

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

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

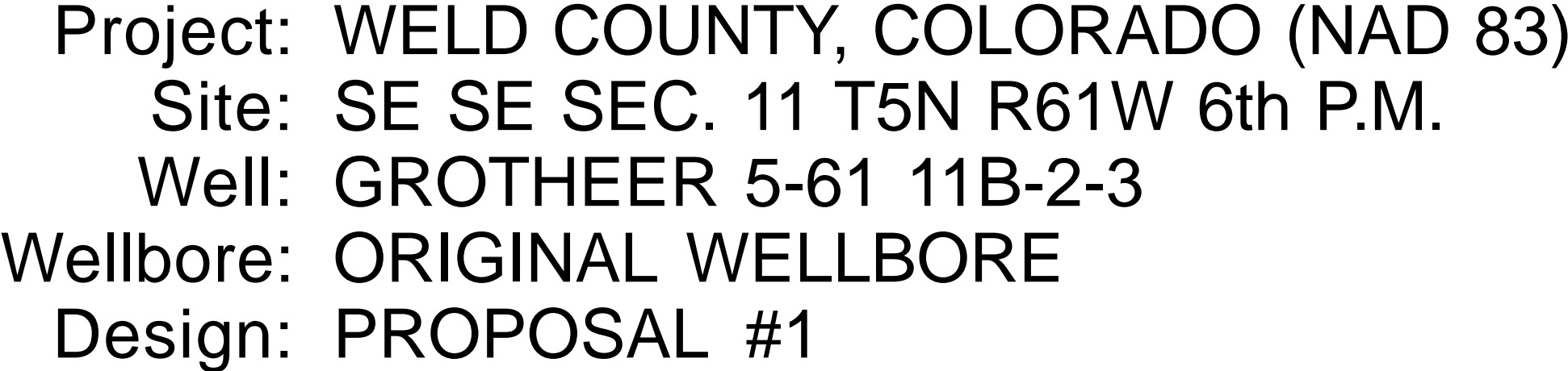
GROTHER 5-61 11B-2-3

ORIGINAL WELLBORE

26 February, 2019

Plan: PROPOSAL #1





The figure consists of three plots related to the wellbore trajectory of Grotheer 5-61 11B-2-3.

Top Left Plot: True Vertical Depth (500 usft/in) vs. Vertical Section at 191.25° (500 usft/in). The plot shows the wellbore trajectory starting at the surface (0 depth) and curving downwards. Key points marked include "START NUDGE (2°/100ft BUR)" at approximately 250 ft depth, "EOB TO 12° INC" at approximately 750 ft depth, "END OF TANGENT" at approximately 3000 ft depth, "EOD TO VERTICAL" at approximately 3500 ft depth, and "KOP (10°/100ft BUR)" at approximately 5500 ft depth.

Top Right Plot: South(-)/North(+) (100 usft/in) vs. West(-)/East(+) (100 usft/in). This plot shows the wellbore trajectory in the horizontal plane. The trajectory starts at the surface (0,0) and curves downwards. Key points marked include "GROTHEER 5-61 11B-14-23-2", "GROTHEER 5-61 11B-14-23-3", "GROTHEER 5-61 11B-14-23-4", "GROTHEER 5-61 11B-14-23-5", "GROTHEER 5-61 11B-2-3", "GROTHEER 5-61 11B-2-4", "GROTHEER 5-61 11B-2-5", "GROTHEER 5-61 11B-2-2", and "GROTHEER 5-61 11B-2-1".

Bottom Right Plot: True Vertical Depth (500 usft/in) vs. Vertical Section at 191.25° (500 usft/in). This plot shows the wellbore trajectory in the vertical plane. The trajectory starts at the surface (0 depth) and curves downwards. Key points marked include "KOP (10°/100ft BUR)" at approximately 5500 ft depth, "EOT TO 0.31° AZ" at approximately 6000 ft depth, and "BPI *NEW* - GROTHEER 5-61 11B-2-3" at approximately 6500 ft depth.

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-2-3
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB 25' @ 4715.10usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4715.10usft (Original Well Elev)
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-2-3	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	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-2-3					
Well Position	+N/-S	-149.75 usft	Northing:	1,394,922.21 usft	Latitude:	40.409843
	+E/-W	57.37 usft	Easting:	3,370,260.06 usft	Longitude:	-104.170327
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,690.10 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	26/02/2019	7.71	66.91	52,266

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 (°)
	0.00	0.00	0.00	358.62

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
0.00	0.00	0.00	0.00	-4,715.10	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	-4,415.10	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	12.00	191.25	895.62	-3,819.48	-61.40	-12.21	2.00	2.00	0.00	191.25	
3,049.62	12.00	191.25	2,998.27	-1,716.83	-499.74	-99.42	0.00	0.00	0.00	0.00	
3,649.62	0.00	0.00	3,593.89	-1,121.21	-561.14	-111.63	2.00	-2.00	0.00	180.00	
5,684.87	0.00	0.00	5,629.14	914.04	-561.14	-111.63	0.00	0.00	0.00	0.00	KOP - GROTHEER
6,584.87	90.00	347.15	6,202.10	1,487.00	-2.53	-239.06	10.00	10.00	-1.43	347.15	BPI *NEW* - GROT
7,023.56	90.00	0.31	6,202.10	1,487.00	432.58	-286.87	3.00	0.00	3.00	90.00	
16,301.18	90.00	0.31	6,202.10	1,487.00	9,710.06	-236.62	0.00	0.00	0.00	0.00	EPI - GROTHEER !
16,306.31	90.00	0.16	6,202.10	1,487.00	9,715.19	-236.59	3.00	0.00	-3.00	-90.00	
16,401.00	90.00	0.16	6,202.10	1,487.00	9,809.88	-236.34	0.00	0.00	0.00	0.00	BHL - GROTHEER

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Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-2-3	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: 460ft FSL & 1210ft FEL of Sec 11										
0.00	0.00	0.00	0.00	4,715.10	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,615.10	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,515.10	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
300.00	0.00	0.00	300.00	4,415.10	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	191.25	399.98	4,315.12	-1.71	-0.34	-1.70	2.00	2.00	0.00
500.00	4.00	191.25	499.84	4,215.26	-6.84	-1.36	-6.81	2.00	2.00	0.00
600.00	6.00	191.25	599.45	4,115.65	-15.39	-3.06	-15.31	2.00	2.00	0.00
700.00	8.00	191.25	698.70	4,016.40	-27.34	-5.44	-27.21	2.00	2.00	0.00
PIERRE SHALE (BASE FOX HILLS)										
701.41	8.03	191.25	700.10	4,015.00	-27.54	-5.48	-27.40	2.00	2.00	0.00
800.00	10.00	191.25	797.47	3,917.63	-42.69	-8.49	-42.47	2.00	2.00	0.00
EOB TO 12° INC										
900.00	12.00	191.25	895.62	3,819.48	-61.40	-12.21	-61.09	2.00	2.00	0.00
1,000.00	12.00	191.25	993.44	3,721.66	-81.79	-16.27	-81.38	0.00	0.00	0.00
1,100.00	12.00	191.25	1,091.25	3,623.85	-102.18	-20.33	-101.66	0.00	0.00	0.00
1,200.00	12.00	191.25	1,189.07	3,526.03	-122.57	-24.38	-121.95	0.00	0.00	0.00
1,300.00	12.00	191.25	1,286.88	3,428.22	-142.97	-28.44	-142.24	0.00	0.00	0.00
1,400.00	12.00	191.25	1,384.70	3,330.40	-163.36	-32.50	-162.53	0.00	0.00	0.00
1,500.00	12.00	191.25	1,482.51	3,232.59	-183.75	-36.55	-182.82	0.00	0.00	0.00
1,600.00	12.00	191.25	1,580.33	3,134.77	-204.14	-40.61	-203.10	0.00	0.00	0.00
1,700.00	12.00	191.25	1,678.14	3,036.96	-224.53	-44.67	-223.39	0.00	0.00	0.00
1,800.00	12.00	191.25	1,775.96	2,939.14	-244.92	-48.72	-243.68	0.00	0.00	0.00
1,900.00	12.00	191.25	1,873.77	2,841.33	-265.32	-52.78	-263.97	0.00	0.00	0.00
2,000.00	12.00	191.25	1,971.59	2,743.51	-285.71	-56.84	-284.26	0.00	0.00	0.00
2,100.00	12.00	191.25	2,069.40	2,645.70	-306.10	-60.89	-304.54	0.00	0.00	0.00
2,200.00	12.00	191.25	2,167.22	2,547.88	-326.49	-64.95	-324.83	0.00	0.00	0.00
2,300.00	12.00	191.25	2,265.03	2,450.07	-346.88	-69.01	-345.12	0.00	0.00	0.00
2,400.00	12.00	191.25	2,362.84	2,352.26	-367.27	-73.06	-365.41	0.00	0.00	0.00
2,500.00	12.00	191.25	2,460.66	2,254.44	-387.66	-77.12	-385.69	0.00	0.00	0.00
2,600.00	12.00	191.25	2,558.47	2,156.63	-408.06	-81.18	-405.98	0.00	0.00	0.00
2,700.00	12.00	191.25	2,656.29	2,058.81	-428.45	-85.23	-426.27	0.00	0.00	0.00
2,800.00	12.00	191.25	2,754.10	1,961.00	-448.84	-89.29	-446.56	0.00	0.00	0.00
2,900.00	12.00	191.25	2,851.92	1,863.18	-469.23	-93.35	-466.85	0.00	0.00	0.00
3,000.00	12.00	191.25	2,949.73	1,765.37	-489.62	-97.40	-487.13	0.00	0.00	0.00
END OF TANGENT										
3,049.62	12.00	191.25	2,998.27	1,716.83	-499.74	-99.42	-497.20	0.00	0.00	0.00
3,100.00	10.99	191.25	3,047.64	1,667.46	-509.59	-101.37	-507.00	2.00	-2.00	0.00
3,200.00	8.99	191.25	3,146.12	1,568.98	-526.61	-104.76	-523.93	2.00	-2.00	0.00
3,300.00	6.99	191.25	3,245.14	1,469.96	-540.24	-107.47	-537.50	2.00	-2.00	0.00
PARKMAN										
3,360.34	5.79	191.25	3,305.10	1,410.00	-546.83	-108.78	-544.05	2.00	-2.00	0.00
3,400.00	4.99	191.25	3,344.59	1,370.51	-550.48	-109.51	-547.68	2.00	-2.00	0.00
3,500.00	2.99	191.25	3,444.34	1,270.76	-557.31	-110.87	-554.48	2.00	-2.00	0.00
3,600.00	0.99	191.25	3,544.27	1,170.83	-560.72	-111.55	-557.87	2.00	-2.00	0.00
EOD TO VERTICAL										
3,649.62	0.00	0.00	3,593.89	1,121.21	-561.14	-111.63	-558.29	2.00	-2.00	0.00
3,700.00	0.00	0.00	3,644.27	1,070.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
3,800.00	0.00	0.00	3,744.27	970.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
3,900.00	0.00	0.00	3,844.27	870.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
4,000.00	0.00	0.00	3,944.27	770.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
4,100.00	0.00	0.00	4,044.27	670.83	-561.14	-111.63	-558.29	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)
4,200.00	0.00	0.00	4,144.27	570.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
4,300.00	0.00	0.00	4,244.27	470.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
4,400.00	0.00	0.00	4,344.27	370.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
4,500.00	0.00	0.00	4,444.27	270.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
SUSSEX										
4,520.83	0.00	0.00	4,465.10	250.00	-561.14	-111.63	-558.29	0.00	0.00	0.00
4,600.00	0.00	0.00	4,544.27	170.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
4,700.00	0.00	0.00	4,644.27	70.83	-561.14	-111.63	-558.29	0.00	0.00	0.00
4,800.00	0.00	0.00	4,744.27	-29.17	-561.14	-111.63	-558.29	0.00	0.00	0.00
4,900.00	0.00	0.00	4,844.27	-129.17	-561.14	-111.63	-558.29	0.00	0.00	0.00
5,000.00	0.00	0.00	4,944.27	-229.17	-561.14	-111.63	-558.29	0.00	0.00	0.00
5,100.00	0.00	0.00	5,044.27	-329.17	-561.14	-111.63	-558.29	0.00	0.00	0.00
SHANNON										
5,192.83	0.00	0.00	5,137.10	-422.00	-561.14	-111.63	-558.29	0.00	0.00	0.00
5,200.00	0.00	0.00	5,144.27	-429.17	-561.14	-111.63	-558.29	0.00	0.00	0.00
5,300.00	0.00	0.00	5,244.27	-529.17	-561.14	-111.63	-558.29	0.00	0.00	0.00
5,400.00	0.00	0.00	5,344.27	-629.17	-561.14	-111.63	-558.29	0.00	0.00	0.00
5,500.00	0.00	0.00	5,444.27	-729.17	-561.14	-111.63	-558.29	0.00	0.00	0.00
5,600.00	0.00	0.00	5,544.27	-829.17	-561.14	-111.63	-558.29	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,684.87	0.00	0.00	5,629.14	-914.04	-561.14	-111.63	-558.29	0.00	0.00	0.00
5,700.00	1.51	347.15	5,644.27	-929.17	-560.95	-111.67	-558.09	10.00	10.00	0.00
5,800.00	11.51	347.15	5,743.50	-1,028.40	-549.90	-114.19	-546.99	10.00	10.00	0.00
5,900.00	21.51	347.15	5,839.25	-1,124.15	-522.22	-120.51	-519.17	10.00	10.00	0.00
SHARON SPRINGS SHALE										
5,988.90	30.40	347.15	5,919.10	-1,204.00	-484.33	-129.15	-481.07	10.00	10.00	0.00
6,000.00	31.51	347.15	5,928.62	-1,213.52	-478.76	-130.42	-475.48	10.00	10.00	0.00
6,100.00	41.51	347.15	6,008.89	-1,293.79	-420.82	-143.64	-417.24	10.00	10.00	0.00
NIOBRARA FORMATION										
6,104.30	41.94	347.15	6,012.10	-1,297.00	-418.03	-144.28	-414.43	10.00	10.00	0.00
NIOBRARA A CHALK										
6,126.19	44.13	347.15	6,028.10	-1,313.00	-403.47	-147.60	-399.79	10.00	10.00	0.00
6,200.00	51.51	347.15	6,077.62	-1,362.52	-350.17	-159.76	-346.22	10.00	10.00	0.00
NIOBRARA B CHALK										
6,243.01	55.81	347.15	6,103.10	-1,388.00	-316.41	-167.46	-312.28	10.00	10.00	0.00
6,300.00	61.51	347.15	6,132.73	-1,417.63	-268.96	-178.28	-264.59	10.00	10.00	0.00
6,400.00	71.51	347.15	6,172.53	-1,457.43	-179.66	-198.65	-174.82	10.00	10.00	0.00
NIOBRARA C CHALK										
6,453.48	76.86	347.15	6,187.10	-1,472.00	-129.51	-210.09	-124.42	10.00	10.00	0.00
6,500.00	81.51	347.15	6,195.83	-1,480.73	-84.97	-220.25	-79.64	10.00	10.00	0.00
BPI *NEW*: 460ft FSL & 1449ft FEL of Sec 11 - NIOBRARA C LP										
6,584.87	90.00	347.15	6,202.10	-1,487.00	-2.53	-239.06	3.23	10.00	10.00	0.00
6,600.00	90.00	347.60	6,202.10	-1,487.00	12.23	-242.37	18.07	3.00	0.00	3.00
6,700.00	90.00	350.60	6,202.10	-1,487.00	110.42	-261.27	116.68	3.00	0.00	3.00
6,800.00	90.00	353.60	6,202.10	-1,487.00	209.46	-275.00	216.02	3.00	0.00	3.00
6,900.00	90.00	356.60	6,202.10	-1,487.00	309.08	-283.54	315.82	3.00	0.00	3.00
7,000.00	90.00	359.60	6,202.10	-1,487.00	409.02	-286.85	415.81	3.00	0.00	3.00
EOT TO 0.31° AZ										
7,023.56	90.00	0.31	6,202.10	-1,487.00	432.58	-286.87	439.36	3.00	0.00	3.00
7,100.00	90.00	0.31	6,202.10	-1,487.00	509.01	-286.45	515.77	0.00	0.00	0.00
7,200.00	90.00	0.31	6,202.10	-1,487.00	609.01	-285.91	615.72	0.00	0.00	0.00
7,300.00	90.00	0.31	6,202.10	-1,487.00	709.01	-285.37	715.68	0.00	0.00	0.00
7,400.00	90.00	0.31	6,202.10	-1,487.00	809.01	-284.83	815.64	0.00	0.00	0.00

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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)
7,500.00	90.00	0.31	6,202.10	-1,487.00	909.01	-284.29	915.59	0.00	0.00	0.00
7,600.00	90.00	0.31	6,202.10	-1,487.00	1,009.01	-283.74	1,015.55	0.00	0.00	0.00
7,700.00	90.00	0.31	6,202.10	-1,487.00	1,109.01	-283.20	1,115.51	0.00	0.00	0.00
7,800.00	90.00	0.31	6,202.10	-1,487.00	1,209.00	-282.66	1,215.46	0.00	0.00	0.00
7,900.00	90.00	0.31	6,202.10	-1,487.00	1,309.00	-282.12	1,315.42	0.00	0.00	0.00
8,000.00	90.00	0.31	6,202.10	-1,487.00	1,409.00	-281.58	1,415.37	0.00	0.00	0.00
8,100.00	90.00	0.31	6,202.10	-1,487.00	1,509.00	-281.04	1,515.33	0.00	0.00	0.00
8,200.00	90.00	0.31	6,202.10	-1,487.00	1,609.00	-280.49	1,615.29	0.00	0.00	0.00
8,300.00	90.00	0.31	6,202.10	-1,487.00	1,709.00	-279.95	1,715.24	0.00	0.00	0.00
8,400.00	90.00	0.31	6,202.10	-1,487.00	1,809.00	-279.41	1,815.20	0.00	0.00	0.00
8,500.00	90.00	0.31	6,202.10	-1,487.00	1,908.99	-278.87	1,915.16	0.00	0.00	0.00
8,600.00	90.00	0.31	6,202.10	-1,487.00	2,008.99	-278.33	2,015.11	0.00	0.00	0.00
8,700.00	90.00	0.31	6,202.10	-1,487.00	2,108.99	-277.79	2,115.07	0.00	0.00	0.00
8,800.00	90.00	0.31	6,202.10	-1,487.00	2,208.99	-277.24	2,215.03	0.00	0.00	0.00
8,900.00	90.00	0.31	6,202.10	-1,487.00	2,308.99	-276.70	2,314.98	0.00	0.00	0.00
9,000.00	90.00	0.31	6,202.10	-1,487.00	2,408.99	-276.16	2,414.94	0.00	0.00	0.00
9,100.00	90.00	0.31	6,202.10	-1,487.00	2,508.99	-275.62	2,514.90	0.00	0.00	0.00
9,200.00	90.00	0.31	6,202.10	-1,487.00	2,608.98	-275.08	2,614.85	0.00	0.00	0.00
9,300.00	90.00	0.31	6,202.10	-1,487.00	2,708.98	-274.54	2,714.81	0.00	0.00	0.00
9,400.00	90.00	0.31	6,202.10	-1,487.00	2,808.98	-273.99	2,814.77	0.00	0.00	0.00
9,500.00	90.00	0.31	6,202.10	-1,487.00	2,908.98	-273.45	2,914.72	0.00	0.00	0.00
9,600.00	90.00	0.31	6,202.10	-1,487.00	3,008.98	-272.91	3,014.68	0.00	0.00	0.00
9,700.00	90.00	0.31	6,202.10	-1,487.00	3,108.98	-272.37	3,114.63	0.00	0.00	0.00
9,800.00	90.00	0.31	6,202.10	-1,487.00	3,208.98	-271.83	3,214.59	0.00	0.00	0.00
9,900.00	90.00	0.31	6,202.10	-1,487.00	3,308.97	-271.29	3,314.55	0.00	0.00	0.00
10,000.00	90.00	0.31	6,202.10	-1,487.00	3,408.97	-270.74	3,414.50	0.00	0.00	0.00
10,100.00	90.00	0.31	6,202.10	-1,487.00	3,508.97	-270.20	3,514.46	0.00	0.00	0.00
10,200.00	90.00	0.31	6,202.10	-1,487.00	3,608.97	-269.66	3,614.42	0.00	0.00	0.00
10,300.00	90.00	0.31	6,202.10	-1,487.00	3,708.97	-269.12	3,714.37	0.00	0.00	0.00
10,400.00	90.00	0.31	6,202.10	-1,487.00	3,808.97	-268.58	3,814.33	0.00	0.00	0.00
10,500.00	90.00	0.31	6,202.10	-1,487.00	3,908.97	-268.04	3,914.29	0.00	0.00	0.00
10,600.00	90.00	0.31	6,202.10	-1,487.00	4,008.96	-267.49	4,014.24	0.00	0.00	0.00
10,700.00	90.00	0.31	6,202.10	-1,487.00	4,108.96	-266.95	4,114.20	0.00	0.00	0.00
10,800.00	90.00	0.31	6,202.10	-1,487.00	4,208.96	-266.41	4,214.16	0.00	0.00	0.00
10,900.00	90.00	0.31	6,202.10	-1,487.00	4,308.96	-265.87	4,314.11	0.00	0.00	0.00
11,000.00	90.00	0.31	6,202.10	-1,487.00	4,408.96	-265.33	4,414.07	0.00	0.00	0.00
11,100.00	90.00	0.31	6,202.10	-1,487.00	4,508.96	-264.79	4,514.03	0.00	0.00	0.00
11,200.00	90.00	0.31	6,202.10	-1,487.00	4,608.95	-264.25	4,613.98	0.00	0.00	0.00
11,300.00	90.00	0.31	6,202.10	-1,487.00	4,708.95	-263.70	4,713.94	0.00	0.00	0.00
11,400.00	90.00	0.31	6,202.10	-1,487.00	4,808.95	-263.16	4,813.90	0.00	0.00	0.00
11,500.00	90.00	0.31	6,202.10	-1,487.00	4,908.95	-262.62	4,913.85	0.00	0.00	0.00
11,600.00	90.00	0.31	6,202.10	-1,487.00	5,008.95	-262.08	5,013.81	0.00	0.00	0.00
11,700.00	90.00	0.31	6,202.10	-1,487.00	5,108.95	-261.54	5,113.76	0.00	0.00	0.00
11,800.00	90.00	0.31	6,202.10	-1,487.00	5,208.95	-261.00	5,213.72	0.00	0.00	0.00
11,900.00	90.00	0.31	6,202.10	-1,487.00	5,308.94	-260.45	5,313.68	0.00	0.00	0.00
12,000.00	90.00	0.31	6,202.10	-1,487.00	5,408.94	-259.91	5,413.63	0.00	0.00	0.00
12,100.00	90.00	0.31	6,202.10	-1,487.00	5,508.94	-259.37	5,513.59	0.00	0.00	0.00
12,200.00	90.00	0.31	6,202.10	-1,487.00	5,608.94	-258.83	5,613.55	0.00	0.00	0.00
12,300.00	90.00	0.31	6,202.10	-1,487.00	5,708.94	-258.29	5,713.50	0.00	0.00	0.00
12,400.00	90.00	0.31	6,202.10	-1,487.00	5,808.94	-257.75	5,813.46	0.00	0.00	0.00
12,500.00	90.00	0.31	6,202.10	-1,487.00	5,908.94	-257.20	5,913.42	0.00	0.00	0.00
12,600.00	90.00	0.31	6,202.10	-1,487.00	6,008.93	-256.66	6,013.37	0.00	0.00	0.00
12,700.00	90.00	0.31	6,202.10	-1,487.00	6,108.93	-256.12	6,113.33	0.00	0.00	0.00
12,800.00	90.00	0.31	6,202.10	-1,487.00	6,208.93	-255.58	6,213.29	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-2-3
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB 25' @ 4715.10usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4715.10usft (Original Well Elev)
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-2-3	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)
12,900.00	90.00	0.31	6,202.10	-1,487.00	6,308.93	-255.04	6,313.24	0.00	0.00	0.00
13,000.00	90.00	0.31	6,202.10	-1,487.00	6,408.93	-254.50	6,413.20	0.00	0.00	0.00
13,100.00	90.00	0.31	6,202.10	-1,487.00	6,508.93	-253.95	6,513.16	0.00	0.00	0.00
13,200.00	90.00	0.31	6,202.10	-1,487.00	6,608.93	-253.41	6,613.11	0.00	0.00	0.00
13,300.00	90.00	0.31	6,202.10	-1,487.00	6,708.92	-252.87	6,713.07	0.00	0.00	0.00
13,400.00	90.00	0.31	6,202.10	-1,487.00	6,808.92	-252.33	6,813.02	0.00	0.00	0.00
13,500.00	90.00	0.31	6,202.10	-1,487.00	6,908.92	-251.79	6,912.98	0.00	0.00	0.00
13,600.00	90.00	0.31	6,202.10	-1,487.00	7,008.92	-251.25	7,012.94	0.00	0.00	0.00
13,700.00	90.00	0.31	6,202.10	-1,487.00	7,108.92	-250.70	7,112.89	0.00	0.00	0.00
13,800.00	90.00	0.31	6,202.10	-1,487.00	7,208.92	-250.16	7,212.85	0.00	0.00	0.00
13,900.00	90.00	0.31	6,202.10	-1,487.00	7,308.92	-249.62	7,312.81	0.00	0.00	0.00
14,000.00	90.00	0.31	6,202.10	-1,487.00	7,408.91	-249.08	7,412.76	0.00	0.00	0.00
14,100.00	90.00	0.31	6,202.10	-1,487.00	7,508.91	-248.54	7,512.72	0.00	0.00	0.00
14,200.00	90.00	0.31	6,202.10	-1,487.00	7,608.91	-248.00	7,612.68	0.00	0.00	0.00
14,300.00	90.00	0.31	6,202.10	-1,487.00	7,708.91	-247.45	7,712.63	0.00	0.00	0.00
14,400.00	90.00	0.31	6,202.10	-1,487.00	7,808.91	-246.91	7,812.59	0.00	0.00	0.00
14,500.00	90.00	0.31	6,202.10	-1,487.00	7,908.91	-246.37	7,912.55	0.00	0.00	0.00
14,600.00	90.00	0.31	6,202.10	-1,487.00	8,008.90	-245.83	8,012.50	0.00	0.00	0.00
14,700.00	90.00	0.31	6,202.10	-1,487.00	8,108.90	-245.29	8,112.46	0.00	0.00	0.00
14,800.00	90.00	0.31	6,202.10	-1,487.00	8,208.90	-244.75	8,212.42	0.00	0.00	0.00
14,900.00	90.00	0.31	6,202.10	-1,487.00	8,308.90	-244.20	8,312.37	0.00	0.00	0.00
15,000.00	90.00	0.31	6,202.10	-1,487.00	8,408.90	-243.66	8,412.33	0.00	0.00	0.00
15,100.00	90.00	0.31	6,202.10	-1,487.00	8,508.90	-243.12	8,512.28	0.00	0.00	0.00
15,200.00	90.00	0.31	6,202.10	-1,487.00	8,608.90	-242.58	8,612.24	0.00	0.00	0.00
15,300.00	90.00	0.31	6,202.10	-1,487.00	8,708.89	-242.04	8,712.20	0.00	0.00	0.00
15,400.00	90.00	0.31	6,202.10	-1,487.00	8,808.89	-241.50	8,812.15	0.00	0.00	0.00
15,500.00	90.00	0.31	6,202.10	-1,487.00	8,908.89	-240.96	8,912.11	0.00	0.00	0.00
15,600.00	90.00	0.31	6,202.10	-1,487.00	9,008.89	-240.41	9,012.07	0.00	0.00	0.00
15,700.00	90.00	0.31	6,202.10	-1,487.00	9,108.89	-239.87	9,112.02	0.00	0.00	0.00
15,800.00	90.00	0.31	6,202.10	-1,487.00	9,208.89	-239.33	9,211.98	0.00	0.00	0.00
15,900.00	90.00	0.31	6,202.10	-1,487.00	9,308.89	-238.79	9,311.94	0.00	0.00	0.00
16,000.00	90.00	0.31	6,202.10	-1,487.00	9,408.88	-238.25	9,411.89	0.00	0.00	0.00
16,100.00	90.00	0.31	6,202.10	-1,487.00	9,508.88	-237.71	9,511.85	0.00	0.00	0.00
16,200.00	90.00	0.31	6,202.10	-1,487.00	9,608.88	-237.16	9,611.81	0.00	0.00	0.00
16,300.00	90.00	0.31	6,202.10	-1,487.00	9,708.88	-236.62	9,711.76	0.00	0.00	0.00
EPI: 460ft FNL & 1526ft FEL of Sec 2										
16,301.18	90.00	0.31	6,202.10	-1,487.00	9,710.06	-236.62	9,712.94	0.00	0.00	0.00
EOT TO 0.16° AZ										
16,306.31	90.00	0.16	6,202.10	-1,487.00	9,715.19	-236.59	9,718.07	3.00	0.00	-3.00
16,400.00	90.00	0.16	6,202.10	-1,487.00	9,808.88	-236.34	9,811.73	0.00	0.00	0.00
BHL: 360ft FNL & 1527ft FEL of Sec 2										
16,401.00	90.00	0.16	6,202.10	-1,487.00	9,809.88	-236.34	9,812.73	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-2-3
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB 25' @ 4715.10usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4715.10usft (Original Well Elev)
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-2-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
701.41	700.10	PIERRE SHALE (BASE FOX HILLS			
3,360.34	3,305.10	PARKMAN			
4,520.83	4,465.10	SUSSEX			
5,192.83	5,137.10	SHANNON			
5,988.90	5,919.10	SHARON SPRINGS SHALE			
6,104.30	6,012.10	NIOBRARA FORMATION			
6,126.19	6,028.10	NIOBRARA A CHALK			
6,243.01	6,103.10	NIOBRARA B CHALK			
6,453.48	6,187.10	NIOBRARA C CHALK			
6,584.87	6,202.10	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: 460ft FSL & 1210ft FEL of Sec 11
300.00	300.00	0.00	0.00	START NUDGE (2°/100ft BUR)
900.00	895.62	-61.40	-12.21	EOB TO 12° INC
3,049.62	2,998.27	-499.74	-99.42	END OF TANGENT
3,649.62	3,593.89	-561.14	-111.63	EOD TO VERTICAL
5,684.87	5,629.14	-561.14	-111.63	KOP (10°/100ft BUR)
6,584.87	6,202.10	-2.53	-239.06	BPI *NEW*: 460ft FSL & 1449ft FEL of Sec 11
7,023.56	6,202.10	432.58	-286.87	EOT TO 0.31° AZ
16,301.18	6,202.10	9,710.06	-236.62	EPI: 460ft FNL & 1526ft FEL of Sec 2
16,306.31	6,202.10	9,715.19	-236.59	EOT TO 0.16° AZ
16,401.00	6,202.10	9,809.88	-236.34	BHL: 360ft FNL & 1527ft FEL of Sec 2