562.02	0.00	0.00	0.00
16,100.00	90.00	181.44	6,439.60	-1,450.00	-8,661.83	51.49	8,661.98	0.00	0.00	0.00
EPI: 600ft FSL & 600ft FWL of Sec 24										
16,191.38	90.00	181.44	6,439.60	-1,450.00	-8,753.18	49.18	8,753.31	0.00	0.00	0.00
EOT TO 181.38° AZ										
16,193.46	90.00	181.38	6,439.60	-1,450.00	-8,755.27	49.13	8,755.40	3.00	0.00	-3.00
16,200.00	90.00	181.38	6,439.60	-1,450.00	-8,761.80	48.98	8,761.94	0.00	0.00	0.00
16,300.00	90.00	181.38	6,439.60	-1,450.00	-8,861.77	46.57	8,861.89	0.00	0.00	0.00
16,400.00	90.00	181.38	6,439.60	-1,450.00	-8,961.74	44.16	8,961.85	0.00	0.00	0.00
BHL: 300ft FSL & 600ft FWL of Sec 24										
16,491.30	90.00	181.38	6,439.60	-1,450.00	-9,053.02	41.96	9,053.11	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well MILLER 7-61 13A-24-2
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4989.60usft (Original Well Elev)
Site:	NW NW SEC. 13 T7N R61W 6th P.M.	North Reference:	True
Well:	MILLER 7-61 13A-24-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
556.68	556.60	PIERRE SHALE (BASE OF FOX HI			
3,652.76	3,567.60	PARKMAN			
4,194.35	4,092.60	SUSSEX			
5,326.34	5,190.60	SHANNON			
6,386.61	6,219.60	SHARON SPRINGS SHALE			
6,482.12	6,289.60	NIOBRARA FORMATION			
6,497.17	6,299.60	NIOBRARA A CHALK			
6,720.11	6,409.60	NIOBRARA B CHALK			
6,906.35	6,439.60	NIOBRARA B 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: 1171ft FNL & 331ft FWL of Sec 13
400.00	400.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1,111.00	1,103.72	80.31	35.42	EOB TO 14.22° INC
5,195.34	5,062.92	998.31	440.26	END OF TANGENT
5,906.34	5,766.64	1,078.62	475.68	EOD TO VERTICAL
6,006.34	5,866.64	1,078.62	475.68	KOP (10°/100ft BUR)
6,906.35	6,439.60	523.91	332.22	BPI *NEW*: 650ft FNL & 650ft FWL of Sec 13
7,341.59	6,439.60	93.80	271.99	EOT TO 181.44° AZ
16,191.38	6,439.60	-8,753.18	49.18	EPI: 600ft FSL & 600ft FWL of Sec 24
16,193.46	6,439.60	-8,755.27	49.13	EOT TO 181.38° AZ
16,491.30	6,439.60	-9,053.02	41.96	BHL: 300ft FSL & 600ft FWL of Sec 24