

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

SW NW SEC. 8 T9N R59W 6th P.M.

TIMBRO 9-59 8A-9-1

ORIGINAL WELLBORE

07 February, 2018

Plan: PROPOSAL #1





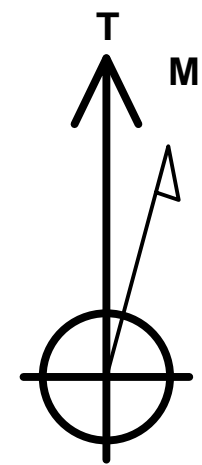
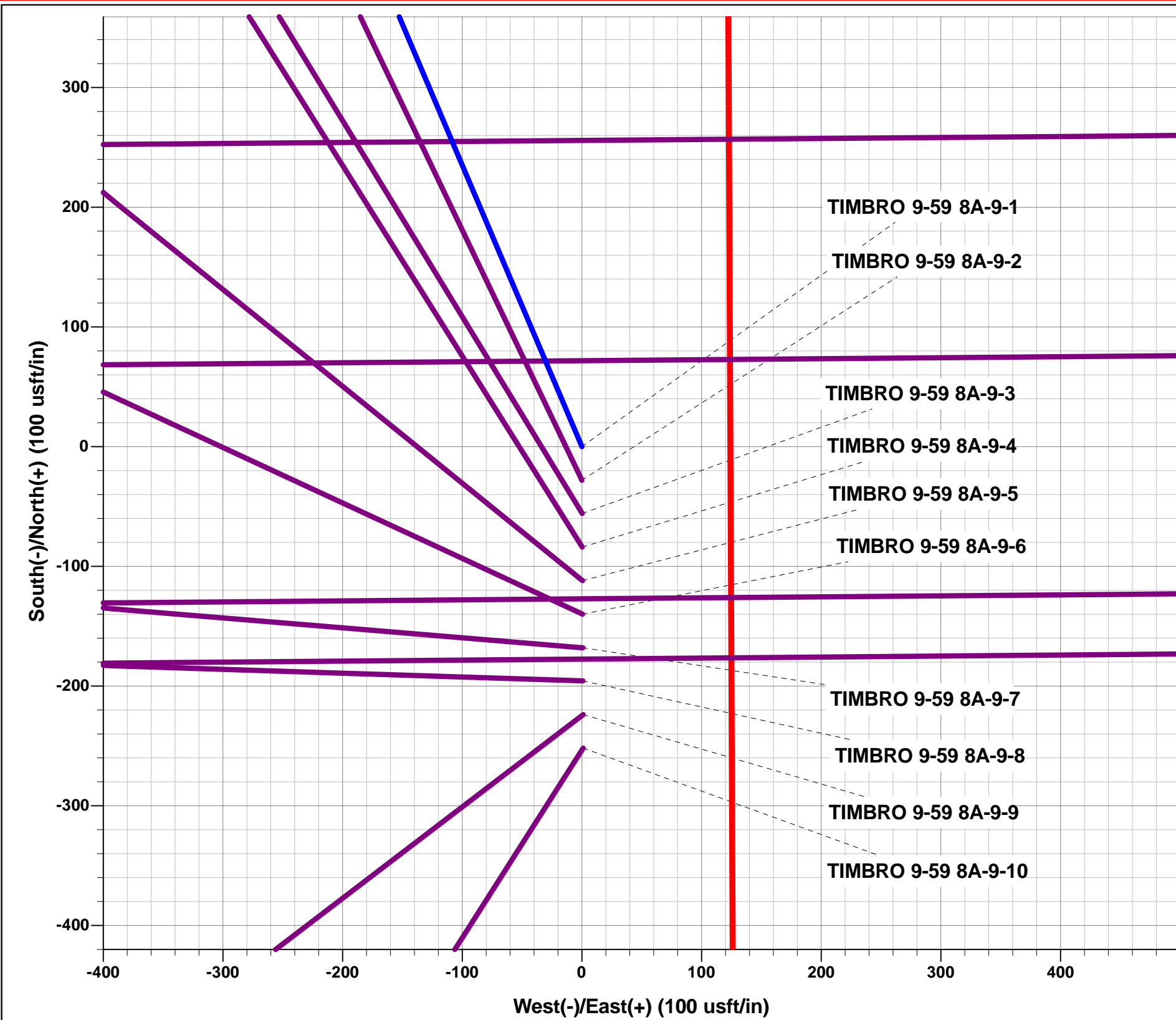
Project: WELD COUNTY, COLORADO (NAD 83)
Site: SW NW SEC. 8 T9N R59W 6th P.M.
Well: TIMBRO 9-59 8A-9-1
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

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: 1672ft FNL & 475ft FWL of Sec 8
100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)
734.31	739.62	12.79	336.97	65.44	-27.81	-19.89	71.11	EOB TO 12.79° INC
5218.03	5337.45	12.79	336.97	1002.37	-426.03	-304.64	1089.15	END OF TANGENT
5852.34	5977.06	0.00	0.00	1067.81	-453.84	-324.53	1160.25	EOD TO VERTICAL
5952.34	6077.06	0.00	0.00	1067.81	-453.84	-324.53	1160.25	KOP (10°/100ft BUR)
6525.30	6977.07	90.00	89.52	1072.61	119.10	244.97	1733.22	BPI: 600ft FNL & 600ft FWL of Sec 8
6525.30	16256.20	90.00	89.51	1150.91	9397.91	9468.06	11012.35	EPI: 602ft FNL & 600ft FEL of Sec 9
6525.30	16256.95	90.00	89.49	1150.92	9398.66	9468.81	11013.10	EOT TO 89.49° AZ
6525.30	16556.19	90.00	89.49	1153.58	9697.88	9766.25	11312.34	BHL: 600ft FNL & 300ft FEL of Sec 9

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - TIMBRO 9-59 8A-9-1	5952.34	1067.81	-453.84	40.770634	-104.011659
BPI - TIMBRO 9-59 8A-9-1	6525.30	1072.61	119.10	40.770647	-104.009591
EPI - TIMBRO 9-59 8A-9-1	6525.30	1150.91	9397.91	40.770857	-103.976092
BHL - TIMBRO 9-59 8A-9-1	6525.30	1153.58	9697.88	40.770864	-103.975009



Azimuths to True North
Magnetic North: 7.76°

Magnetic Field
Strength: 52582.8snT
Dip Angle: 67.24°
Date: 07/02/2018
Model: IGRF2015

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
506.30	507.67	PIERRE SHALE
3496.30	3571.90	PARKMAN
3821.30	3905.17	SUSSEX
4761.30	4869.10	SHANNON
6120.30	6247.53	SHARON SPRINGS SHALE
6185.30	6316.97	NIOBRARA FORMATION
6195.30	6327.97	NIOBRARA A CHALK
6305.30	6457.33	NIOBRARA B CHALK
6375.30	6552.85	NIOBRARA C CHALK
6480.30	6748.47	FT HAYS
6515.30	6869.86	CODELL

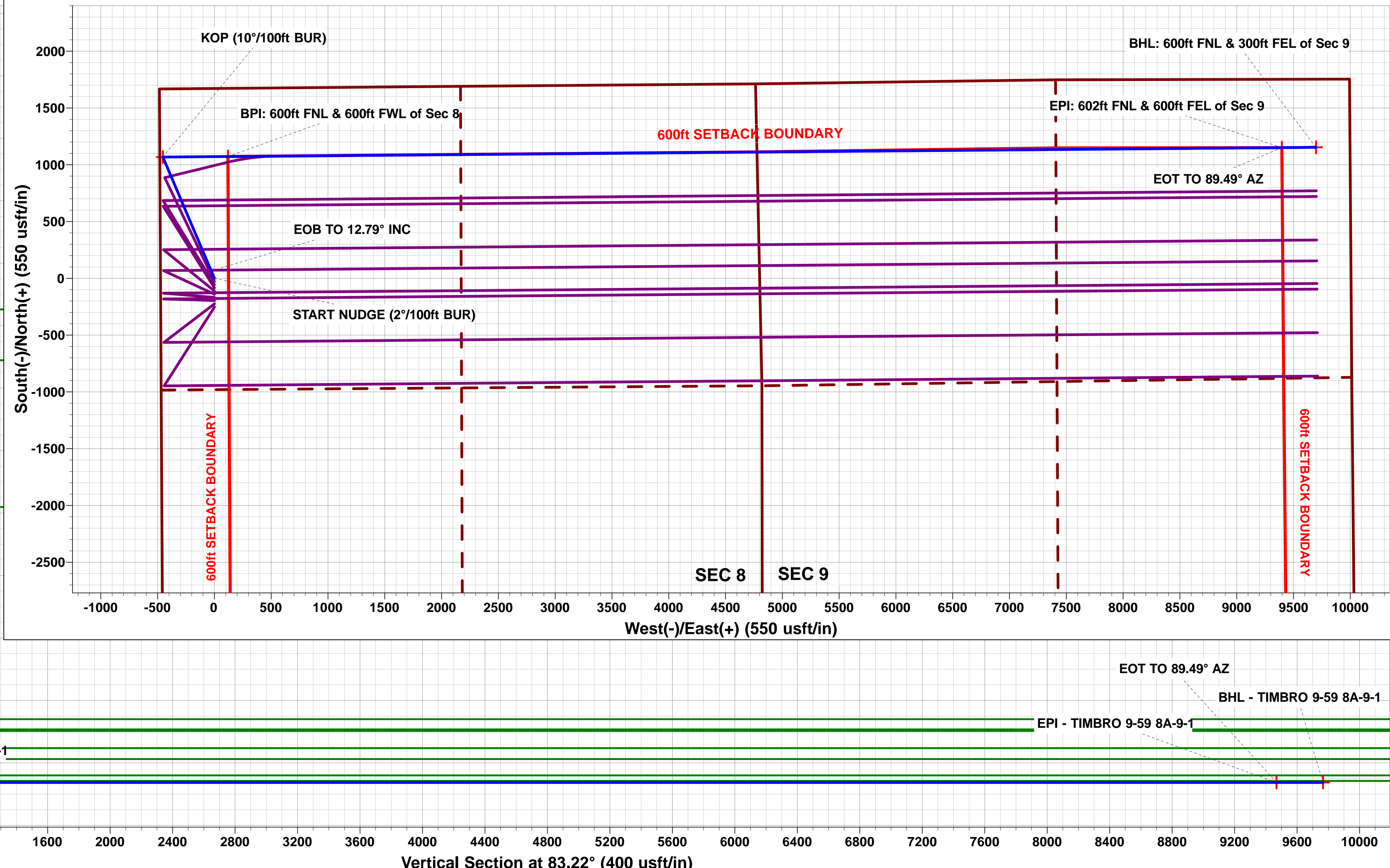
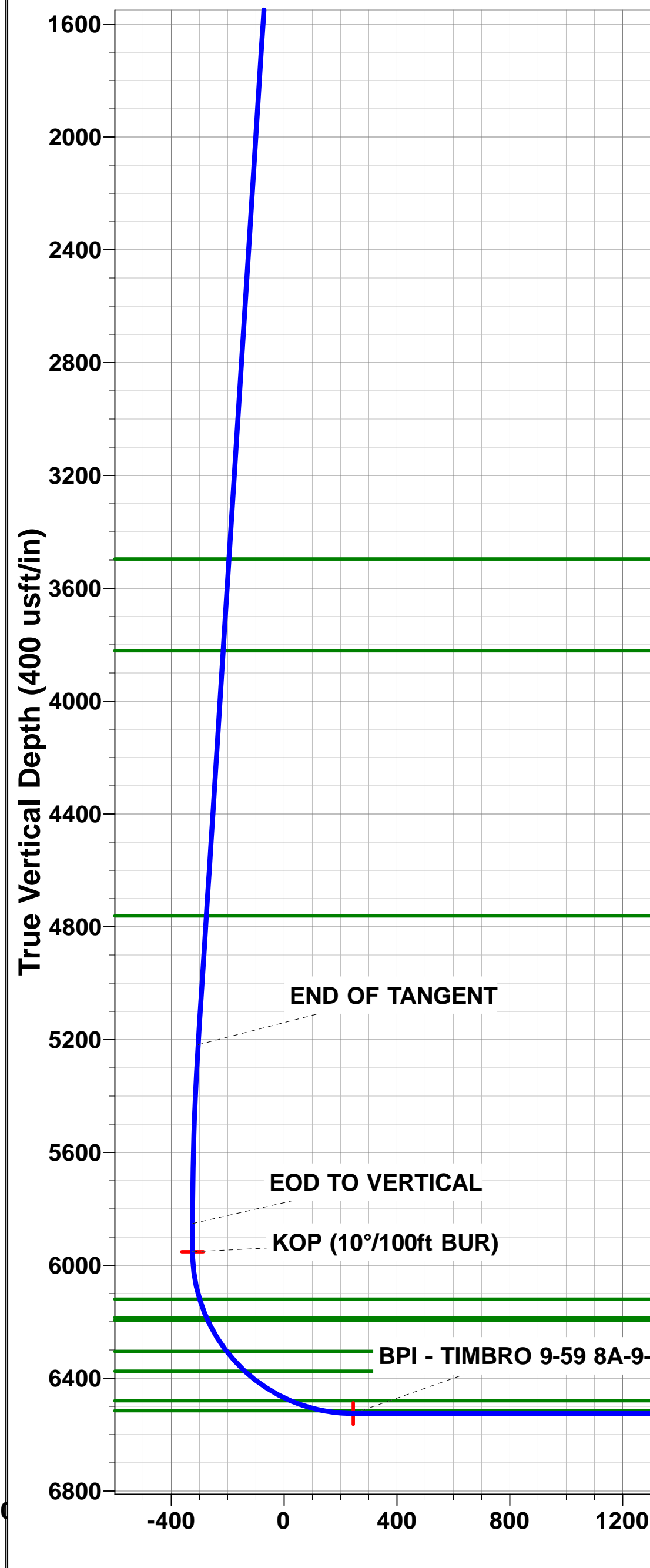
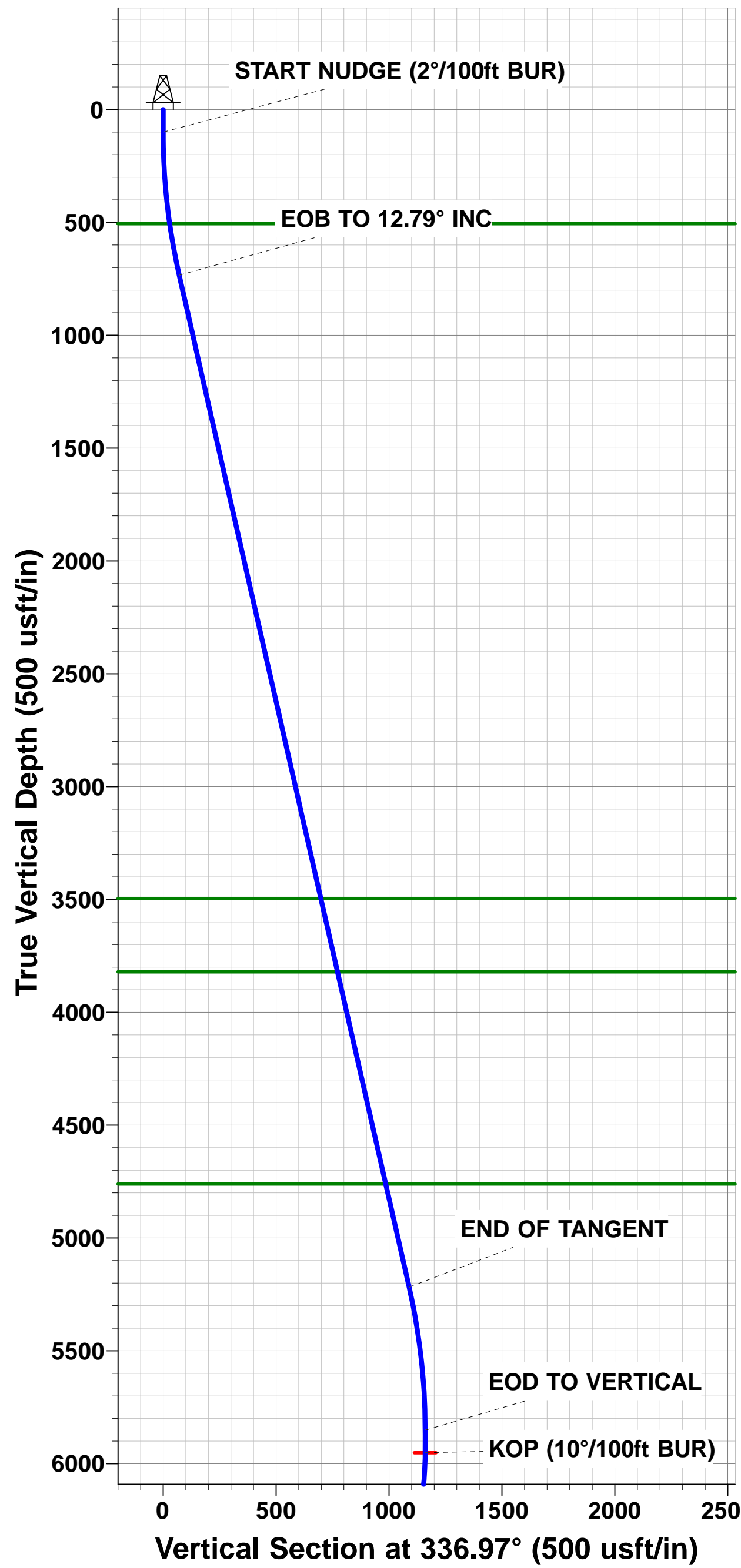
PROPOSED LOCAL COORDINATES:

SHL: 1672ft FNL & 475ft FWL of Sec 8

BEGIN PROD INT: 600ft FNL & 600ft FWL of Sec 8

END PROD INTERVAL: 602ft FNL & 600ft FEL of Sec 9

BHL: 600ft FNL & 300ft FEL of Sec 9



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 9-59 8A-9-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5111.30usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5111.30usft (Original Well Elev)
Site:	SW NW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8A-9-1	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		SW NW SEC. 8 T9N R59W 6th P.M.			
Site Position:		Northing:	1,525,987.12 usft	Latitude:	40.767703
From:	Lat/Long	Easting:	3,412,704.28 usft	Longitude:	-104.010021
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000ft	Grid Convergence:	0.96 °

Well	TIMBRO 9-59 8A-9-1					
Well Position	+N-S	0.00 usft	Northing:	1,525,987.12 usft	Latitude:	40.767703
	+E-W	0.00 usft	Easting:	3,412,704.28 usft	Longitude:	-104.010021
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,086.30 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	07/02/2018	7.76	67.24	52,583

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 (°)
	6,525.30	0.00	0.00	83.22

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	-5,111.30	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	-5,011.30	0.00	0.00	0.00	0.00	0.00	0.00	
739.62	12.79	336.97	734.31	-4,376.99	65.44	-27.81	2.00	2.00	0.00	336.97	
5,337.45	12.79	336.97	5,218.03	106.73	1,002.37	-426.03	0.00	0.00	0.00	0.00	
5,977.06	0.00	0.00	5,852.34	741.04	1,067.81	-453.84	2.00	-2.00	0.00	180.00	
6,077.06	0.00	0.00	5,952.34	841.04	1,067.81	-453.84	0.00	0.00	0.00	0.00	KOP - TIMBRO 9-5
6,977.07	90.00	89.52	6,525.30	1,414.00	1,072.61	119.10	10.00	10.00	9.95	89.52	BPI - TIMBRO 9-59
16,256.20	90.00	89.51	6,525.30	1,414.00	1,150.91	9,397.91	0.00	0.00	0.00	-97.28	EPI - TIMBRO 9-59
16,256.95	90.00	89.49	6,525.30	1,414.00	1,150.92	9,398.66	3.00	0.00	-3.00	-90.00	
16,556.19	90.00	89.49	6,525.30	1,414.00	1,153.58	9,697.88	0.00	0.00	0.00	0.00	BHL - TIMBRO 9-59

Planning Report



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Site:	SW NW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8A-9-1	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: 1672ft FNL & 475ft FWL of Sec 8										
0.00	0.00	0.00	0.00	5,111.30	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
100.00	0.00	0.00	100.00	5,011.30	0.00	0.00	0.00	0.00	0.00	0.00
200.00	2.00	336.97	199.98	4,911.32	1.61	-0.68	-0.49	2.00	2.00	0.00
300.00	4.00	336.97	299.84	4,811.46	6.42	-2.73	-1.95	2.00	2.00	0.00
400.00	6.00	336.97	399.45	4,711.85	14.44	-6.14	-4.39	2.00	2.00	0.00
500.00	8.00	336.97	498.70	4,612.60	25.66	-10.91	-7.80	2.00	2.00	0.00
PIERRE SHALE (BASE OF FOX HILLS)										
507.67	8.15	336.97	506.30	4,605.00	26.65	-11.33	-8.10	2.00	2.00	0.00
600.00	10.00	336.97	597.47	4,513.83	40.05	-17.02	-12.17	2.00	2.00	0.00
700.00	12.00	336.97	695.62	4,415.68	57.61	-24.49	-17.51	2.00	2.00	0.00
EOB TO 12.79° INC										
739.62	12.79	336.97	734.31	4,376.99	65.44	-27.81	-19.89	2.00	2.00	0.00
800.00	12.79	336.97	793.20	4,318.10	77.75	-33.04	-23.63	0.00	0.00	0.00
900.00	12.79	336.97	890.72	4,220.58	98.12	-41.70	-29.82	0.00	0.00	0.00
1,000.00	12.79	336.97	988.24	4,123.06	118.50	-50.37	-36.02	0.00	0.00	0.00
1,100.00	12.79	336.97	1,085.75	4,025.55	138.88	-59.03	-42.21	0.00	0.00	0.00
1,200.00	12.79	336.97	1,183.27	3,928.03	159.26	-67.69	-48.40	0.00	0.00	0.00
1,300.00	12.79	336.97	1,280.79	3,830.51	179.63	-76.35	-54.60	0.00	0.00	0.00
1,400.00	12.79	336.97	1,378.31	3,732.99	200.01	-85.01	-60.79	0.00	0.00	0.00
1,500.00	12.79	336.97	1,475.83	3,635.47	220.39	-93.67	-66.98	0.00	0.00	0.00
1,600.00	12.79	336.97	1,573.34	3,537.96	240.77	-102.33	-73.18	0.00	0.00	0.00
1,700.00	12.79	336.97	1,670.86	3,440.44	261.14	-110.99	-79.37	0.00	0.00	0.00
1,800.00	12.79	336.97	1,768.38	3,342.92	281.52	-119.65	-85.56	0.00	0.00	0.00
1,900.00	12.79	336.97	1,865.90	3,245.40	301.90	-128.31	-91.75	0.00	0.00	0.00
2,000.00	12.79	336.97	1,963.42	3,147.88	322.28	-136.97	-97.95	0.00	0.00	0.00
2,100.00	12.79	336.97	2,060.93	3,050.37	342.65	-145.63	-104.14	0.00	0.00	0.00
2,200.00	12.79	336.97	2,158.45	2,952.85	363.03	-154.30	-110.33	0.00	0.00	0.00
2,300.00	12.79	336.97	2,255.97	2,855.33	383.41	-162.96	-116.53	0.00	0.00	0.00
2,400.00	12.79	336.97	2,353.49	2,757.81	403.79	-171.62	-122.72	0.00	0.00	0.00
2,500.00	12.79	336.97	2,451.00	2,660.30	424.17	-180.28	-128.91	0.00	0.00	0.00
2,600.00	12.79	336.97	2,548.52	2,562.78	444.54	-188.94	-135.11	0.00	0.00	0.00
2,700.00	12.79	336.97	2,646.04	2,465.26	464.92	-197.60	-141.30	0.00	0.00	0.00
2,800.00	12.79	336.97	2,743.56	2,367.74	485.30	-206.26	-147.49	0.00	0.00	0.00
2,900.00	12.79	336.97	2,841.08	2,270.22	505.68	-214.92	-153.69	0.00	0.00	0.00
3,000.00	12.79	336.97	2,938.59	2,172.71	526.05	-223.58	-159.88	0.00	0.00	0.00
3,100.00	12.79	336.97	3,036.11	2,075.19	546.43	-232.24	-166.07	0.00	0.00	0.00
3,200.00	12.79	336.97	3,133.63	1,977.67	566.81	-240.90	-172.27	0.00	0.00	0.00
3,300.00	12.79	336.97	3,231.15	1,880.15	587.19	-249.57	-178.46	0.00	0.00	0.00
3,400.00	12.79	336.97	3,328.67	1,782.63	607.56	-258.23	-184.65	0.00	0.00	0.00
3,500.00	12.79	336.97	3,426.18	1,685.12	627.94	-266.89	-190.85	0.00	0.00	0.00
PARKMAN										
3,571.90	12.79	336.97	3,496.30	1,615.00	642.59	-273.11	-195.30	0.00	0.00	0.00
3,600.00	12.79	336.97	3,523.70	1,587.60	648.32	-275.55	-197.04	0.00	0.00	0.00
3,700.00	12.79	336.97	3,621.22	1,490.08	668.70	-284.21	-203.23	0.00	0.00	0.00
3,800.00	12.79	336.97	3,718.74	1,392.56	689.07	-292.87	-209.43	0.00	0.00	0.00
3,900.00	12.79	336.97	3,816.26	1,295.04	709.45	-301.53	-215.62	0.00	0.00	0.00
SUSSEX										
3,905.17	12.79	336.97	3,821.30	1,290.00	710.51	-301.98	-215.94	0.00	0.00	0.00
4,000.00	12.79	336.97	3,913.77	1,197.53	729.83	-310.19	-221.81	0.00	0.00	0.00
4,100.00	12.79	336.97	4,011.29	1,100.01	750.21	-318.85	-228.01	0.00	0.00	0.00
4,200.00	12.79	336.97	4,108.81	1,002.49	770.58	-327.51	-234.20	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	12.79	336.97	4,206.33	904.97	790.96	-336.17	-240.39	0.00	0.00	0.00
4,400.00	12.79	336.97	4,303.85	807.45	811.34	-344.84	-246.59	0.00	0.00	0.00
4,500.00	12.79	336.97	4,401.36	709.94	831.72	-353.50	-252.78	0.00	0.00	0.00
4,600.00	12.79	336.97	4,498.88	612.42	852.09	-362.16	-258.97	0.00	0.00	0.00
4,700.00	12.79	336.97	4,596.40	514.90	872.47	-370.82	-265.17	0.00	0.00	0.00
4,800.00	12.79	336.97	4,693.92	417.38	892.85	-379.48	-271.36	0.00	0.00	0.00
SHANNON										
4,869.10	12.79	336.97	4,761.30	350.00	906.93	-385.46	-275.64	0.00	0.00	0.00
4,900.00	12.79	336.97	4,791.43	319.87	913.23	-388.14	-277.55	0.00	0.00	0.00
5,000.00	12.79	336.97	4,888.95	222.35	933.60	-396.80	-283.75	0.00	0.00	0.00
5,100.00	12.79	336.97	4,986.47	124.83	953.98	-405.46	-289.94	0.00	0.00	0.00
5,200.00	12.79	336.97	5,083.99	27.31	974.36	-414.12	-296.13	0.00	0.00	0.00
5,300.00	12.79	336.97	5,181.51	-70.21	994.74	-422.78	-302.33	0.00	0.00	0.00
END OF TANGENT										
5,337.45	12.79	336.97	5,218.03	-106.73	1,002.37	-426.03	-304.64	0.00	0.00	0.00
5,400.00	11.54	336.97	5,279.17	-167.87	1,014.50	-431.18	-308.33	2.00	-2.00	0.00
5,500.00	9.54	336.97	5,377.48	-266.18	1,031.34	-438.34	-313.45	2.00	-2.00	0.00
5,600.00	7.54	336.97	5,476.36	-365.06	1,045.01	-444.15	-317.60	2.00	-2.00	0.00
5,700.00	5.54	336.97	5,575.71	-464.41	1,055.49	-448.60	-320.79	2.00	-2.00	0.00
5,800.00	3.54	336.97	5,675.39	-564.09	1,062.78	-451.70	-323.00	2.00	-2.00	0.00
5,900.00	1.54	336.97	5,775.29	-663.99	1,066.86	-453.43	-324.24	2.00	-2.00	0.00
EOD TO VERTICAL										
5,977.06	0.00	0.00	5,852.34	-741.04	1,067.81	-453.84	-324.53	2.00	-2.00	0.00
6,000.00	0.00	0.00	5,875.28	-763.98	1,067.81	-453.84	-324.53	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,077.06	0.00	0.00	5,952.34	-841.04	1,067.81	-453.84	-324.53	0.00	0.00	0.00
6,100.00	2.29	89.52	5,975.27	-863.97	1,067.81	-453.38	-324.08	10.00	10.00	0.00
6,200.00	12.29	89.52	6,074.34	-963.04	1,067.92	-440.70	-311.48	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,247.53	17.05	89.52	6,120.30	-1,009.00	1,068.02	-428.67	-299.52	10.00	10.00	0.00
6,300.00	22.29	89.52	6,169.69	-1,058.39	1,068.17	-411.01	-281.97	10.00	10.00	0.00
NIOBRARA FORMATION										
6,316.97	23.99	89.52	6,185.30	-1,074.00	1,068.22	-404.34	-275.34	10.00	10.00	0.00
NIOBRARA A CHALK										
6,327.97	25.09	89.52	6,195.30	-1,084.00	1,068.26	-399.78	-270.80	10.00	10.00	0.00
6,400.00	32.29	89.52	6,258.45	-1,147.15	1,068.55	-365.22	-236.45	10.00	10.00	0.00
NIOBRARA B CHALK										
6,457.33	38.03	89.52	6,305.30	-1,194.00	1,068.83	-332.22	-203.64	10.00	10.00	0.00
6,500.00	42.29	89.52	6,337.90	-1,226.60	1,069.06	-304.71	-176.30	10.00	10.00	0.00
NIOBRARA C CHALK										
6,552.85	47.58	89.52	6,375.30	-1,264.00	1,069.37	-267.39	-139.21	10.00	10.00	0.00
6,600.00	52.29	89.52	6,405.64	-1,294.34	1,069.67	-231.32	-103.35	10.00	10.00	0.00
6,700.00	62.29	89.52	6,459.60	-1,348.30	1,070.38	-147.29	-19.82	10.00	10.00	0.00
FT HAYS										
6,748.47	67.14	89.52	6,480.30	-1,369.00	1,070.74	-103.47	23.73	10.00	10.00	0.00
6,800.00	72.29	89.52	6,498.16	-1,386.86	1,071.15	-55.16	71.75	10.00	10.00	0.00
CODELL										
6,869.86	79.28	89.52	6,515.30	-1,404.00	1,071.71	12.52	139.03	10.00	10.00	0.00
6,900.00	82.29	89.52	6,520.12	-1,408.82	1,071.96	42.27	168.59	10.00	10.00	0.00
BPI: 600ft FNL & 600ft FWL of Sec 8										
6,977.07	90.00	89.52	6,525.30	-1,414.00	1,072.61	119.10	244.97	10.00	10.00	0.00
7,000.00	90.00	89.52	6,525.30	-1,414.00	1,072.80	142.03	267.76	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 9-59 8A-9-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5111.30usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5111.30usft (Original Well Elev)
Site:	SW NW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8A-9-1	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)
7,100.00	90.00	89.52	6,525.30	-1,414.00	1,073.64	242.03	367.15	0.00	0.00	0.00
7,200.00	90.00	89.52	6,525.30	-1,414.00	1,074.47	342.02	466.55	0.00	0.00	0.00
7,300.00	90.00	89.52	6,525.30	-1,414.00	1,075.31	442.02	565.94	0.00	0.00	0.00
7,400.00	90.00	89.52	6,525.30	-1,414.00	1,076.15	542.02	665.34	0.00	0.00	0.00
7,500.00	90.00	89.52	6,525.30	-1,414.00	1,076.99	642.01	764.73	0.00	0.00	0.00
7,600.00	90.00	89.52	6,525.29	-1,413.99	1,077.82	742.01	864.13	0.00	0.00	0.00
7,700.00	90.00	89.52	6,525.29	-1,413.99	1,078.66	842.01	963.52	0.00	0.00	0.00
7,800.00	90.00	89.52	6,525.29	-1,413.99	1,079.50	942.00	1,062.92	0.00	0.00	0.00
7,900.00	90.00	89.52	6,525.29	-1,413.99	1,080.34	1,042.00	1,162.31	0.00	0.00	0.00
8,000.00	90.00	89.52	6,525.29	-1,413.99	1,081.18	1,142.00	1,261.71	0.00	0.00	0.00
8,100.00	90.00	89.52	6,525.29	-1,413.99	1,082.01	1,241.99	1,361.11	0.00	0.00	0.00
8,200.00	90.00	89.52	6,525.29	-1,413.99	1,082.85	1,341.99	1,460.50	0.00	0.00	0.00
8,300.00	90.00	89.52	6,525.29	-1,413.99	1,083.69	1,441.99	1,559.90	0.00	0.00	0.00
8,400.00	90.00	89.52	6,525.29	-1,413.99	1,084.53	1,541.98	1,659.29	0.00	0.00	0.00
8,500.00	90.00	89.52	6,525.29	-1,413.99	1,085.37	1,641.98	1,758.69	0.00	0.00	0.00
8,600.00	90.00	89.52	6,525.29	-1,413.99	1,086.21	1,741.98	1,858.08	0.00	0.00	0.00
8,700.00	90.00	89.52	6,525.29	-1,413.99	1,087.05	1,841.97	1,957.48	0.00	0.00	0.00
8,800.00	90.00	89.52	6,525.29	-1,413.99	1,087.89	1,941.97	2,056.87	0.00	0.00	0.00
8,900.00	90.00	89.52	6,525.29	-1,413.99	1,088.73	2,041.97	2,156.27	0.00	0.00	0.00
9,000.00	90.00	89.52	6,525.29	-1,413.99	1,089.57	2,141.96	2,255.67	0.00	0.00	0.00
9,100.00	90.00	89.52	6,525.29	-1,413.99	1,090.41	2,241.96	2,355.06	0.00	0.00	0.00
9,200.00	90.00	89.52	6,525.29	-1,413.99	1,091.25	2,341.95	2,454.46	0.00	0.00	0.00
9,300.00	90.00	89.52	6,525.28	-1,413.98	1,092.09	2,441.95	2,553.85	0.00	0.00	0.00
9,400.00	90.00	89.52	6,525.28	-1,413.98	1,092.93	2,541.95	2,653.25	0.00	0.00	0.00
9,500.00	90.00	89.52	6,525.28	-1,413.98	1,093.77	2,641.94	2,752.64	0.00	0.00	0.00
9,600.00	90.00	89.52	6,525.28	-1,413.98	1,094.61	2,741.94	2,852.04	0.00	0.00	0.00
9,700.00	90.00	89.52	6,525.28	-1,413.98	1,095.45	2,841.94	2,951.44	0.00	0.00	0.00
9,800.00	90.00	89.52	6,525.28	-1,413.98	1,096.29	2,941.93	3,050.83	0.00	0.00	0.00
9,900.00	90.00	89.52	6,525.28	-1,413.98	1,097.14	3,041.93	3,150.23	0.00	0.00	0.00
10,000.00	90.00	89.52	6,525.28	-1,413.98	1,097.98	3,141.93	3,249.62	0.00	0.00	0.00
10,100.00	90.00	89.52	6,525.28	-1,413.98	1,098.82	3,241.92	3,349.02	0.00	0.00	0.00
10,200.00	90.00	89.52	6,525.28	-1,413.98	1,099.66	3,341.92	3,448.41	0.00	0.00	0.00
10,300.00	90.00	89.52	6,525.28	-1,413.98	1,100.50	3,441.92	3,547.81	0.00	0.00	0.00
10,400.00	90.00	89.52	6,525.28	-1,413.98	1,101.34	3,541.91	3,647.21	0.00	0.00	0.00
10,500.00	90.00	89.52	6,525.28	-1,413.98	1,102.19	3,641.91	3,746.60	0.00	0.00	0.00
10,600.00	90.00	89.52	6,525.28	-1,413.98	1,103.03	3,741.90	3,846.00	0.00	0.00	0.00
10,700.00	90.00	89.52	6,525.28	-1,413.98	1,103.87	3,841.90	3,945.39	0.00	0.00	0.00
10,800.00	90.00	89.52	6,525.28	-1,413.98	1,104.71	3,941.90	4,044.79	0.00	0.00	0.00
10,900.00	90.00	89.52	6,525.28	-1,413.98	1,105.56	4,041.89	4,144.19	0.00	0.00	0.00
11,000.00	90.00	89.52	6,525.28	-1,413.98	1,106.40	4,141.89	4,243.58	0.00	0.00	0.00
11,100.00	90.00	89.52	6,525.28	-1,413.98	1,107.24	4,241.89	4,342.98	0.00	0.00	0.00
11,200.00	90.00	89.52	6,525.28	-1,413.98	1,108.09	4,341.88	4,442.37	0.00	0.00	0.00
11,300.00	90.00	89.52	6,525.28	-1,413.98	1,108.93	4,441.88	4,541.77	0.00	0.00	0.00
11,400.00	90.00	89.52	6,525.28	-1,413.98	1,109.77	4,541.88	4,641.17	0.00	0.00	0.00
11,500.00	90.00	89.52	6,525.28	-1,413.98	1,110.62	4,641.87	4,740.56	0.00	0.00	0.00
11,600.00	90.00	89.52	6,525.28	-1,413.98	1,111.46	4,741.87	4,839.96	0.00	0.00	0.00
11,700.00	90.00	89.52	6,525.28	-1,413.98	1,112.30	4,841.87	4,939.35	0.00	0.00	0.00
11,800.00	90.00	89.52	6,525.28	-1,413.98	1,113.15	4,941.86	5,038.75	0.00	0.00	0.00
11,900.00	90.00	89.52	6,525.28	-1,413.98	1,113.99	5,041.86	5,138.15	0.00	0.00	0.00
12,000.00	90.00	89.52	6,525.28	-1,413.98	1,114.84	5,141.86	5,237.54	0.00	0.00	0.00
12,100.00	90.00	89.52	6,525.28	-1,413.98	1,115.68	5,241.85	5,336.94	0.00	0.00	0.00
12,200.00	90.00	89.52	6,525.28	-1,413.98	1,116.53	5,341.85	5,436.34	0.00	0.00	0.00
12,300.00	90.00	89.52	6,525.28	-1,413.98	1,117.37	5,441.84	5,535.73	0.00	0.00	0.00
12,400.00	90.00	89.52	6,525.28	-1,413.98	1,118.22	5,541.84	5,635.13	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 9-59 8A-9-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5111.30usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5111.30usft (Original Well Elev)
Site:	SW NW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8A-9-1	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)
12,500.00	90.00	89.52	6,525.28	-1,413.98	1,119.06	5,641.84	5,734.52	0.00	0.00	0.00
12,600.00	90.00	89.52	6,525.28	-1,413.98	1,119.91	5,741.83	5,833.92	0.00	0.00	0.00
12,700.00	90.00	89.52	6,525.28	-1,413.98	1,120.75	5,841.83	5,933.32	0.00	0.00	0.00
12,800.00	90.00	89.52	6,525.28	-1,413.98	1,121.60	5,941.83	6,032.71	0.00	0.00	0.00
12,900.00	90.00	89.52	6,525.28	-1,413.98	1,122.44	6,041.82	6,132.11	0.00	0.00	0.00
13,000.00	90.00	89.52	6,525.28	-1,413.98	1,123.29	6,141.82	6,231.51	0.00	0.00	0.00
13,100.00	90.00	89.52	6,525.28	-1,413.98	1,124.14	6,241.82	6,330.90	0.00	0.00	0.00
13,200.00	90.00	89.52	6,525.28	-1,413.98	1,124.98	6,341.81	6,430.30	0.00	0.00	0.00
13,300.00	90.00	89.52	6,525.28	-1,413.98	1,125.83	6,441.81	6,529.69	0.00	0.00	0.00
13,400.00	90.00	89.51	6,525.28	-1,413.98	1,126.67	6,541.81	6,629.09	0.00	0.00	0.00
13,500.00	90.00	89.51	6,525.28	-1,413.98	1,127.52	6,641.80	6,728.49	0.00	0.00	0.00
13,600.00	90.00	89.51	6,525.28	-1,413.98	1,128.37	6,741.80	6,827.88	0.00	0.00	0.00
13,700.00	90.00	89.51	6,525.28	-1,413.98	1,129.21	6,841.79	6,927.28	0.00	0.00	0.00
13,800.00	90.00	89.51	6,525.28	-1,413.98	1,130.06	6,941.79	7,026.68	0.00	0.00	0.00
13,900.00	90.00	89.51	6,525.28	-1,413.98	1,130.91	7,041.79	7,126.07	0.00	0.00	0.00
14,000.00	90.00	89.51	6,525.29	-1,413.99	1,131.76	7,141.78	7,225.47	0.00	0.00	0.00
14,100.00	90.00	89.51	6,525.29	-1,413.99	1,132.60	7,241.78	7,324.87	0.00	0.00	0.00
14,200.00	90.00	89.51	6,525.29	-1,413.99	1,133.45	7,341.78	7,424.26	0.00	0.00	0.00
14,300.00	90.00	89.51	6,525.29	-1,413.99	1,134.30	7,441.77	7,523.66	0.00	0.00	0.00
14,400.00	90.00	89.51	6,525.29	-1,413.99	1,135.15	7,541.77	7,623.06	0.00	0.00	0.00
14,500.00	90.00	89.51	6,525.29	-1,413.99	1,136.00	7,641.77	7,722.45	0.00	0.00	0.00
14,600.00	90.00	89.51	6,525.29	-1,413.99	1,136.84	7,741.76	7,821.85	0.00	0.00	0.00
14,700.00	90.00	89.51	6,525.29	-1,413.99	1,137.69	7,841.76	7,921.24	0.00	0.00	0.00
14,800.00	90.00	89.51	6,525.29	-1,413.99	1,138.54	7,941.75	8,020.64	0.00	0.00	0.00
14,900.00	90.00	89.51	6,525.29	-1,413.99	1,139.39	8,041.75	8,120.04	0.00	0.00	0.00
15,000.00	90.00	89.51	6,525.29	-1,413.99	1,140.24	8,141.75	8,219.43	0.00	0.00	0.00
15,100.00	90.00	89.51	6,525.29	-1,413.99	1,141.09	8,241.74	8,318.83	0.00	0.00	0.00
15,200.00	90.00	89.51	6,525.29	-1,413.99	1,141.94	8,341.74	8,418.23	0.00	0.00	0.00
15,300.00	90.00	89.51	6,525.29	-1,413.99	1,142.79	8,441.74	8,517.62	0.00	0.00	0.00
15,400.00	90.00	89.51	6,525.29	-1,413.99	1,143.63	8,541.73	8,617.02	0.00	0.00	0.00
15,500.00	90.00	89.51	6,525.29	-1,413.99	1,144.48	8,641.73	8,716.42	0.00	0.00	0.00
15,600.00	90.00	89.51	6,525.29	-1,413.99	1,145.33	8,741.73	8,815.81	0.00	0.00	0.00
15,700.00	90.00	89.51	6,525.30	-1,414.00	1,146.18	8,841.72	8,915.21	0.00	0.00	0.00
15,800.00	90.00	89.51	6,525.30	-1,414.00	1,147.03	8,941.72	9,014.61	0.00	0.00	0.00
15,900.00	90.00	89.51	6,525.30	-1,414.00	1,147.88	9,041.72	9,114.01	0.00	0.00	0.00
16,000.00	90.00	89.51	6,525.30	-1,414.00	1,148.73	9,141.71	9,213.40	0.00	0.00	0.00
16,100.00	90.00	89.51	6,525.30	-1,414.00	1,149.59	9,241.71	9,312.80	0.00	0.00	0.00
16,200.00	90.00	89.51	6,525.30	-1,414.00	1,150.44	9,341.70	9,412.20	0.00	0.00	0.00
EPI: 602ft FNL & 600ft FEL of Sec 9										
16,256.20	90.00	89.51	6,525.30	-1,414.00	1,150.91	9,397.91	9,468.06	0.00	0.00	0.00
EOT TO 89.49° AZ										
16,256.95	90.00	89.49	6,525.30	-1,414.00	1,150.92	9,398.66	9,468.81	3.00	0.00	-3.00
16,300.00	90.00	89.49	6,525.30	-1,414.00	1,151.30	9,441.70	9,511.59	0.00	0.00	0.00
16,400.00	90.00	89.49	6,525.30	-1,414.00	1,152.19	9,541.70	9,611.00	0.00	0.00	0.00
16,500.00	90.00	89.49	6,525.30	-1,414.00	1,153.08	9,641.69	9,710.40	0.00	0.00	0.00
BHL: 600ft FNL & 300ft FEL of Sec 9										
16,556.19	90.00	89.49	6,525.30	-1,414.00	1,153.58	9,697.88	9,766.25	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 9-59 8A-9-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5111.30usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5111.30usft (Original Well Elev)
Site:	SW NW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8A-9-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
507.67	506.30	PIERRE SHALE (BASE OF FOX HI			
3,571.90	3,496.30	PARKMAN			
3,905.17	3,821.30	SUSSEX			
4,869.10	4,761.30	SHANNON			
6,247.53	6,120.30	SHARON SPRINGS SHALE			
6,316.97	6,185.30	NIOBRARA FORMATION			
6,327.97	6,195.30	NIOBRARA A CHALK			
6,457.33	6,305.30	NIOBRARA B CHALK			
6,552.85	6,375.30	NIOBRARA C CHALK			
6,748.47	6,480.30	FT HAYS			
6,869.86	6,515.30	CODELL			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 1672ft FNL & 475ft FWL of Sec 8
100.00	100.00	0.00	0.00	START NUDGE (2°/100ft BUR)
739.62	734.31	65.44	-27.81	EOB TO 12.79° INC
5,337.45	5,218.03	1,002.37	-426.03	END OF TANGENT
5,977.06	5,852.34	1,067.81	-453.84	EOD TO VERTICAL
6,077.06	5,952.34	1,067.81	-453.84	KOP (10°/100ft BUR)
6,977.07	6,525.30	1,072.61	119.10	BPI: 600ft FNL & 600ft FWL of Sec 8
16,256.20	6,525.30	1,150.91	9,397.91	EPI: 602ft FNL & 600ft FEL of Sec 9
16,256.95	6,525.30	1,150.92	9,398.66	EOT TO 89.49° AZ
16,556.19	6,525.30	1,153.58	9,697.88	BHL: 600ft FNL & 300ft FEL of Sec 9