

# **Bison Oil & Gas II, LLC**

**WELD COUNTY, COLORADO (NAD 83)**

**WADE 8-59 20A**

**WADE 8-59 20A-5**

**Wellbore #1**

**Plan: Design #1**

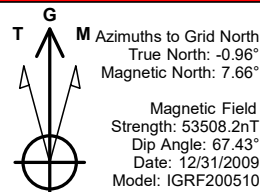
## **Standard Survey Report**

**06 May, 2020**





Project: WELD COUNTY, COLORADO (NAD 83)  
Site: WADE 8-59 20A  
Well: WADE 8-59 20A-5  
Wellbore: Wellbore #1  
Design: Design #1



#### ANNOTATIONS

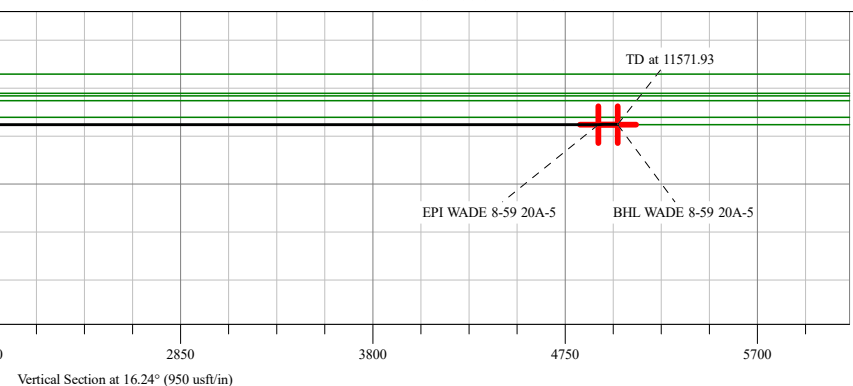
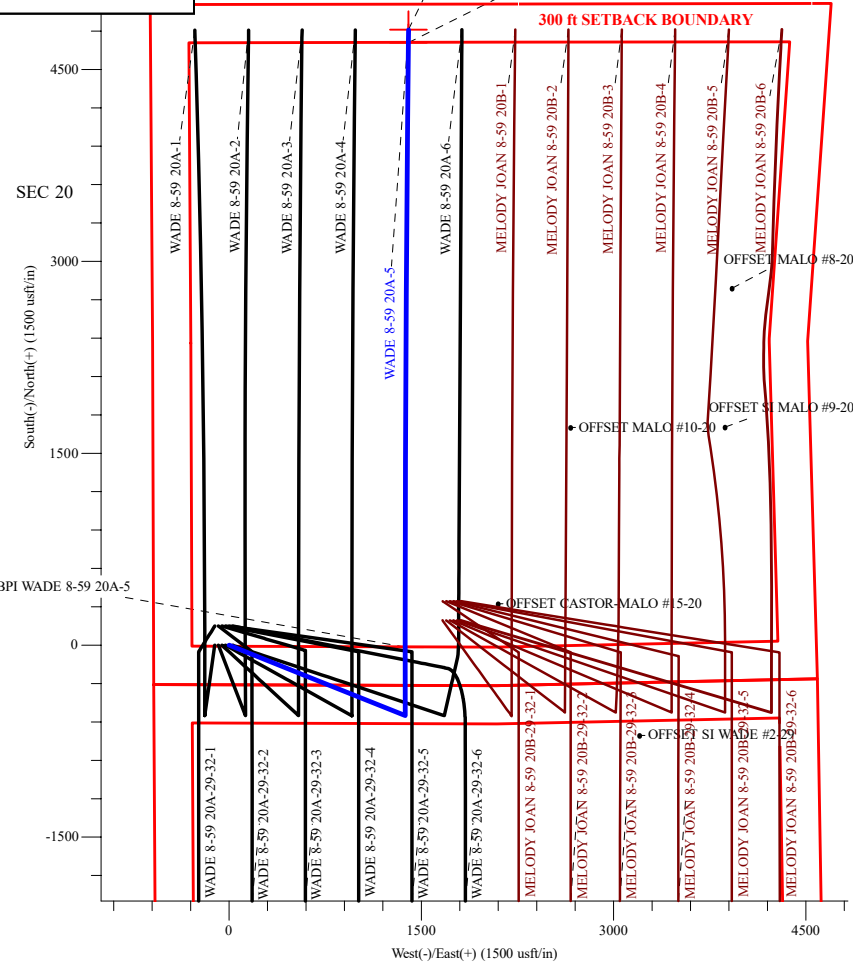
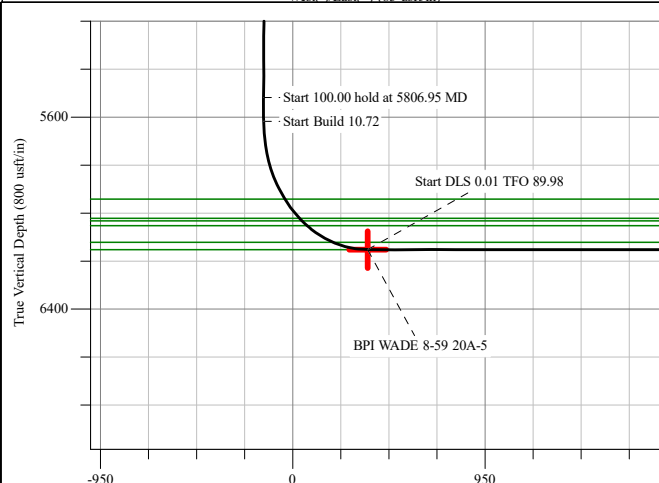
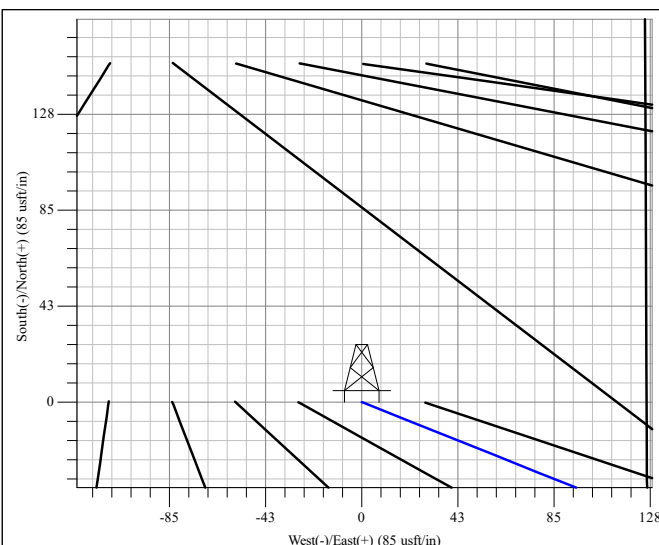
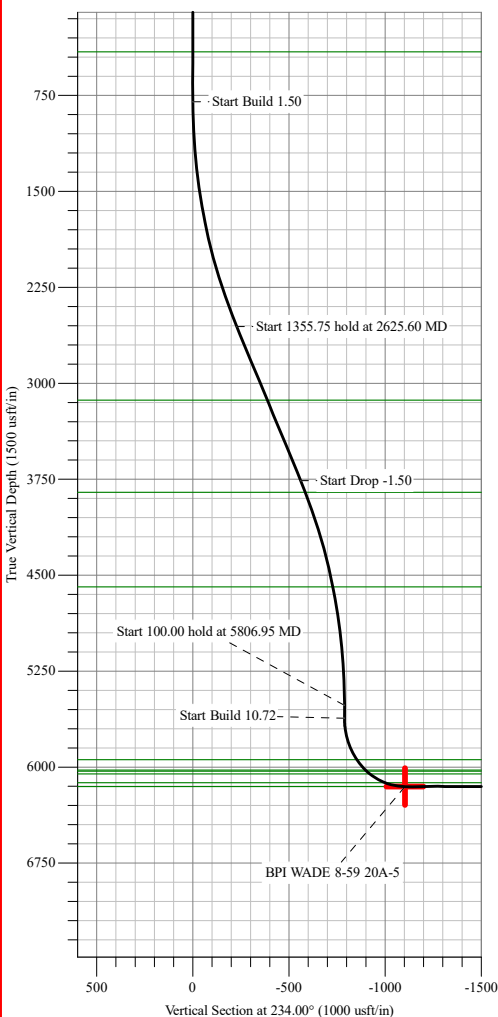
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Dep	Annotation
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	Start Build 1.50
2625.60	27.38	111.82	2556.88	-159.10	397.35	-41.66	428.02	Start 1355.75 hold at 2625.60 MD
3981.35	27.38	111.82	3760.72	-390.90	976.25	-102.35	1051.60	Start Drop -1.50
5806.95	0.00	0.00	5517.60	-550.00	1373.60	-144.01	1479.62	Start 100.00 hold at 5806.95 MD
5906.95	0.00	0.00	5617.60	-550.00	1373.60	-144.01	1479.62	Start Build 10.72
6746.39	90.00	0.00	6152.01	-15.59	1373.60	369.08	2014.03	Start DLS 0.01 TFO 89.98
11472.59	90.00	0.63	6152.00	4710.51	1399.59	4913.96	6740.23	Start 99.34 hold at 11472.59 MD
11571.93	90.00	0.63	6152.00	4809.84	1400.68	5009.64	6839.57	TD at 11571.93

#### PROPOSED LOCAL COORDINATES:

SHL: 310 ft FSL & 590 ft FWL Sec 20  
BPI: 300 ft FSL & 1964 ft FWL Sec 20  
EPI: 300 ft FNL & 2014 ft FWL Sec 20  
BHL: 200 ft FNL & 2014 ft FWL Sec 20

#### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BPI WADE 8-59 20A-5	6152.00	-14.38	1373.60	1479936.09	3415288.65	40° 38' 28.324 N 104° 0' 12.593 W	
EPI WADE 8-59 20A-5	6152.00	4710.51	1399.59	1484660.98	3415314.63	40° 39' 15.001 N 104° 0' 11.221 W	
BHL WADE 8-59 20A-5	6152.00	4810.34	1399.01	1484760.81	3415314.06	40° 39' 15.988 N 104° 0' 11.207 W	Point



## Survey Report



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4897.90usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4897.90usft
<b>Well:</b>	WADE 8-59 20A-5	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM

<b>Project</b>	WELD COUNTY, COLORADO (NAD 83),		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	WADE 8-59 20A		
<b>Site Position:</b>		<b>Northing:</b>	1,480,100.55 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,413,803.72 usft
<b>Position Uncertainty:</b>	1.10 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40° 38' 30.196 N
		<b>Longitude:</b>	104° 0' 31.817 W
		<b>Grid Convergence:</b>	0.96 °

<b>Well</b>	WADE 8-59 20A-5		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b> 1,479,950.47 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b> 3,413,915.04 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40° 38' 28.694 N
		<b>Longitude:</b>	104° 0' 30.406 W
		<b>Ground Level:</b>	4,872.90 usft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF200510	12/31/2009	8.63
			<b>Dip Angle (°)</b>
			67.43
			<b>Field Strength (nT)</b>
			53,508.20239235

<b>Design</b>	Design #1		
<b>Audit Notes:</b>			
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b> 0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>
	0.00	0.00	0.00
			<b>Direction (°)</b>
			16.24

<b>Survey Tool Program</b>	<b>Date</b> 5/6/2020		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>
0.00	11,571.93	Design #1 (Wellbore #1)	MWD
			<b>Description</b>
			Fixed:v2:standard declination

<b>Planned Survey</b>									
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
410.00	0.00	0.00	410.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre Shale (Base of Fox Hills)</b>									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00

## Survey Report



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<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4897.90usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4897.90usft
<b>Well:</b>	WADE 8-59 20A-5	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>Start Build 1.50</b>									
900.00	1.50	111.82	899.99	-0.49	1.22	-0.13	1.50	1.50	0.00
1,000.00	3.00	111.82	999.91	-1.95	4.86	-0.51	1.50	1.50	0.00
1,100.00	4.50	111.82	1,099.69	-4.38	10.93	-1.15	1.50	1.50	0.00
1,200.00	6.00	111.82	1,199.27	-7.78	19.43	-2.04	1.50	1.50	0.00
1,300.00	7.50	111.82	1,298.57	-12.15	30.34	-3.18	1.50	1.50	0.00
1,400.00	9.00	111.82	1,397.54	-17.48	43.66	-4.58	1.50	1.50	0.00
1,500.00	10.50	111.82	1,496.09	-23.78	59.38	-6.23	1.50	1.50	0.00
1,600.00	12.00	111.82	1,594.16	-31.03	77.49	-8.12	1.50	1.50	0.00
1,700.00	13.50	111.82	1,691.70	-39.23	97.98	-10.27	1.50	1.50	0.00
1,800.00	15.00	111.82	1,788.62	-48.38	120.83	-12.67	1.50	1.50	0.00
1,900.00	16.50	111.82	1,884.86	-58.47	146.03	-15.31	1.50	1.50	0.00
2,000.00	18.00	111.82	1,980.36	-69.49	173.55	-18.20	1.50	1.50	0.00
2,100.00	19.50	111.82	2,075.05	-81.44	203.39	-21.32	1.50	1.50	0.00
2,200.00	21.00	111.82	2,168.86	-94.31	235.53	-24.69	1.50	1.50	0.00
2,300.00	22.50	111.82	2,261.74	-108.08	269.92	-28.30	1.50	1.50	0.00
2,400.00	24.00	111.82	2,353.62	-122.75	306.57	-32.14	1.50	1.50	0.00
2,500.00	25.50	111.82	2,444.43	-138.31	345.43	-36.22	1.50	1.50	0.00
2,600.00	27.00	111.82	2,534.12	-154.75	386.49	-40.52	1.50	1.50	0.00
2,625.60	27.38	111.82	2,556.88	-159.10	397.35	-41.66	1.50	1.50	0.00
<b>Start 1355.75 hold at 2625.60 MD</b>									
2,700.00	27.38	111.82	2,622.95	-171.82	429.12	-44.99	0.00	0.00	0.00
2,800.00	27.38	111.82	2,711.74	-188.92	471.82	-49.47	0.00	0.00	0.00
2,900.00	27.38	111.82	2,800.54	-206.02	514.52	-53.94	0.00	0.00	0.00
3,000.00	27.38	111.82	2,889.33	-223.11	557.22	-58.42	0.00	0.00	0.00
3,100.00	27.38	111.82	2,978.13	-240.21	599.92	-62.90	0.00	0.00	0.00
3,200.00	27.38	111.82	3,066.92	-257.31	642.62	-67.37	0.00	0.00	0.00
3,273.29	27.38	111.82	3,132.00	-269.84	673.91	-70.65	0.00	0.00	0.00
<b>Parkman</b>									
3,300.00	27.38	111.82	3,155.72	-274.41	685.32	-71.85	0.00	0.00	0.00
3,400.00	27.38	111.82	3,244.51	-291.50	728.02	-76.33	0.00	0.00	0.00
3,500.00	27.38	111.82	3,333.31	-308.60	770.72	-80.80	0.00	0.00	0.00
3,600.00	27.38	111.82	3,422.10	-325.70	813.42	-85.28	0.00	0.00	0.00
3,700.00	27.38	111.82	3,510.89	-342.79	856.12	-89.76	0.00	0.00	0.00
3,800.00	27.38	111.82	3,599.69	-359.89	898.82	-94.23	0.00	0.00	0.00
3,900.00	27.38	111.82	3,688.48	-376.99	941.51	-98.71	0.00	0.00	0.00
3,981.35	27.38	111.82	3,760.72	-390.90	976.25	-102.35	0.00	0.00	0.00
<b>Start Drop -1.50</b>									
4,000.00	27.10	111.82	3,777.30	-394.07	984.18	-103.18	1.50	-1.50	0.00
4,083.46	25.85	111.82	3,852.00	-407.90	1,018.72	-106.80	1.50	-1.50	0.00
<b>Sussex</b>									
4,100.00	25.60	111.82	3,866.90	-410.57	1,025.39	-107.50	1.50	-1.50	0.00
4,200.00	24.10	111.82	3,957.64	-426.20	1,064.40	-111.59	1.50	-1.50	0.00
4,300.00	22.60	111.82	4,049.44	-440.93	1,101.20	-115.45	1.50	-1.50	0.00

## Survey Report



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<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4897.90usft
<b>Well:</b>	WADE 8-59 20A-5	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.00	21.10	111.82	4,142.25	-454.77	1,135.76	-119.08	1.50	-1.50	0.00
4,500.00	19.60	111.82	4,236.01	-467.70	1,168.05	-122.46	1.50	-1.50	0.00
4,600.00	18.10	111.82	4,330.64	-479.71	1,198.05	-125.61	1.50	-1.50	0.00
4,700.00	16.60	111.82	4,426.08	-490.79	1,225.74	-128.51	1.50	-1.50	0.00
4,800.00	15.10	111.82	4,522.28	-500.95	1,251.10	-131.17	1.50	-1.50	0.00
4,872.04	14.02	111.82	4,592.00	-507.68	1,267.92	-132.93	1.50	-1.50	0.00
<b>Shannon</b>									
4,900.00	13.60	111.82	4,619.15	-510.16	1,274.11	-133.58	1.50	-1.50	0.00
5,000.00	12.10	111.82	4,716.64	-518.43	1,294.77	-135.75	1.50	-1.50	0.00
5,100.00	10.60	111.82	4,814.68	-525.75	1,313.04	-137.66	1.50	-1.50	0.00
5,200.00	9.10	111.82	4,913.21	-532.11	1,328.93	-139.33	1.50	-1.50	0.00
5,300.00	7.60	111.82	5,012.14	-537.51	1,342.42	-140.74	1.50	-1.50	0.00
5,400.00	6.10	111.82	5,111.42	-541.95	1,353.50	-141.90	1.50	-1.50	0.00
5,500.00	4.60	111.82	5,210.98	-545.42	1,362.16	-142.81	1.50	-1.50	0.00
5,600.00	3.10	111.82	5,310.76	-547.92	1,368.40	-143.47	1.50	-1.50	0.00
5,700.00	1.60	111.82	5,410.67	-549.44	1,372.21	-143.87	1.50	-1.50	0.00
5,806.95	0.00	0.00	5,517.60	-550.00	1,373.60	-144.01	1.50	-1.50	0.00
<b>Start 100.00 hold at 5806.95 MD</b>									
5,906.95	0.00	0.00	5,617.60	-550.00	1,373.60	-144.01	0.00	0.00	0.00
<b>Start Build 10.72</b>									
5,950.00	4.62	0.00	5,660.61	-548.27	1,373.60	-142.35	10.72	10.72	0.00
6,000.00	9.98	0.00	5,710.18	-541.92	1,373.60	-136.25	10.72	10.72	0.00
6,050.00	15.34	0.00	5,758.95	-530.97	1,373.60	-125.74	10.72	10.72	0.00
6,100.00	20.70	0.00	5,806.48	-515.51	1,373.60	-110.89	10.72	10.72	0.00
6,150.00	26.06	0.00	5,852.36	-495.67	1,373.60	-91.85	10.72	10.72	0.00
6,200.00	31.42	0.00	5,896.19	-471.64	1,373.60	-68.78	10.72	10.72	0.00
6,250.00	36.78	0.00	5,937.57	-443.62	1,373.60	-41.87	10.72	10.72	0.00
6,255.55	37.37	0.00	5,942.00	-440.28	1,373.60	-38.66	10.72	10.72	0.00
<b>Sharon Springs Shale</b>									
6,300.00	42.14	0.00	5,976.16	-411.86	1,373.60	-11.38	10.72	10.72	0.00
6,350.00	47.50	0.00	6,011.62	-376.62	1,373.60	22.45	10.72	10.72	0.00
6,365.62	49.18	0.00	6,022.00	-364.95	1,373.60	33.66	10.72	10.72	0.00
<b>Niobrara Formation</b>									
6,381.18	50.84	0.00	6,032.00	-353.03	1,373.60	45.10	10.72	10.72	0.00
<b>Niobrara A Chalk</b>									
6,400.00	52.86	0.00	6,043.62	-338.23	1,373.60	59.31	10.72	10.72	0.00
6,414.13	54.38	0.00	6,052.00	-326.86	1,373.60	70.23	10.72	10.72	0.00
<b>Niobrara A Landing Point</b>									
6,450.00	58.22	0.00	6,071.90	-297.02	1,373.60	98.88	10.72	10.72	0.00
6,500.00	63.58	0.00	6,096.21	-253.35	1,373.60	140.81	10.72	10.72	0.00
6,550.00	68.94	0.00	6,116.33	-207.59	1,373.60	184.74	10.72	10.72	0.00
6,566.45	70.71	0.00	6,122.00	-192.15	1,373.60	199.57	10.72	10.72	0.00
<b>Niobrara B Chalk</b>									
6,600.00	74.30	0.00	6,132.08	-160.16	1,373.60	230.28	10.72	10.72	0.00

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<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4897.90usft
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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
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Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,650.00	79.67	0.00	6,143.34	-111.46	1,373.60	277.04	10.72	10.72	0.00
6,700.00	85.03	0.00	6,150.00	-61.93	1,373.60	324.60	10.72	10.72	0.00
6,743.46	89.69	0.00	6,152.00	-18.53	1,373.60	366.27	10.72	10.72	0.00
<b>Niobrara B Landing Point</b>									
6,746.39	90.00	0.00	6,152.01	-15.59	1,373.60	369.08	10.72	10.72	0.00
<b>Start DLS 0.01 TFO 89.98</b>									
6,747.61	90.00	0.00	6,152.01	-14.38	1,373.60	370.25	0.00	0.00	0.00
<b>BPI WADE 8-59 20A-5</b>									
6,800.00	90.00	0.01	6,152.01	38.02	1,373.61	420.55	0.01	0.00	0.01
6,900.00	90.00	0.02	6,152.01	138.02	1,373.63	516.57	0.01	0.00	0.01
7,000.00	90.00	0.03	6,152.01	238.02	1,373.68	612.60	0.01	0.00	0.01
7,100.00	90.00	0.05	6,152.01	338.02	1,373.75	708.63	0.01	0.00	0.01
7,200.00	90.00	0.06	6,152.01	438.02	1,373.84	804.67	0.01	0.00	0.01
7,300.00	90.00	0.07	6,152.01	538.02	1,373.96	900.71	0.01	0.00	0.01
7,400.00	90.00	0.09	6,152.01	638.02	1,374.10	996.76	0.01	0.00	0.01
7,500.00	90.00	0.10	6,152.01	738.02	1,374.26	1,092.82	0.01	0.00	0.01
7,600.00	90.00	0.11	6,152.01	838.02	1,374.45	1,188.88	0.01	0.00	0.01
7,700.00	90.00	0.13	6,152.01	938.02	1,374.66	1,284.95	0.01	0.00	0.01
7,800.00	90.00	0.14	6,152.01	1,038.01	1,374.89	1,381.03	0.01	0.00	0.01
7,900.00	90.00	0.15	6,152.01	1,138.01	1,375.15	1,477.11	0.01	0.00	0.01
8,000.00	90.00	0.17	6,152.01	1,238.01	1,375.43	1,573.20	0.01	0.00	0.01
8,100.00	90.00	0.18	6,152.01	1,338.01	1,375.73	1,669.30	0.01	0.00	0.01
8,200.00	90.00	0.19	6,152.01	1,438.01	1,376.06	1,765.40	0.01	0.00	0.01
8,300.00	90.00	0.21	6,152.01	1,538.01	1,376.41	1,861.51	0.01	0.00	0.01
8,400.00	90.00	0.22	6,152.01	1,638.01	1,376.78	1,957.63	0.01	0.00	0.01
8,500.00	90.00	0.23	6,152.01	1,738.01	1,377.18	2,053.75	0.01	0.00	0.01
8,600.00	90.00	0.25	6,152.01	1,838.01	1,377.60	2,149.88	0.01	0.00	0.01
8,700.00	90.00	0.26	6,152.01	1,938.01	1,378.04	2,246.01	0.01	0.00	0.01
8,800.00	90.00	0.27	6,152.01	2,038.01	1,378.51	2,342.15	0.01	0.00	0.01
8,900.00	90.00	0.29	6,152.01	2,138.01	1,379.00	2,438.30	0.01	0.00	0.01
9,000.00	90.00	0.30	6,152.01	2,238.01	1,379.51	2,534.45	0.01	0.00	0.01
9,100.00	90.00	0.31	6,152.01	2,338.00	1,380.05	2,630.61	0.01	0.00	0.01
9,200.00	90.00	0.33	6,152.01	2,438.00	1,380.61	2,726.78	0.01	0.00	0.01
9,300.00	90.00	0.34	6,152.01	2,538.00	1,381.19	2,822.95	0.01	0.00	0.01
9,400.00	90.00	0.35	6,152.01	2,638.00	1,381.79	2,919.13	0.01	0.00	0.01
9,500.00	90.00	0.37	6,152.01	2,738.00	1,382.42	3,015.32	0.01	0.00	0.01
9,600.00	90.00	0.38	6,152.01	2,838.00	1,383.07	3,111.51	0.01	0.00	0.01
9,700.00	90.00	0.39	6,152.01	2,937.99	1,383.75	3,207.71	0.01	0.00	0.01
9,800.00	90.00	0.41	6,152.00	3,037.99	1,384.45	3,303.91	0.01	0.00	0.01
9,900.00	90.00	0.42	6,152.00	3,137.99	1,385.17	3,400.13	0.01	0.00	0.01
10,000.00	90.00	0.43	6,152.00	3,237.98	1,385.92	3,496.34	0.01	0.00	0.01
10,100.00	90.00	0.45	6,152.00	3,337.98	1,386.69	3,592.57	0.01	0.00	0.01
10,200.00	90.00	0.46	6,152.00	3,437.98	1,387.48	3,688.80	0.01	0.00	0.01
10,300.00	90.00	0.47	6,152.00	3,537.98	1,388.29	3,785.03	0.01	0.00	0.01

## Survey Report



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4897.90usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4897.90usft
<b>Well:</b>	WADE 8-59 20A-5	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.00	90.00	0.49	6,152.00	3,637.97	1,389.13	3,881.28	0.01	0.00	0.01
10,500.00	90.00	0.50	6,152.00	3,737.97	1,389.99	3,977.53	0.01	0.00	0.01
10,600.00	90.00	0.51	6,152.00	3,837.96	1,390.88	4,073.78	0.01	0.00	0.01
10,700.00	90.00	0.53	6,152.00	3,937.96	1,391.79	4,170.04	0.01	0.00	0.01
10,800.00	90.00	0.54	6,152.00	4,037.96	1,392.72	4,266.31	0.01	0.00	0.01
10,900.00	90.00	0.55	6,152.00	4,137.95	1,393.67	4,362.59	0.01	0.00	0.01
11,000.00	90.00	0.57	6,152.00	4,237.95	1,394.65	4,458.87	0.01	0.00	0.01
11,100.00	90.00	0.58	6,152.00	4,337.94	1,395.65	4,555.15	0.01	0.00	0.01
11,200.00	90.00	0.59	6,152.00	4,437.94	1,396.68	4,651.45	0.01	0.00	0.01
11,300.00	90.00	0.61	6,152.00	4,537.93	1,397.72	4,747.75	0.01	0.00	0.01
11,400.00	90.00	0.62	6,152.00	4,637.93	1,398.79	4,844.05	0.01	0.00	0.01
11,472.59	90.00	0.63	6,152.00	4,710.51	1,399.59	4,913.96	0.01	0.00	0.01
<b>Start 99.34 hold at 11472.59 MD - EPI WADE 8-59 20A-5</b>									
11,500.00	90.00	0.63	6,152.00	4,737.92	1,399.89	4,940.36	0.00	0.00	0.00
11,571.93	90.00	0.63	6,152.00	4,809.84	1,400.68	5,009.64	0.00	0.00	0.00
<b>TD at 11571.93</b>									
11,571.94	90.00	0.63	6,152.00	4,809.85	1,400.68	5,009.65	0.00	0.00	0.00
<b>BHL WADE 8-59 20A-5</b>									

## Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BPI WADE 8-59 20A- - hit/miss target - Shape - Point	0.00	0.00	6,152.00	-14.38	1,373.60	1,479,936.10	3,415,288.65	40° 38' 28.324 N	104° 0' 12.593 W
- plan misses target center by 0.01usft at 6747.61usft MD (6152.01 TVD, -14.38 N, 1373.60 E)									
EPI WADE 8-59 20A- - plan hits target center - Point	0.00	0.00	6,152.00	4,710.51	1,399.59	1,484,660.98	3,415,314.63	40° 39' 15.001 N	104° 0' 11.221 W
BHL WADE 8-59 20A- - plan misses target center by 1.74usft at 11571.94usft MD (6152.00 TVD, 4809.85 N, 1400.68 E) - Point	0.00	0.00	6,152.00	4,810.34	1,399.01	1,484,760.81	3,415,314.05	40° 39' 15.988 N	104° 0' 11.207 W

## Survey Report



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4897.90usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4897.90usft
<b>Well:</b>	WADE 8-59 20A-5	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM

## Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
410.00	410.00	Pierre Shale (Base of Fox Hills)			
3,273.29	3,132.00	Parkman			
4,083.46	3,852.00	Sussex			
4,872.04	4,592.00	Shannon			
6,255.55	5,942.00	Sharon Springs Shale			
6,365.62	6,022.00	Niobrara Formation			
6,381.18	6,032.00	Niobrara A Chalk			
6,414.13	6,052.00	Niobrara A Landing Point			
6,566.45	6,122.00	Niobrara B Chalk			
6,743.46	6,152.00	Niobrara B Landing Point			

## Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
800	800	0	0	Start Build 1.50
2626	2557	-159	397	Start 1355.75 hold at 2625.60 MD
3981	3761	-391	976	Start Drop -1.50
5807	5518	-550	1374	Start 100.00 hold at 5806.95 MD
5907	5618	-550	1374	Start Build 10.72
6746	6152	-16	1374	Start DLS 0.01 TFO 89.98
11,473	6152	4711	1400	Start 99.34 hold at 11472.59 MD
11,572	6152	4810	1401	TD at 11571.93

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_