

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

NW SW SEC. 3 T8N R61W 6th P.M.

SIEVERS 8-61 3A-2-11

ORIGINAL WELLBORE

23 August, 2017

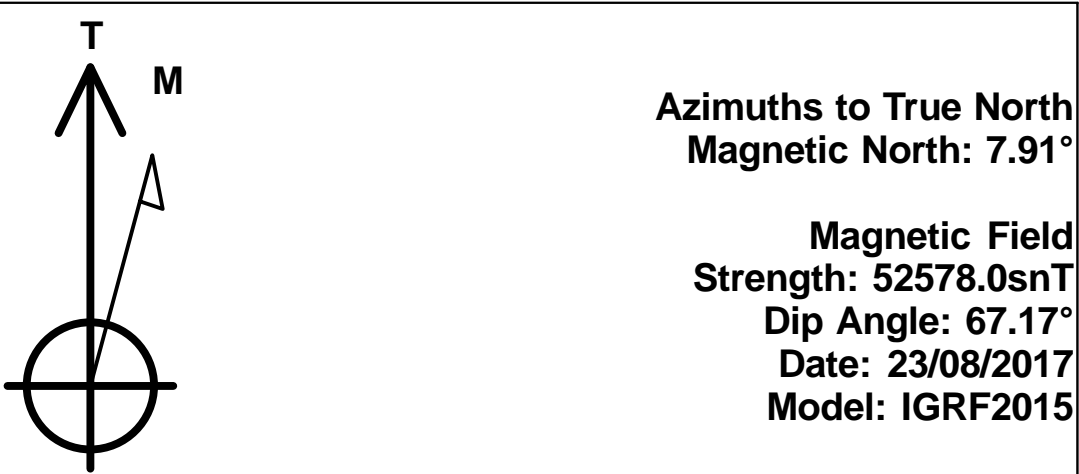
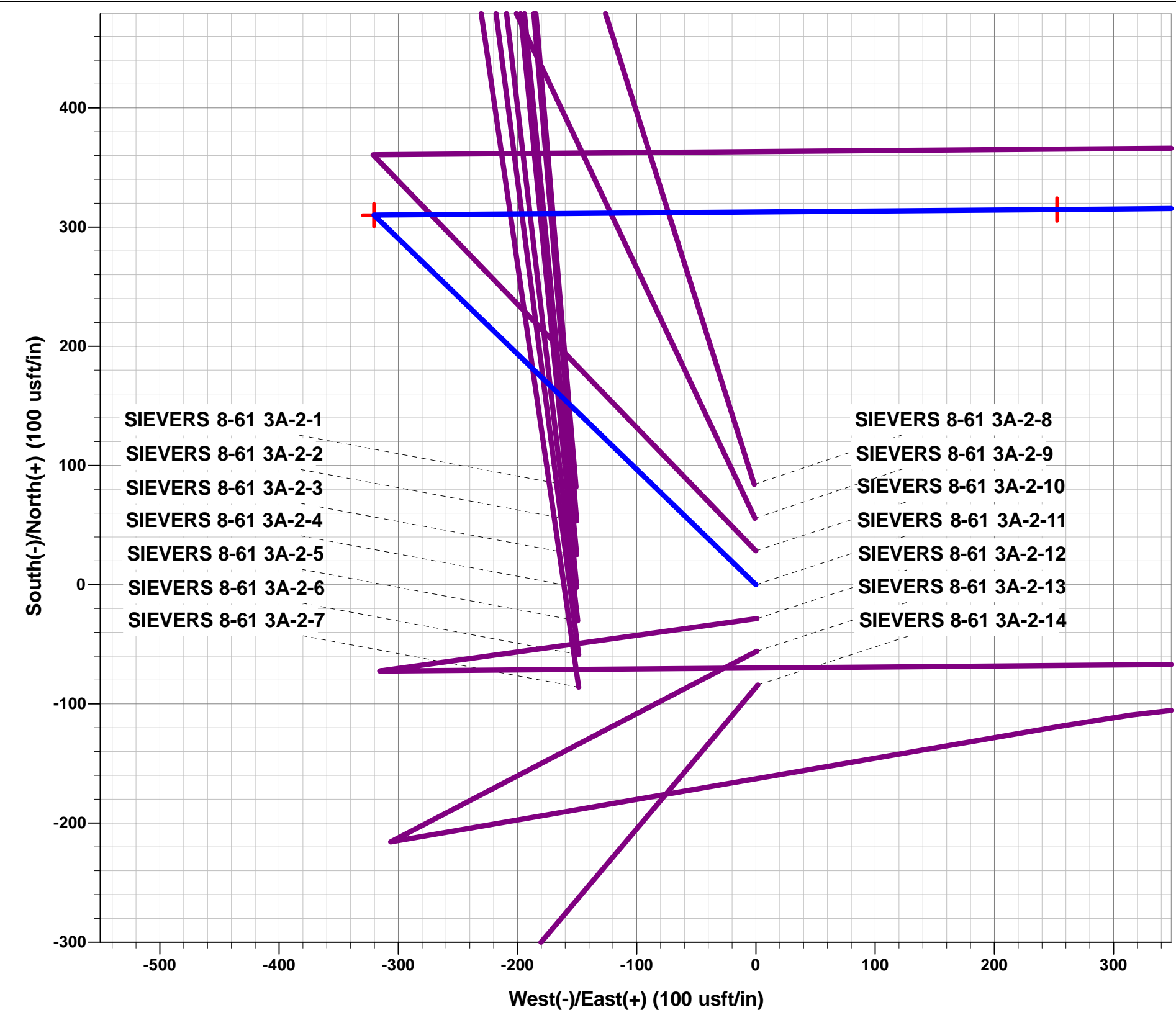
Plan: PROPOSAL #1



Project: WELD COUNTY, COLORADO (NAD 83)
Site: NW SW SEC. 3 T8N R61W 6th P.M.
Well: SIEVERS 8-61 3A-2-11
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

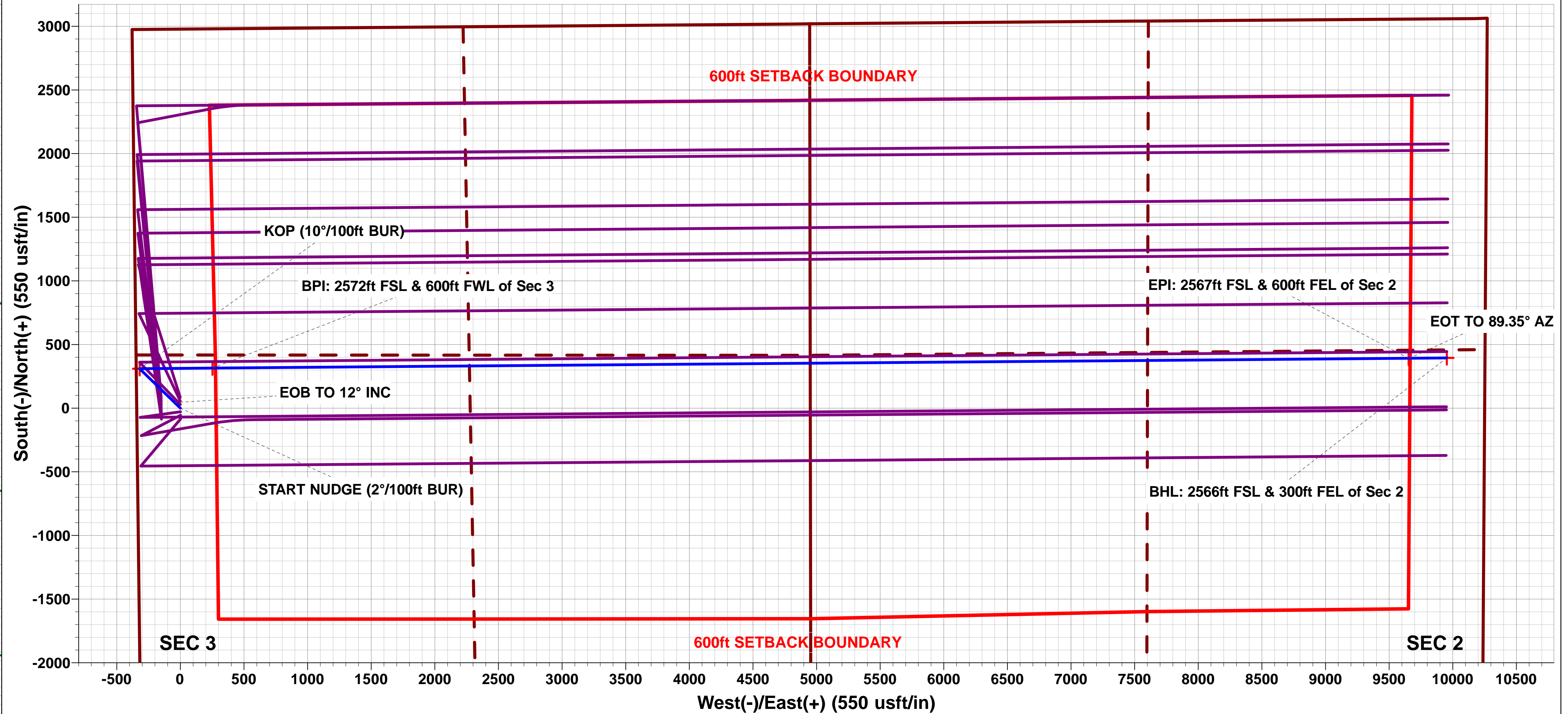
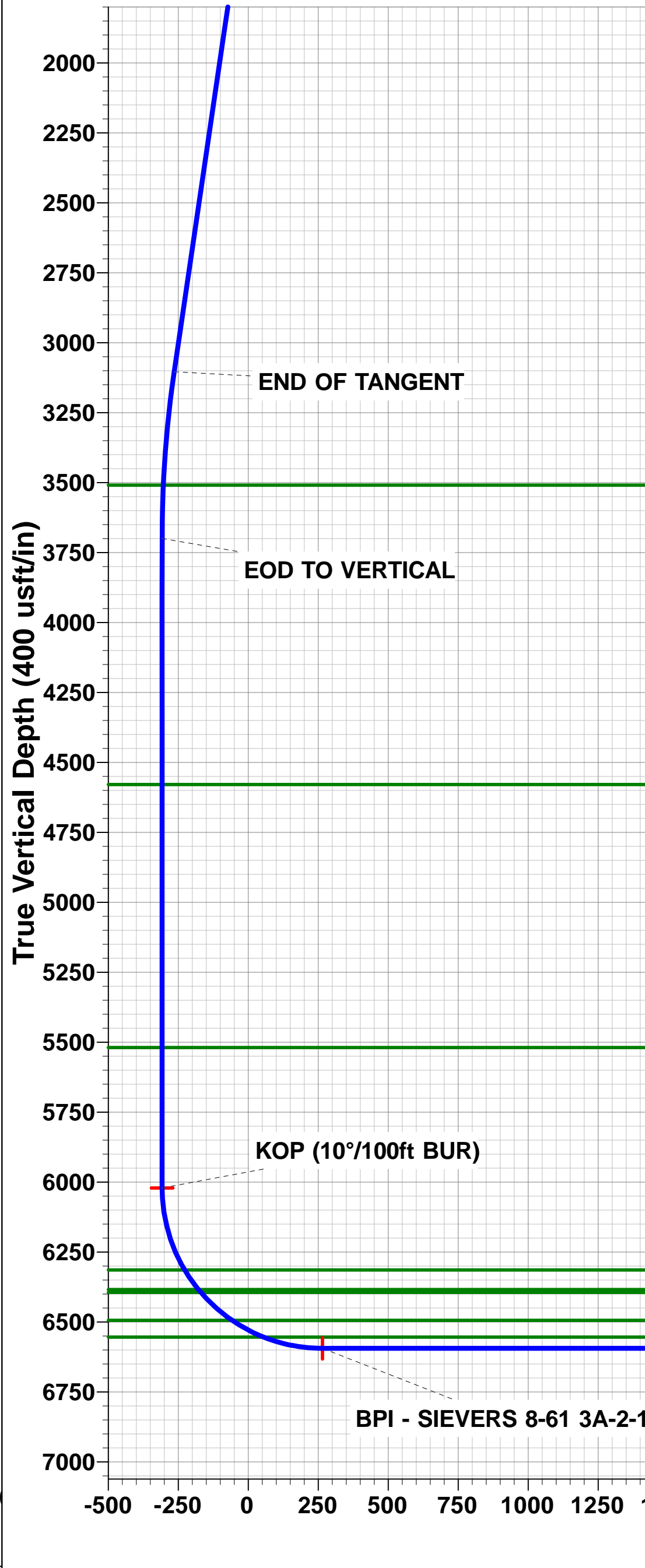
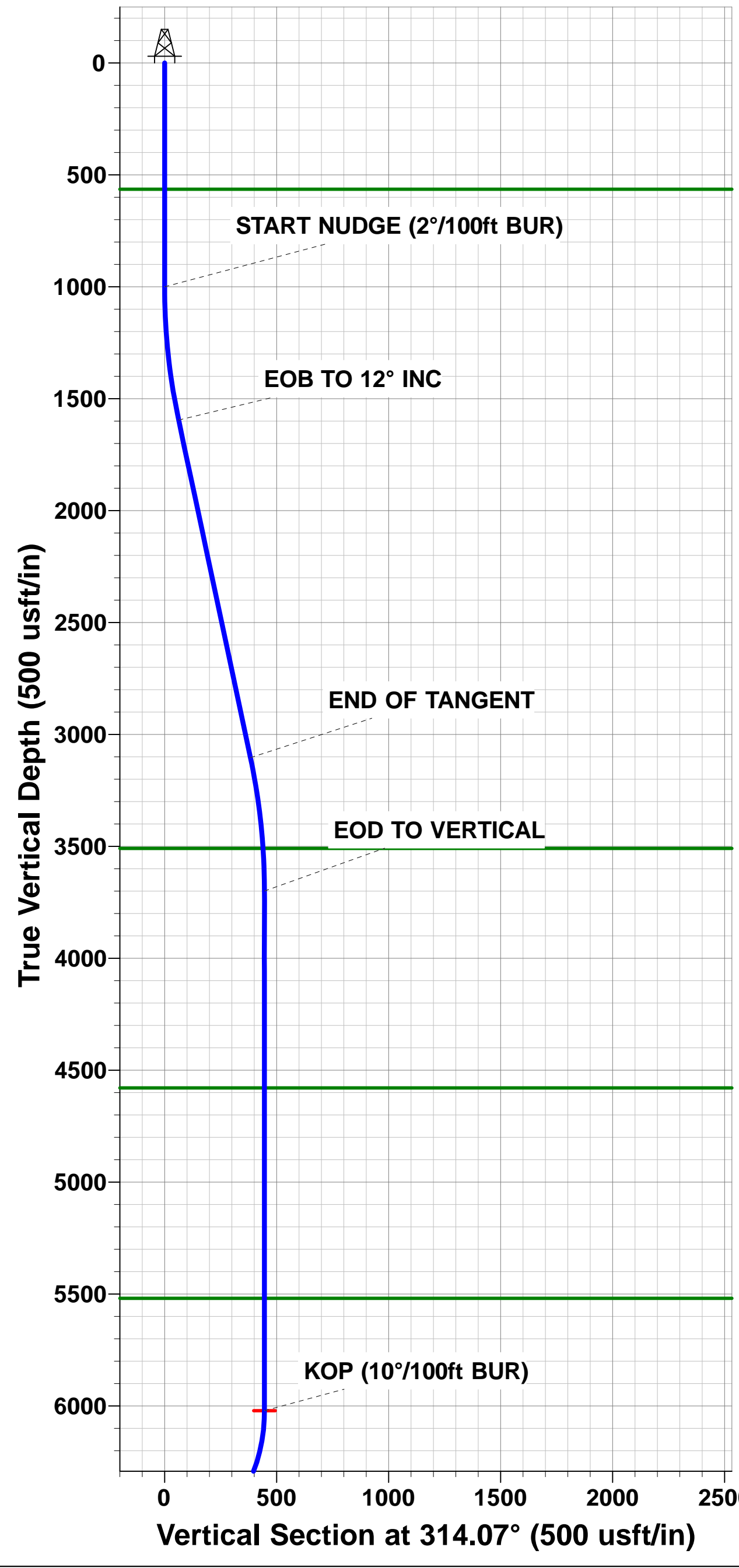
ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation	
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 2257ft FSL & 343ft FWL of Sec 3	
1000.0	1000.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1595.6	1600.0						62.6	EOB TO 12° INC	
3104.0	3142.1	12.00	314.07	266.6	-275.3	-264.5	383.2	END OF TANGENT	
3699.6	3742.1	0.00	0.00	310.1	-320.3	-307.8	445.8	EOD TO VERTICAL	
6021.1	6063.6	0.00	0.00	310.1	-320.3	-307.8	445.8	KOP (10°/100ft BUR)	
6594.1	6963.6	90.00	89.53	314.8	252.6	264.9	1018.8	BPI: 2572ft FSL & 600ft FWL of Sec 3	
6594.1	16364.2	90.00	89.54	391.4	9652.9	9660.8	10419.4	EPI: 2567ft FSL & 600ft FEL of Sec 2	
6594.1	16370.3	90.00	89.35	391.4	9659.1	9667.0	10425.5	EOT TO 89.35° AZ	
6594.1	16664.8	90.00	89.35	394.8	9953.5	9961.4	10720.0	BHL: 2566ft FSL & 300ft FEL of Sec 2	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - SIEVERS 8-61 3A-2-11	6021.1	310.1	-320.3	40.690701	-104.200694
BPI - SIEVERS 8-61 3A-2-11	6594.1	314.8	252.6	40.690714	-104.198628
EPI - SIEVERS 8-61 3A-2-11	6594.1	391.4	9652.9	40.690919	-104.164731
BHL - SIEVERS 8-61 3A-2-11	6594.1	394.8	9953.5	40.690928	-104.163647



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
564.1	564.1	PIERRE SH (BASE FOX HILLS)
3509.1	3551.4	PARKMAN
4579.1	4621.6	SUSSEX
5519.1	5561.6	SHANNON
6314.1	6371.1	SHARON SPRINGS SHALE
6384.1	6456.7	NIOBRARA FORMATION
6394.1	6469.7	NIOBRARA A CHALK
6494.1	6620.0	NIOBRARA B CHALK
6554.1	6748.2	NIOBRARA C CHALK

PROPOSED LOCAL COORDINATES:
SHL:2257ft FSL & 343ft FWL of Sec 3
BEGIN PROD INT: 2572ft FSL & 600ft FWL of Sec 3
END PROD INTERVAL: 2567ft FSL & 600ft FEL of Sec 2
BHL: 2566ft FSL & 300ft FEL of Sec 2



EOT TO 89.35° AZ
EPI - SIEVERS 8-61 3A-2-11
BHL - SIEVERS 8-61 3A-2-11

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SIEVERS 8-61 3A-2-11
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4969.1usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4969.1usft (Original Well Elev)
Site:	NW SW SEC. 3 T8N R61W 6th P.M.	North Reference:	True
Well:	SIEVERS 8-61 3A-2-11	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 SW SEC. 3 T8N R61W 6th P.M.		
Site Position:		Northing:	1,496,879.86 usft
From:	Lat/Long	Easting:	3,360,478.27 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.690075
		Longitude:	-104.200083
		Grid Convergence:	0.84 °

Well	SIEVERS 8-61 3A-2-11		
Well Position	+N-S	-82.0 usft	Northing:
	+E-W	150.9 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	23/08/2017	7.91	67.17	52,578

Design	PROPOSAL #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	6,594.1	0.0	0.0	87.73

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	-4,969.1	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	-3,969.1	0.0	0.0	0.00	0.00	0.00	0.00	
1,600.0	12.00	314.07	1,595.6	-3,373.5	43.5	-45.0	2.00	2.00	0.00	314.07	
3,142.1	12.00	314.07	3,104.0	-1,865.1	266.6	-275.3	0.00	0.00	0.00	0.00	
3,742.1	0.00	0.00	3,699.6	-1,269.5	310.1	-320.3	2.00	-2.00	0.00	180.00	
6,063.6	0.00	0.00	6,021.1	1,052.0	310.1	-320.3	0.00	0.00	0.00	0.00	KOP - SIEVERS 8-61
6,963.6	90.00	89.53	6,594.1	1,625.0	314.8	252.6	10.00	10.00	9.95	89.53	BPI - SIEVERS 8-6
16,364.2	90.00	89.54	6,594.1	1,625.0	391.4	9,652.9	0.00	0.00	0.00	28.09	EPI - SIEVERS 8-6
16,370.3	90.00	89.35	6,594.1	1,625.0	391.4	9,659.1	3.00	-0.07	-3.00	-91.33	
16,664.8	90.00	89.35	6,594.1	1,625.0	394.8	9,953.5	0.00	0.00	0.00	0.00	BHL - SIEVERS 8-6

Planning Report



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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4969.1usft (Original Well Elev)
Site:	NW SW SEC. 3 T8N R61W 6th P.M.	North Reference:	True
Well:	SIEVERS 8-61 3A-2-11	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: 2257ft FSL & 343ft FWL of Sec 3										
0.0	0.00	0.00	0.0	4,969.10	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,869.10	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,769.10	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,669.10	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,569.10	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,469.10	0.0	0.0	0.0	0.00	0.00	0.00
PIERRE SHALE (BASE FOX HILLS)										
564.1	0.00	0.00	564.1	4,405.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,369.10	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	4,269.10	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	4,169.10	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	4,069.10	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
1,000.0	0.00	0.00	1,000.0	3,969.10	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	2.00	314.07	1,100.0	3,869.12	1.2	-1.3	-1.2	2.00	2.00	0.00
1,200.0	4.00	314.07	1,199.8	3,769.26	4.9	-5.0	-4.8	2.00	2.00	0.00
1,300.0	6.00	314.07	1,299.5	3,669.65	10.9	-11.3	-10.8	2.00	2.00	0.00
1,400.0	8.00	314.07	1,398.7	3,570.40	19.4	-20.0	-19.2	2.00	2.00	0.00
1,500.0	10.00	314.07	1,497.5	3,471.63	30.3	-31.3	-30.0	2.00	2.00	0.00
EOB TO 12° INC										
1,600.0	12.00	314.07	1,595.6	3,373.48	43.5	-45.0	-43.2	2.00	2.00	0.00
1,700.0	12.00	314.07	1,693.4	3,275.66	58.0	-59.9	-57.6	0.00	0.00	0.00
1,800.0	12.00	314.07	1,791.3	3,177.85	72.5	-74.9	-71.9	0.00	0.00	0.00
1,900.0	12.00	314.07	1,889.1	3,080.03	86.9	-89.8	-86.3	0.00	0.00	0.00
2,000.0	12.00	314.07	1,986.9	2,982.22	101.4	-104.7	-100.6	0.00	0.00	0.00
2,100.0	12.00	314.07	2,084.7	2,884.40	115.9	-119.7	-115.0	0.00	0.00	0.00
2,200.0	12.00	314.07	2,182.5	2,786.59	130.3	-134.6	-129.3	0.00	0.00	0.00
2,300.0	12.00	314.07	2,280.3	2,688.77	144.8	-149.5	-143.7	0.00	0.00	0.00
2,400.0	12.00	314.07	2,378.1	2,590.96	159.2	-164.5	-158.0	0.00	0.00	0.00
2,500.0	12.00	314.07	2,476.0	2,493.14	173.7	-179.4	-172.4	0.00	0.00	0.00
2,600.0	12.00	314.07	2,573.8	2,395.33	188.2	-194.4	-186.7	0.00	0.00	0.00
2,700.0	12.00	314.07	2,671.6	2,297.51	202.6	-209.3	-201.1	0.00	0.00	0.00
2,800.0	12.00	314.07	2,769.4	2,199.70	217.1	-224.2	-215.4	0.00	0.00	0.00
2,900.0	12.00	314.07	2,867.2	2,101.88	231.5	-239.2	-229.8	0.00	0.00	0.00
3,000.0	12.00	314.07	2,965.0	2,004.07	246.0	-254.1	-244.2	0.00	0.00	0.00
3,100.0	12.00	314.07	3,062.8	1,906.26	260.5	-269.0	-258.5	0.00	0.00	0.00
END OF TANGENT										
3,142.1	12.00	314.07	3,104.0	1,865.11	266.6	-275.3	-264.5	0.00	0.00	0.00
3,200.0	10.84	314.07	3,160.8	1,808.32	274.5	-283.6	-272.5	2.00	-2.00	0.00
3,300.0	8.84	314.07	3,259.3	1,709.80	286.4	-295.8	-284.3	2.00	-2.00	0.00
3,400.0	6.84	314.07	3,358.4	1,610.74	295.9	-305.6	-293.7	2.00	-2.00	0.00
3,500.0	4.84	314.07	3,457.8	1,511.26	303.0	-313.0	-300.7	2.00	-2.00	0.00
PARKMAN										
3,551.4	3.81	314.07	3,509.1	1,460.00	305.7	-315.7	-303.4	2.00	-2.00	0.00
3,600.0	2.84	314.07	3,557.6	1,411.49	307.7	-317.8	-305.3	2.00	-2.00	0.00
3,700.0	0.84	314.07	3,657.5	1,311.55	309.9	-320.1	-307.5	2.00	-2.00	0.00
EOD TO VERTICAL										
3,742.1	0.00	0.00	3,699.6	1,269.49	310.1	-320.3	-307.8	2.00	-2.00	0.00
3,800.0	0.00	0.00	3,757.5	1,211.55	310.1	-320.3	-307.8	0.00	0.00	0.00
3,900.0	0.00	0.00	3,857.5	1,111.55	310.1	-320.3	-307.8	0.00	0.00	0.00
4,000.0	0.00	0.00	3,957.5	1,011.55	310.1	-320.3	-307.8	0.00	0.00	0.00
4,100.0	0.00	0.00	4,057.5	911.55	310.1	-320.3	-307.8	0.00	0.00	0.00

Planning Report



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Well:	SIEVERS 8-61 3A-2-11	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)
4,200.0	0.00	0.00	4,157.5	811.55	310.1	-320.3	-307.8	0.00	0.00	0.00
4,300.0	0.00	0.00	4,257.5	711.55	310.1	-320.3	-307.8	0.00	0.00	0.00
4,400.0	0.00	0.00	4,357.5	611.55	310.1	-320.3	-307.8	0.00	0.00	0.00
4,500.0	0.00	0.00	4,457.5	511.55	310.1	-320.3	-307.8	0.00	0.00	0.00
4,600.0	0.00	0.00	4,557.5	411.55	310.1	-320.3	-307.8	0.00	0.00	0.00
SUSSEX										
4,621.6	0.00	0.00	4,579.1	390.00	310.1	-320.3	-307.8	0.00	0.00	0.00
4,700.0	0.00	0.00	4,657.5	311.55	310.1	-320.3	-307.8	0.00	0.00	0.00
4,800.0	0.00	0.00	4,757.5	211.55	310.1	-320.3	-307.8	0.00	0.00	0.00
4,900.0	0.00	0.00	4,857.5	111.55	310.1	-320.3	-307.8	0.00	0.00	0.00
5,000.0	0.00	0.00	4,957.5	11.55	310.1	-320.3	-307.8	0.00	0.00	0.00
5,100.0	0.00	0.00	5,057.5	-88.45	310.1	-320.3	-307.8	0.00	0.00	0.00
5,200.0	0.00	0.00	5,157.5	-188.45	310.1	-320.3	-307.8	0.00	0.00	0.00
5,300.0	0.00	0.00	5,257.5	-288.45	310.1	-320.3	-307.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,357.5	-388.45	310.1	-320.3	-307.8	0.00	0.00	0.00
5,500.0	0.00	0.00	5,457.5	-488.45	310.1	-320.3	-307.8	0.00	0.00	0.00
SHANNON										
5,561.6	0.00	0.00	5,519.1	-550.00	310.1	-320.3	-307.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,557.5	-588.45	310.1	-320.3	-307.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,657.5	-688.45	310.1	-320.3	-307.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,757.5	-788.45	310.1	-320.3	-307.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,857.5	-888.45	310.1	-320.3	-307.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,957.5	-988.45	310.1	-320.3	-307.8	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,063.6	0.00	0.00	6,021.1	-1,052.00	310.1	-320.3	-307.8	0.00	0.00	0.00
6,100.0	3.64	89.53	6,057.5	-1,088.42	310.1	-319.1	-306.6	10.00	10.00	0.00
6,200.0	13.64	89.53	6,156.3	-1,187.16	310.2	-304.1	-291.6	10.00	10.00	0.00
6,300.0	23.64	89.53	6,250.9	-1,281.79	310.5	-272.2	-259.7	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,371.1	30.75	89.53	6,314.1	-1,345.00	310.8	-239.7	-227.2	10.00	10.00	0.00
6,400.0	33.64	89.53	6,338.5	-1,369.45	310.9	-224.3	-211.8	10.00	10.00	0.00
NIORARA FORMATION										
6,456.7	39.31	89.53	6,384.1	-1,415.00	311.2	-190.7	-178.2	10.00	10.00	0.00
NIORARA A CHALK										
6,469.7	40.61	89.53	6,394.1	-1,425.00	311.2	-182.3	-169.8	10.00	10.00	0.00
6,500.0	43.64	89.53	6,416.6	-1,447.45	311.4	-162.0	-149.5	10.00	10.00	0.00
6,600.0	53.64	89.53	6,482.5	-1,513.45	312.0	-87.0	-74.6	10.00	10.00	0.00
NIORARA B CHALK										
6,620.0	55.64	89.53	6,494.1	-1,525.00	312.1	-70.7	-58.3	10.00	10.00	0.00
6,700.0	63.64	89.53	6,534.5	-1,565.42	312.7	-1.7	10.7	10.00	10.00	0.00
NIORARA C CHALK										
6,748.2	68.46	89.53	6,554.1	-1,585.00	313.1	42.4	54.7	10.00	10.00	0.00
6,800.0	73.64	89.53	6,570.9	-1,601.80	313.5	91.3	103.6	10.00	10.00	0.00
6,900.0	83.64	89.53	6,590.6	-1,621.47	314.3	189.2	201.5	10.00	10.00	0.00
BPI: 2572ft FSL & 600ft FWL of Sec 3										
6,963.6	90.00	89.53	6,594.1	-1,625.00	314.8	252.6	264.9	10.00	10.00	0.00
7,000.0	90.00	89.53	6,594.1	-1,625.00	315.1	289.1	301.3	0.00	0.00	0.00
7,100.0	90.00	89.53	6,594.1	-1,625.01	315.9	389.1	401.3	0.00	0.00	0.00
7,200.0	90.00	89.53	6,594.1	-1,625.02	316.7	489.1	501.2	0.00	0.00	0.00
7,300.0	90.00	89.53	6,594.1	-1,625.02	317.5	589.1	601.2	0.00	0.00	0.00
7,400.0	90.00	89.53	6,594.1	-1,625.03	318.4	689.0	701.1	0.00	0.00	0.00
7,500.0	90.00	89.53	6,594.1	-1,625.04	319.2	789.0	801.1	0.00	0.00	0.00
7,600.0	90.00	89.53	6,594.1	-1,625.04	320.0	889.0	901.0	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SIEVERS 8-61 3A-2-11
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4969.1usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4969.1usft (Original Well Elev)
Site:	NW SW SEC. 3 T8N R61W 6th P.M.	North Reference:	True
Well:	SIEVERS 8-61 3A-2-11	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)
7,700.0	90.00	89.53	6,594.2	-1,625.05	320.8	989.0	1,001.0	0.00	0.00	0.00
7,800.0	90.00	89.53	6,594.2	-1,625.06	321.6	1,089.0	1,100.9	0.00	0.00	0.00
7,900.0	90.00	89.53	6,594.2	-1,625.06	322.5	1,189.0	1,200.9	0.00	0.00	0.00
8,000.0	90.00	89.53	6,594.2	-1,625.07	323.3	1,289.0	1,300.8	0.00	0.00	0.00
8,100.0	90.00	89.53	6,594.2	-1,625.07	324.1	1,389.0	1,400.8	0.00	0.00	0.00
8,200.0	90.00	89.53	6,594.2	-1,625.08	324.9	1,489.0	1,500.7	0.00	0.00	0.00
8,300.0	90.00	89.53	6,594.2	-1,625.08	325.7	1,589.0	1,600.7	0.00	0.00	0.00
8,400.0	90.00	89.53	6,594.2	-1,625.09	326.5	1,689.0	1,700.6	0.00	0.00	0.00
8,500.0	90.00	89.53	6,594.2	-1,625.10	327.4	1,789.0	1,800.6	0.00	0.00	0.00
8,600.0	90.00	89.53	6,594.2	-1,625.10	328.2	1,889.0	1,900.5	0.00	0.00	0.00
8,700.0	90.00	89.53	6,594.2	-1,625.10	329.0	1,989.0	2,000.5	0.00	0.00	0.00
8,800.0	90.00	89.53	6,594.2	-1,625.11	329.8	2,089.0	2,100.4	0.00	0.00	0.00
8,900.0	90.00	89.53	6,594.2	-1,625.11	330.6	2,189.0	2,200.4	0.00	0.00	0.00
9,000.0	90.00	89.53	6,594.2	-1,625.12	331.4	2,289.0	2,300.3	0.00	0.00	0.00
9,100.0	90.00	89.53	6,594.2	-1,625.12	332.3	2,389.0	2,400.3	0.00	0.00	0.00
9,200.0	90.00	89.53	6,594.2	-1,625.13	333.1	2,489.0	2,500.2	0.00	0.00	0.00
9,300.0	90.00	89.53	6,594.2	-1,625.13	333.9	2,589.0	2,600.2	0.00	0.00	0.00
9,400.0	90.00	89.53	6,594.2	-1,625.13	334.7	2,689.0	2,700.1	0.00	0.00	0.00
9,500.0	90.00	89.53	6,594.2	-1,625.14	335.5	2,789.0	2,800.1	0.00	0.00	0.00
9,600.0	90.00	89.53	6,594.2	-1,625.14	336.3	2,889.0	2,900.0	0.00	0.00	0.00
9,700.0	90.00	89.53	6,594.2	-1,625.14	337.2	2,989.0	3,000.0	0.00	0.00	0.00
9,800.0	90.00	89.53	6,594.2	-1,625.15	338.0	3,089.0	3,099.9	0.00	0.00	0.00
9,900.0	90.00	89.53	6,594.2	-1,625.15	338.8	3,189.0	3,199.9	0.00	0.00	0.00
10,000.0	90.00	89.53	6,594.3	-1,625.15	339.6	3,289.0	3,299.8	0.00	0.00	0.00
10,100.0	90.00	89.53	6,594.3	-1,625.15	340.4	3,389.0	3,399.8	0.00	0.00	0.00
10,200.0	90.00	89.53	6,594.3	-1,625.16	341.2	3,489.0	3,499.7	0.00	0.00	0.00
10,300.0	90.00	89.53	6,594.3	-1,625.16	342.1	3,589.0	3,599.7	0.00	0.00	0.00
10,400.0	90.00	89.53	6,594.3	-1,625.16	342.9	3,688.9	3,699.6	0.00	0.00	0.00
10,500.0	90.00	89.53	6,594.3	-1,625.16	343.7	3,788.9	3,799.6	0.00	0.00	0.00
10,600.0	90.00	89.53	6,594.3	-1,625.17	344.5	3,888.9	3,899.5	0.00	0.00	0.00
10,700.0	90.00	89.53	6,594.3	-1,625.17	345.3	3,988.9	3,999.5	0.00	0.00	0.00
10,800.0	90.00	89.53	6,594.3	-1,625.17	346.1	4,088.9	4,099.4	0.00	0.00	0.00
10,900.0	90.00	89.53	6,594.3	-1,625.17	346.9	4,188.9	4,199.4	0.00	0.00	0.00
11,000.0	90.00	89.53	6,594.3	-1,625.17	347.8	4,288.9	4,299.3	0.00	0.00	0.00
11,100.0	90.00	89.53	6,594.3	-1,625.17	348.6	4,388.9	4,399.3	0.00	0.00	0.00
11,200.0	90.00	89.53	6,594.3	-1,625.17	349.4	4,488.9	4,499.2	0.00	0.00	0.00
11,300.0	90.00	89.53	6,594.3	-1,625.17	350.2	4,588.9	4,599.2	0.00	0.00	0.00
11,400.0	90.00	89.53	6,594.3	-1,625.17	351.0	4,688.9	4,699.1	0.00	0.00	0.00
11,500.0	90.00	89.53	6,594.3	-1,625.17	351.8	4,788.9	4,799.1	0.00	0.00	0.00
11,600.0	90.00	89.53	6,594.3	-1,625.17	352.7	4,888.9	4,899.0	0.00	0.00	0.00
11,700.0	90.00	89.53	6,594.3	-1,625.17	353.5	4,988.9	4,999.0	0.00	0.00	0.00
11,800.0	90.00	89.53	6,594.3	-1,625.17	354.3	5,088.9	5,098.9	0.00	0.00	0.00
11,900.0	90.00	89.53	6,594.3	-1,625.17	355.1	5,188.9	5,198.9	0.00	0.00	0.00
12,000.0	90.00	89.53	6,594.3	-1,625.17	355.9	5,288.9	5,298.8	0.00	0.00	0.00
12,100.0	90.00	89.53	6,594.3	-1,625.17	356.7	5,388.9	5,398.8	0.00	0.00	0.00
12,200.0	90.00	89.53	6,594.3	-1,625.17	357.5	5,488.9	5,498.7	0.00	0.00	0.00
12,300.0	90.00	89.53	6,594.3	-1,625.17	358.4	5,588.9	5,598.7	0.00	0.00	0.00
12,400.0	90.00	89.53	6,594.3	-1,625.17	359.2	5,688.9	5,698.6	0.00	0.00	0.00
12,500.0	90.00	89.53	6,594.3	-1,625.17	360.0	5,788.9	5,798.6	0.00	0.00	0.00
12,600.0	90.00	89.53	6,594.3	-1,625.17	360.8	5,888.9	5,898.5	0.00	0.00	0.00
12,700.0	90.00	89.53	6,594.3	-1,625.17	361.6	5,988.9	5,998.5	0.00	0.00	0.00
12,800.0	90.00	89.53	6,594.3	-1,625.16	362.4	6,088.9	6,098.4	0.00	0.00	0.00
12,900.0	90.00	89.53	6,594.3	-1,625.16	363.2	6,188.9	6,198.4	0.00	0.00	0.00
13,000.0	90.00	89.53	6,594.3	-1,625.16	364.1	6,288.9	6,298.3	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SIEVERS 8-61 3A-2-11
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4969.1usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4969.1usft (Original Well Elev)
Site:	NW SW SEC. 3 T8N R61W 6th P.M.	North Reference:	True
Well:	SIEVERS 8-61 3A-2-11	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)
13,100.0	90.00	89.53	6,594.3	-1,625.16	364.9	6,388.9	6,398.3	0.00	0.00	0.00
13,200.0	90.00	89.53	6,594.3	-1,625.16	365.7	6,488.9	6,498.2	0.00	0.00	0.00
13,300.0	90.00	89.53	6,594.3	-1,625.15	366.5	6,588.9	6,598.2	0.00	0.00	0.00
13,400.0	90.00	89.53	6,594.3	-1,625.15	367.3	6,688.8	6,698.2	0.00	0.00	0.00
13,500.0	90.00	89.53	6,594.2	-1,625.15	368.1	6,788.8	6,798.1	0.00	0.00	0.00
13,600.0	90.00	89.53	6,594.2	-1,625.14	368.9	6,888.8	6,898.1	0.00	0.00	0.00
13,700.0	90.00	89.53	6,594.2	-1,625.14	369.7	6,988.8	6,998.0	0.00	0.00	0.00
13,800.0	90.00	89.53	6,594.2	-1,625.14	370.6	7,088.8	7,098.0	0.00	0.00	0.00
13,900.0	90.00	89.53	6,594.2	-1,625.13	371.4	7,188.8	7,197.9	0.00	0.00	0.00
14,000.0	90.00	89.53	6,594.2	-1,625.13	372.2	7,288.8	7,297.9	0.00	0.00	0.00
14,100.0	90.00	89.53	6,594.2	-1,625.13	373.0	7,388.8	7,397.8	0.00	0.00	0.00
14,200.0	90.00	89.53	6,594.2	-1,625.12	373.8	7,488.8	7,497.8	0.00	0.00	0.00
14,300.0	90.00	89.53	6,594.2	-1,625.12	374.6	7,588.8	7,597.7	0.00	0.00	0.00
14,400.0	90.00	89.53	6,594.2	-1,625.12	375.4	7,688.8	7,697.7	0.00	0.00	0.00
14,500.0	90.00	89.53	6,594.2	-1,625.11	376.2	7,788.8	7,797.6	0.00	0.00	0.00
14,600.0	90.00	89.53	6,594.2	-1,625.11	377.1	7,888.8	7,897.6	0.00	0.00	0.00
14,700.0	90.00	89.53	6,594.2	-1,625.10	377.9	7,988.8	7,997.5	0.00	0.00	0.00
14,800.0	90.00	89.53	6,594.2	-1,625.10	378.7	8,088.8	8,097.5	0.00	0.00	0.00
14,900.0	90.00	89.53	6,594.2	-1,625.09	379.5	8,188.8	8,197.4	0.00	0.00	0.00
15,000.0	90.00	89.53	6,594.2	-1,625.09	380.3	8,288.8	8,297.4	0.00	0.00	0.00
15,100.0	90.00	89.53	6,594.2	-1,625.08	381.1	8,388.8	8,397.3	0.00	0.00	0.00
15,200.0	90.00	89.53	6,594.2	-1,625.08	381.9	8,488.8	8,497.3	0.00	0.00	0.00
15,300.0	90.00	89.53	6,594.2	-1,625.07	382.7	8,588.8	8,597.2	0.00	0.00	0.00
15,400.0	90.00	89.54	6,594.2	-1,625.06	383.6	8,688.8	8,697.2	0.00	0.00	0.00
15,500.0	90.00	89.54	6,594.2	-1,625.06	384.4	8,788.8	8,797.1	0.00	0.00	0.00
15,600.0	90.00	89.54	6,594.2	-1,625.05	385.2	8,888.8	8,897.1	0.00	0.00	0.00
15,700.0	90.00	89.54	6,594.1	-1,625.05	386.0	8,988.8	8,997.0	0.00	0.00	0.00
15,800.0	90.00	89.54	6,594.1	-1,625.04	386.8	9,088.8	9,097.0	0.00	0.00	0.00
15,900.0	90.00	89.54	6,594.1	-1,625.03	387.6	9,188.8	9,196.9	0.00	0.00	0.00
16,000.0	90.00	89.54	6,594.1	-1,625.03	388.4	9,288.8	9,296.9	0.00	0.00	0.00
16,100.0	90.00	89.54	6,594.1	-1,625.02	389.2	9,388.8	9,396.8	0.00	0.00	0.00
16,200.0	90.00	89.54	6,594.1	-1,625.01	390.0	9,488.8	9,496.8	0.00	0.00	0.00
16,300.0	90.00	89.54	6,594.1	-1,625.00	390.9	9,588.8	9,596.7	0.00	0.00	0.00
EPI: 2567ft FSL & 600ft FEL of Sec 2										
16,364.2	90.00	89.54	6,594.1	-1,625.00	391.4	9,652.9	9,660.8	0.00	0.00	0.00
EOT TO 89.35° AZ										
16,370.3	90.00	89.35	6,594.1	-1,625.00	391.4	9,659.1	9,667.0	3.00	-0.07	-3.00
16,400.0	90.00	89.35	6,594.1	-1,625.00	391.8	9,688.7	9,696.7	0.00	0.00	0.00
16,500.0	90.00	89.35	6,594.1	-1,625.00	392.9	9,788.7	9,796.6	0.00	0.00	0.00
16,600.0	90.00	89.35	6,594.1	-1,625.00	394.0	9,888.7	9,896.6	0.00	0.00	0.00
BHL: 2566ft FSL & 300ft FEL of Sec 2										
16,664.8	90.00	89.35	6,594.1	-1,625.00	394.8	9,953.5	9,961.4	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SIEVERS 8-61 3A-2-11
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4969.1usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4969.1usft (Original Well Elev)
Site:	NW SW SEC. 3 T8N R61W 6th P.M.	North Reference:	True
Well:	SIEVERS 8-61 3A-2-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
564.1	564.1	PIERRE SHALE (BASE FOX HILLS			
3,551.4	3,509.1	PARKMAN			
4,621.6	4,579.1	SUSSEX			
5,561.6	5,519.1	SHANNON			
6,371.1	6,314.1	SHARON SPRINGS SHALE			
6,456.7	6,384.1	NIOBRARA FORMATION			
6,469.7	6,394.1	NIOBRARA A CHALK			
6,620.0	6,494.1	NIOBRARA B CHALK			
6,748.2	6,554.1	NIOBRARA C CHALK			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 2257ft FSL & 343ft FWL of Sec 3
1,000.0	1,000.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,600.0	1,595.6	43.5	-45.0	EOB TO 12° INC
3,142.1	3,104.0	266.6	-275.3	END OF TANGENT
3,742.1	3,699.6	310.1	-320.3	EOD TO VERTICAL
6,063.6	6,021.1	310.1	-320.3	KOP (10°/100ft BUR)
6,963.6	6,594.1	314.8	252.6	BPI: 2572ft FSL & 600ft FWL of Sec 3
16,364.2	6,594.1	391.4	9,652.9	EPI: 2567ft FSL & 600ft FEL of Sec 2
16,370.3	6,594.1	391.4	9,659.1	EOT TO 89.35° AZ
16,664.8	6,594.1	394.8	9,953.5	BHL: 2566ft FSL & 300ft FEL of Sec 2