

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

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

**WADE 8-59 20A**

**WADE 8-59 20A-29-32-5**

**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-29-32-5  
Wellbore: Wellbore #1  
Design: Design #1



M Azimuths to Grid North  
True North: -0.96°  
Magnetic North: 7.66°  
Magnetic Field  
Strength: 53508.5nT  
Dip Angle: 67.43°  
Date: 12/31/2009  
Model: IGRF200510

#### ANNOTATIONS

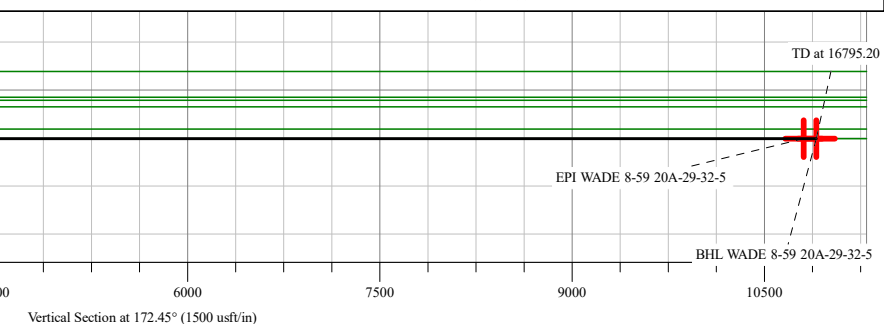
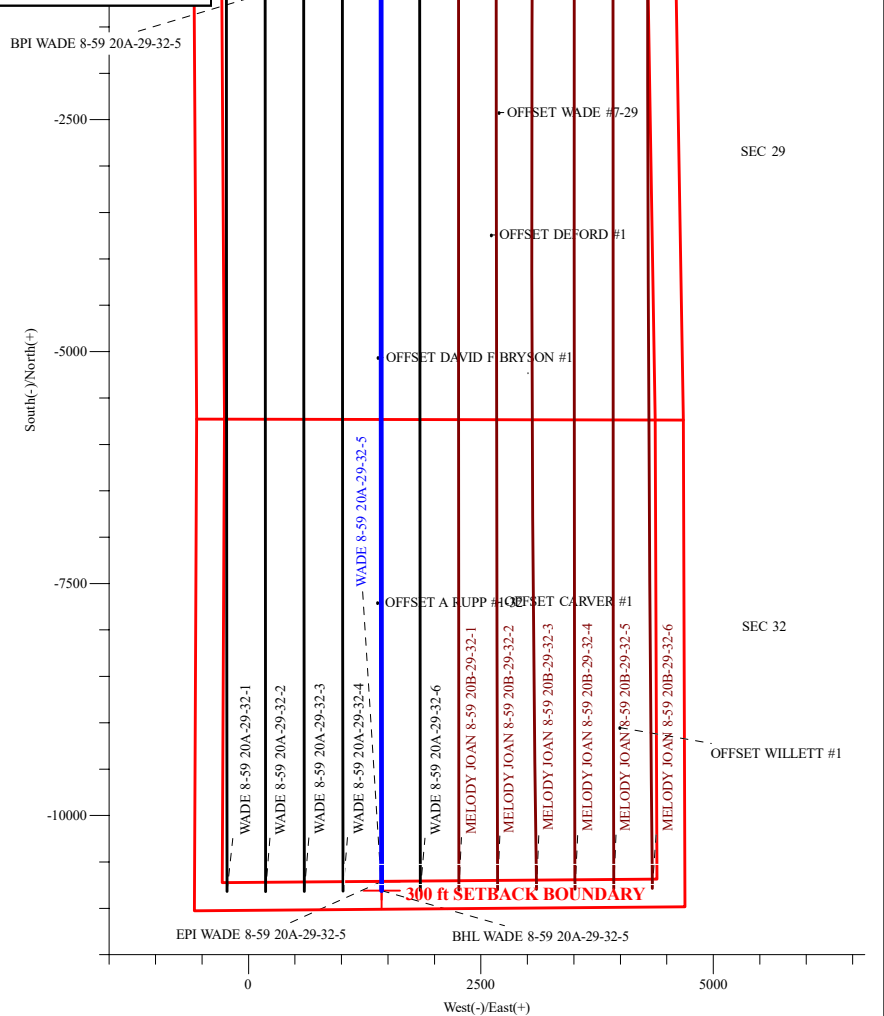
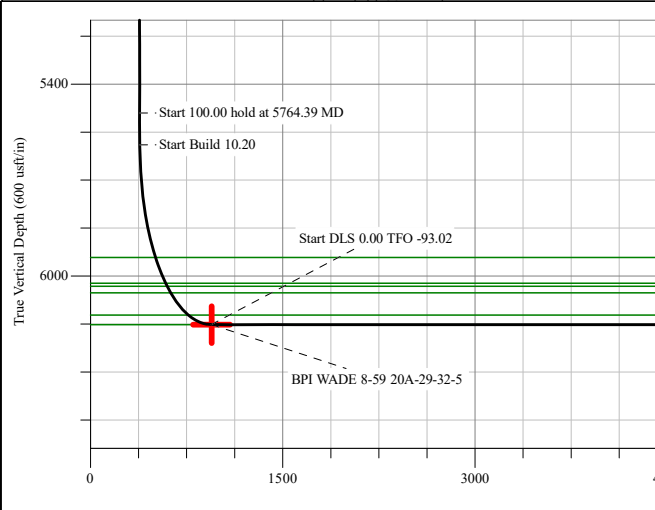
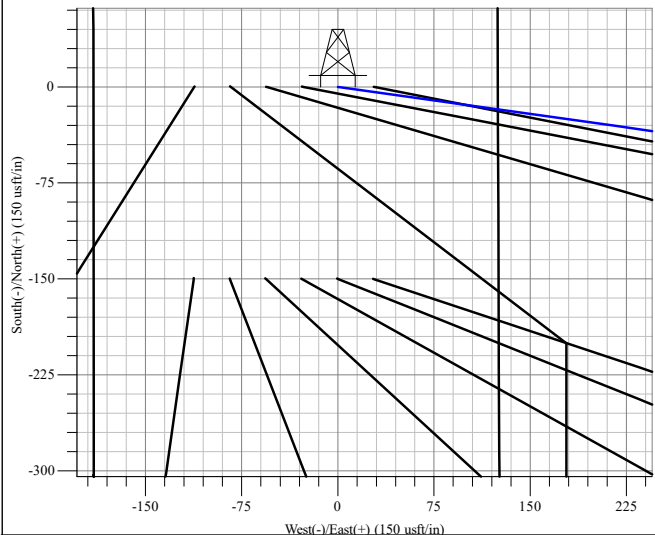
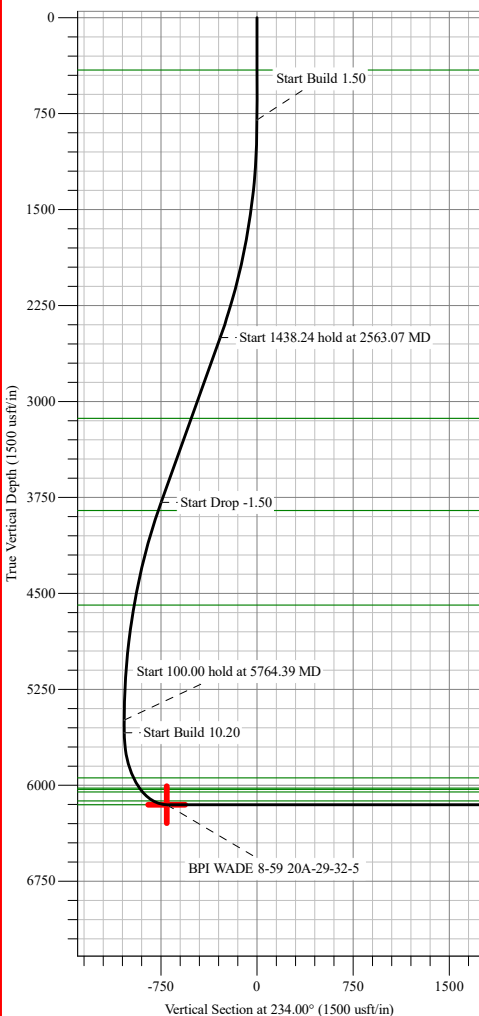
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Dep	Annotation
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	Start Build 1.50
2563.07	26.45	98.00	2501.13	-55.65	395.83	107.15	399.72	Start 1438.24 hold at 2563.07 MD
4001.31	26.45	98.00	3788.87	-144.81	1030.12	278.86	1040.25	Start Drop -1.50
5764.39	0.00	0.00	5490.00	-200.46	1425.95	386.02	1439.97	Start 100.00 hold at 5764.39 MD
5864.39	0.00	0.00	5590.00	-200.46	1425.95	386.02	1439.97	Start Build 10.20
6746.65	90.00	180.00	6151.67	-762.13	1425.95	942.82	2001.64	Start DLS 0.00 TFO -93.02
16695.45	90.00	179.93	6152.00	-10710.92	1432.23	10806.24	11950.43	Start 99.76 hold at 16695.45 MD
16795.20	90.00	179.93	6152.01	-10810.68	1432.36	10905.15	12050.19	TD at 16795.20

#### PROPOSED LOCAL COORDINATES:

SHL: 460 ft FSL & 591 ft FWL Sec 20  
BPI :300 ft FNL & 2014 ft FWL Sec 29  
EPI: 300 ft FSL & 2014 ft FWL Sec 32  
BHL: 200 ft FSL & 2014 ft FWL Sec 32

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BPI WADE 8-59 20A-29-32-5	6152.00	-764.46	1425.95	1479335.77	3415341.53	40° 38' 22.384 N 104° 0' 12.038 W	
EPI WADE 8-59 20A-29-32-5	6152.00	-10710.92	1432.23	1469389.32	3415347.81	40° 36' 44.111 N 104° 0' 14.134 W	
BHL WADE 8-59 20A-29-32-5	6152.00	-10810.76	1431.69	1469289.47	3415347.27	40° 36' 43.124 N 104° 0' 14.162 W	Point



## Survey Report



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-29-32-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4893.20usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4893.20usft
<b>Well:</b>	WADE 8-59 20A-29-32-5	<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-29-32-5		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b> 1,480,100.24 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b> 3,413,915.58 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40° 38' 30.174 N
		<b>Longitude:</b>	104° 0' 30.366 W
		<b>Ground Level:</b>	4,868.20 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/31/2009	8.63	67.43	53,508.45555811

<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>	<b>Direction (°)</b>	
	0.00	0.00	0.00	172.45	

<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>	<b>Description</b>	
0.00	16,795.20	Design #1 (Wellbore #1)	MWD	Fixed:v2:standard declination	

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)	
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	
Pierre Shale (Base of Fox Hills)										
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



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-29-32-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4893.20usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4893.20usft
<b>Well:</b>	WADE 8-59 20A-29-32-5	<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	98.00	899.99	-0.18	1.30	0.35	1.50	1.50	0.00
1,000.00	3.00	98.00	999.91	-0.73	5.18	1.40	1.50	1.50	0.00
1,100.00	4.50	98.00	1,099.69	-1.64	11.66	3.16	1.50	1.50	0.00
1,200.00	6.00	98.00	1,199.27	-2.91	20.72	5.61	1.50	1.50	0.00
1,300.00	7.50	98.00	1,298.57	-4.55	32.36	8.76	1.50	1.50	0.00
1,400.00	9.00	98.00	1,397.54	-6.55	46.57	12.61	1.50	1.50	0.00
1,500.00	10.50	98.00	1,496.09	-8.90	63.34	17.15	1.50	1.50	0.00
1,600.00	12.00	98.00	1,594.16	-11.62	82.66	22.38	1.50	1.50	0.00
1,700.00	13.50	98.00	1,691.70	-14.69	104.51	28.29	1.50	1.50	0.00
1,800.00	15.00	98.00	1,788.62	-18.12	128.89	34.89	1.50	1.50	0.00
1,900.00	16.50	98.00	1,884.86	-21.90	155.77	42.17	1.50	1.50	0.00
2,000.00	18.00	98.00	1,980.36	-26.03	185.13	50.12	1.50	1.50	0.00
2,100.00	19.50	98.00	2,075.05	-30.50	216.96	58.73	1.50	1.50	0.00
2,200.00	21.00	98.00	2,168.86	-35.32	251.23	68.01	1.50	1.50	0.00
2,300.00	22.50	98.00	2,261.74	-40.48	287.93	77.94	1.50	1.50	0.00
2,400.00	24.00	98.00	2,353.62	-45.97	327.02	88.53	1.50	1.50	0.00
2,500.00	25.50	98.00	2,444.43	-51.80	368.47	99.75	1.50	1.50	0.00
2,563.07	26.45	98.00	2,501.13	-55.65	395.83	107.15	1.50	1.50	0.00
<b>Start 1438.24 hold at 2563.07 MD</b>									
2,600.00	26.45	98.00	2,534.20	-57.93	412.11	111.56	0.00	0.00	0.00
2,700.00	26.45	98.00	2,623.73	-64.13	456.21	123.50	0.00	0.00	0.00
2,800.00	26.45	98.00	2,713.27	-70.33	500.32	135.44	0.00	0.00	0.00
2,900.00	26.45	98.00	2,802.80	-76.53	544.42	147.38	0.00	0.00	0.00
3,000.00	26.45	98.00	2,892.34	-82.73	588.52	159.32	0.00	0.00	0.00
3,100.00	26.45	98.00	2,981.87	-88.93	632.62	171.26	0.00	0.00	0.00
3,200.00	26.45	98.00	3,071.41	-95.13	676.72	183.20	0.00	0.00	0.00
3,267.67	26.45	98.00	3,132.00	-99.33	706.57	191.27	0.00	0.00	0.00
<b>Parkman</b>									
3,300.00	26.45	98.00	3,160.94	-101.33	720.83	195.13	0.00	0.00	0.00
3,400.00	26.45	98.00	3,250.48	-107.53	764.93	207.07	0.00	0.00	0.00
3,500.00	26.45	98.00	3,340.01	-113.73	809.03	219.01	0.00	0.00	0.00
3,600.00	26.45	98.00	3,429.55	-119.93	853.13	230.95	0.00	0.00	0.00
3,700.00	26.45	98.00	3,519.09	-126.13	897.23	242.89	0.00	0.00	0.00
3,800.00	26.45	98.00	3,608.62	-132.33	941.34	254.83	0.00	0.00	0.00
3,900.00	26.45	98.00	3,698.16	-138.53	985.44	266.77	0.00	0.00	0.00
4,001.31	26.45	98.00	3,788.87	-144.81	1,030.12	278.86	0.00	0.00	0.00
<b>Start Drop -1.50</b>									
4,071.51	25.39	98.00	3,852.00	-149.09	1,060.50	287.09	1.50	-1.50	0.00
<b>Sussex</b>									
4,100.00	24.97	98.00	3,877.78	-150.77	1,072.51	290.34	1.50	-1.50	0.00
4,200.00	23.47	98.00	3,968.98	-156.48	1,113.12	301.33	1.50	-1.50	0.00
4,300.00	21.97	98.00	4,061.22	-161.86	1,151.36	311.68	1.50	-1.50	0.00
4,400.00	20.47	98.00	4,154.44	-166.90	1,187.20	321.39	1.50	-1.50	0.00

## Survey Report



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-29-32-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4893.20usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4893.20usft
<b>Well:</b>	WADE 8-59 20A-29-32-5	<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)
4,500.00	18.97	98.00	4,248.58	-171.59	1,220.60	330.43	1.50	-1.50	0.00
4,600.00	17.47	98.00	4,343.56	-175.94	1,251.56	338.81	1.50	-1.50	0.00
4,700.00	15.97	98.00	4,439.34	-179.95	1,280.04	346.52	1.50	-1.50	0.00
4,800.00	14.47	98.00	4,535.83	-183.60	1,306.03	353.55	1.50	-1.50	0.00
4,857.90	13.60	98.00	4,592.00	-185.56	1,319.93	357.32	1.50	-1.50	0.00
<b>Shannon</b>									
4,900.00	12.97	98.00	4,632.97	-186.90	1,329.51	359.91	1.50	-1.50	0.00
5,000.00	11.47	98.00	4,730.71	-189.85	1,350.46	365.58	1.50	-1.50	0.00
5,100.00	9.97	98.00	4,828.96	-192.44	1,368.87	370.57	1.50	-1.50	0.00
5,200.00	8.47	98.00	4,927.67	-194.67	1,384.73	374.86	1.50	-1.50	0.00
5,300.00	6.97	98.00	5,026.76	-196.54	1,398.03	378.46	1.50	-1.50	0.00
5,400.00	5.47	98.00	5,126.17	-198.04	1,408.75	381.36	1.50	-1.50	0.00
5,500.00	3.97	98.00	5,225.83	-199.19	1,416.89	383.56	1.50	-1.50	0.00
5,600.00	2.47	98.00	5,325.66	-199.97	1,422.44	385.07	1.50	-1.50	0.00
5,700.00	0.97	98.00	5,425.62	-200.38	1,425.41	385.87	1.50	-1.50	0.00
5,764.39	0.00	0.00	5,490.00	-200.46	1,425.95	386.02	1.50	-1.50	0.00
<b>Start 100.00 hold at 5764.39 MD</b>									
5,800.00	0.00	0.00	5,525.61	-200.46	1,425.95	386.02	0.00	0.00	0.00
5,864.39	0.00	0.00	5,590.00	-200.46	1,425.95	386.02	0.00	0.00	0.00
<b>Start Build 10.20</b>									
5,900.00	3.63	180.00	5,625.59	-201.59	1,425.95	387.14	10.20	10.20	0.00
5,950.00	8.73	180.00	5,675.28	-206.97	1,425.95	392.47	10.20	10.20	0.00
6,000.00	13.83	180.00	5,724.30	-216.75	1,425.95	402.17	10.20	10.20	0.00
6,050.00	18.93	180.00	5,772.25	-230.85	1,425.95	416.14	10.20	10.20	0.00
6,100.00	24.03	180.00	5,818.76	-249.16	1,425.95	434.29	10.20	10.20	0.00
6,150.00	29.14	180.00	5,863.46	-271.53	1,425.95	456.47	10.20	10.20	0.00
6,200.00	34.24	180.00	5,906.00	-297.78	1,425.95	482.50	10.20	10.20	0.00
6,244.81	38.81	180.00	5,942.00	-324.44	1,425.95	508.93	10.20	10.20	0.00
<b>Sharon Springs Shale</b>									
6,250.00	39.34	180.00	5,946.03	-327.71	1,425.95	512.17	10.20	10.20	0.00
6,300.00	44.44	180.00	5,983.24	-361.09	1,425.95	545.25	10.20	10.20	0.00
6,350.00	49.54	180.00	6,017.33	-397.63	1,425.95	581.48	10.20	10.20	0.00
6,357.24	50.28	180.00	6,022.00	-403.18	1,425.95	586.98	10.20	10.20	0.00
<b>Niobrara Formation</b>									
6,373.17	51.90	180.00	6,032.00	-415.56	1,425.95	599.26	10.20	10.20	0.00
<b>Niobrara A Chalk</b>									
6,400.00	54.64	180.00	6,048.05	-437.07	1,425.95	620.57	10.20	10.20	0.00
6,406.89	55.34	180.00	6,052.00	-442.71	1,425.95	626.17	10.20	10.20	0.00
<b>Niobrara A Landing Point</b>									
6,450.00	59.74	180.00	6,075.13	-479.08	1,425.95	662.22	10.20	10.20	0.00
6,500.00	64.84	180.00	6,098.38	-523.33	1,425.95	706.09	10.20	10.20	0.00
6,550.00	69.94	180.00	6,117.59	-569.47	1,425.95	751.83	10.20	10.20	0.00
6,563.28	71.29	180.00	6,122.00	-582.00	1,425.95	764.25	10.20	10.20	0.00
<b>Niobrara B Chalk</b>									

## Survey Report



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-29-32-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4893.20usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4893.20usft
<b>Well:</b>	WADE 8-59 20A-29-32-5	<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)
6,600.00	75.04	180.00	6,132.63	-617.14	1,425.95	799.08	10.20	10.20	0.00
6,650.00	80.14	180.00	6,143.37	-665.95	1,425.95	847.48	10.20	10.20	0.00
6,700.00	85.24	180.00	6,149.73	-715.53	1,425.95	896.62	10.20	10.20	0.00
6,746.65	90.00	180.00	6,151.67	-762.13	1,425.95	942.82	10.20	10.20	0.00
<b>Start DLS 0.00 TFO -93.02</b>									
6,748.99	90.00	180.00	6,151.67	-764.46	1,425.95	945.13	0.00	0.00	0.00
<b>BPI WADE 8-59 20A-29-32-5</b>									
6,800.00	90.00	180.00	6,151.67	-815.48	1,425.95	995.70	0.00	0.00	0.00
6,900.00	90.00	180.00	6,151.67	-915.48	1,425.95	1,094.84	0.00	0.00	0.00
7,000.00	90.00	180.00	6,151.67	-1,015.48	1,425.95	1,193.97	0.00	0.00	0.00
7,100.00	90.00	180.00	6,151.67	-1,115.48	1,425.95	1,293.11	0.00	0.00	0.00
7,200.00	90.00	180.00	6,151.67	-1,215.48	1,425.96	1,392.24	0.00	0.00	0.00
7,300.00	90.00	180.00	6,151.67	-1,315.48	1,425.97	1,491.37	0.00	0.00	0.00
7,400.00	90.00	180.00	6,151.67	-1,415.48	1,425.97	1,590.51	0.00	0.00	0.00
7,500.00	90.00	179.99	6,151.67	-1,515.48	1,425.98	1,689.64	0.00	0.00	0.00
7,600.00	90.00	179.99	6,151.67	-1,615.48	1,425.99	1,788.78	0.00	0.00	0.00
7,700.00	90.00	179.99	6,151.67	-1,715.48	1,426.00	1,887.91	0.00	0.00	0.00
7,800.00	90.00	179.99	6,151.67	-1,815.48	1,426.02	1,987.05	0.00	0.00	0.00
7,900.00	90.00	179.99	6,151.67	-1,915.48	1,426.03	2,086.19	0.00	0.00	0.00
8,000.00	90.00	179.99	6,151.67	-2,015.48	1,426.05	2,185.32	0.00	0.00	0.00
8,100.00	90.00	179.99	6,151.67	-2,115.48	1,426.06	2,284.46	0.00	0.00	0.00
8,200.00	90.00	179.99	6,151.68	-2,215.48	1,426.08	2,383.59	0.00	0.00	0.00
8,300.00	90.00	179.99	6,151.68	-2,315.48	1,426.10	2,482.73	0.00	0.00	0.00
8,400.00	90.00	179.99	6,151.68	-2,415.48	1,426.12	2,581.87	0.00	0.00	0.00
8,500.00	90.00	179.99	6,151.68	-2,515.48	1,426.14	2,681.00	0.00	0.00	0.00
8,600.00	90.00	179.99	6,151.68	-2,615.48	1,426.16	2,780.14	0.00	0.00	0.00
8,700.00	90.00	179.99	6,151.68	-2,715.48	1,426.19	2,879.28	0.00	0.00	0.00
8,800.00	90.00	179.99	6,151.68	-2,815.48	1,426.21	2,978.41	0.00	0.00	0.00
8,900.00	90.00	179.98	6,151.68	-2,915.48	1,426.24	3,077.55	0.00	0.00	0.00
9,000.00	90.00	179.98	6,151.69	-3,015.48	1,426.27	3,176.69	0.00	0.00	0.00
9,100.00	90.00	179.98	6,151.69	-3,115.48	1,426.30	3,275.82	0.00	0.00	0.00
9,200.00	90.00	179.98	6,151.69	-3,215.48	1,426.33	3,374.96	0.00	0.00	0.00
9,300.00	90.00	179.98	6,151.69	-3,315.48	1,426.36	3,474.10	0.00	0.00	0.00
9,400.00	90.00	179.98	6,151.69	-3,415.48	1,426.39	3,573.24	0.00	0.00	0.00
9,500.00	90.00	179.98	6,151.69	-3,515.48	1,426.43	3,672.38	0.00	0.00	0.00
9,600.00	90.00	179.98	6,151.70	-3,615.48	1,426.46	3,771.51	0.00	0.00	0.00
9,700.00	90.00	179.98	6,151.70	-3,715.48	1,426.50	3,870.65	0.00	0.00	0.00
9,800.00	90.00	179.98	6,151.70	-3,815.48	1,426.54	3,969.79	0.00	0.00	0.00
9,900.00	90.00	179.98	6,151.70	-3,915.48	1,426.58	4,068.93	0.00	0.00	0.00
10,000.00	90.00	179.98	6,151.70	-4,015.48	1,426.62	4,168.07	0.00	0.00	0.00
10,100.00	90.00	179.98	6,151.71	-4,115.48	1,426.66	4,267.21	0.00	0.00	0.00
10,200.00	90.00	179.97	6,151.71	-4,215.48	1,426.70	4,366.35	0.00	0.00	0.00
10,300.00	90.00	179.97	6,151.71	-4,315.48	1,426.75	4,465.49	0.00	0.00	0.00
10,400.00	90.00	179.97	6,151.71	-4,415.48	1,426.79	4,564.63	0.00	0.00	0.00

## Survey Report



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-29-32-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4893.20usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4893.20usft
<b>Well:</b>	WADE 8-59 20A-29-32-5	<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)
10,500.00	90.00	179.97	6,151.72	-4,515.48	1,426.84	4,663.77	0.00	0.00	0.00
10,600.00	90.00	179.97	6,151.72	-4,615.48	1,426.89	4,762.91	0.00	0.00	0.00
10,700.00	90.00	179.97	6,151.72	-4,715.48	1,426.94	4,862.05	0.00	0.00	0.00
10,800.00	90.00	179.97	6,151.72	-4,815.48	1,426.99	4,961.19	0.00	0.00	0.00
10,900.00	90.00	179.97	6,151.73	-4,915.48	1,427.04	5,060.33	0.00	0.00	0.00
11,000.00	90.00	179.97	6,151.73	-5,015.48	1,427.09	5,159.47	0.00	0.00	0.00
11,100.00	90.00	179.97	6,151.73	-5,115.48	1,427.15	5,258.61	0.00	0.00	0.00
11,200.00	90.00	179.97	6,151.73	-5,215.48	1,427.20	5,357.75	0.00	0.00	0.00
11,300.00	90.00	179.97	6,151.74	-5,315.48	1,427.26	5,456.89	0.00	0.00	0.00
11,400.00	90.00	179.97	6,151.74	-5,415.48	1,427.32	5,556.03	0.00	0.00	0.00
11,500.00	90.00	179.97	6,151.74	-5,515.48	1,427.38	5,655.17	0.00	0.00	0.00
11,600.00	90.00	179.96	6,151.75	-5,615.48	1,427.44	5,754.32	0.00	0.00	0.00
11,700.00	90.00	179.96	6,151.75	-5,715.48	1,427.50	5,853.46	0.00	0.00	0.00
11,800.00	90.00	179.96	6,151.75	-5,815.48	1,427.57	5,952.60	0.00	0.00	0.00
11,900.00	90.00	179.96	6,151.76	-5,915.48	1,427.63	6,051.74	0.00	0.00	0.00
12,000.00	90.00	179.96	6,151.76	-6,015.48	1,427.70	6,150.88	0.00	0.00	0.00
12,100.00	90.00	179.96	6,151.76	-6,115.48	1,427.77	6,250.03	0.00	0.00	0.00
12,200.00	90.00	179.96	6,151.77	-6,215.48	1,427.83	6,349.17	0.00	0.00	0.00
12,300.00	90.00	179.96	6,151.77	-6,315.48	1,427.90	6,448.31	0.00	0.00	0.00
12,400.00	90.00	179.96	6,151.78	-6,415.48	1,427.97	6,547.45	0.00	0.00	0.00
12,500.00	90.00	179.96	6,151.78	-6,515.48	1,428.05	6,646.60	0.00	0.00	0.00
12,600.00	90.00	179.96	6,151.78	-6,615.48	1,428.12	6,745.74	0.00	0.00	0.00
12,700.00	90.00	179.96	6,151.79	-6,715.48	1,428.20	6,844.88	0.00	0.00	0.00
12,800.00	90.00	179.96	6,151.79	-6,815.48	1,428.27	6,944.03	0.00	0.00	0.00
12,900.00	90.00	179.96	6,151.80	-6,915.48	1,428.35	7,043.17	0.00	0.00	0.00
13,000.00	90.00	179.95	6,151.80	-7,015.48	1,428.43	7,142.32	0.00	0.00	0.00
13,100.00	90.00	179.95	6,151.80	-7,115.48	1,428.51	7,241.46	0.00	0.00	0.00
13,200.00	90.00	179.95	6,151.81	-7,215.48	1,428.59	7,340.60	0.00	0.00	0.00
13,300.00	90.00	179.95	6,151.81	-7,315.48	1,428.67	7,439.75	0.00	0.00	0.00
13,400.00	90.00	179.95	6,151.82	-7,415.48	1,428.76	7,538.89	0.00	0.00	0.00
13,500.00	90.00	179.95	6,151.82	-7,515.48	1,428.84	7,638.04	0.00	0.00	0.00
13,600.00	90.00	179.95	6,151.83	-7,615.48	1,428.93	7,737.18	0.00	0.00	0.00
13,700.00	90.00	179.95	6,151.83	-7,715.47	1,429.02	7,836.33	0.00	0.00	0.00
13,800.00	90.00	179.95	6,151.84	-7,815.47	1,429.10	7,935.47	0.00	0.00	0.00
13,900.00	90.00	179.95	6,151.84	-7,915.47	1,429.19	8,034.62	0.00	0.00	0.00
14,000.00	90.00	179.95	6,151.84	-8,015.47	1,429.29	8,133.76	0.00	0.00	0.00
14,100.00	90.00	179.95	6,151.85	-8,115.47	1,429.38	8,232.91	0.00	0.00	0.00
14,200.00	90.00	179.95	6,151.85	-8,215.47	1,429.47	8,332.06	0.00	0.00	0.00
14,300.00	90.00	179.95	6,151.86	-8,315.47	1,429.57	8,431.20	0.00	0.00	0.00
14,400.00	90.00	179.94	6,151.86	-8,415.47	1,429.66	8,530.35	0.00	0.00	0.00
14,500.00	90.00	179.94	6,151.87	-8,515.47	1,429.76	8,629.50	0.00	0.00	0.00
14,600.00	90.00	179.94	6,151.88	-8,615.47	1,429.86	8,728.64	0.00	0.00	0.00
14,700.00	90.00	179.94	6,151.88	-8,715.47	1,429.96	8,827.79	0.00	0.00	0.00

## Survey Report



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-29-32-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4893.20usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4893.20usft
<b>Well:</b>	WADE 8-59 20A-29-32-5	<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)
14,800.00	90.00	179.94	6,151.89	-8,815.47	1,430.06	8,926.94	0.00	0.00	0.00
14,900.00	90.00	179.94	6,151.89	-8,915.47	1,430.17	9,026.08	0.00	0.00	0.00
15,000.00	90.00	179.94	6,151.90	-9,015.47	1,430.27	9,125.23	0.00	0.00	0.00
15,100.00	90.00	179.94	6,151.90	-9,115.47	1,430.38	9,224.38	0.00	0.00	0.00
15,200.00	90.00	179.94	6,151.91	-9,215.47	1,430.48	9,323.53	0.00	0.00	0.00
15,300.00	90.00	179.94	6,151.91	-9,315.47	1,430.59	9,422.67	0.00	0.00	0.00
15,400.00	90.00	179.94	6,151.92	-9,415.47	1,430.70	9,521.82	0.00	0.00	0.00
15,500.00	90.00	179.94	6,151.93	-9,515.47	1,430.81	9,620.97	0.00	0.00	0.00
15,600.00	90.00	179.94	6,151.93	-9,615.47	1,430.92	9,720.12	0.00	0.00	0.00
15,700.00	90.00	179.93	6,151.94	-9,715.47	1,431.04	9,819.27	0.00	0.00	0.00
15,800.00	90.00	179.93	6,151.94	-9,815.47	1,431.15	9,918.41	0.00	0.00	0.00
15,900.00	90.00	179.93	6,151.95	-9,915.47	1,431.26	10,017.56	0.00	0.00	0.00
16,000.00	90.00	179.93	6,151.96	-10,015.47	1,431.38	10,116.71	0.00	0.00	0.00
16,100.00	90.00	179.93	6,151.96	-10,115.47	1,431.50	10,215.86	0.00	0.00	0.00
16,200.00	90.00	179.93	6,151.97	-10,215.47	1,431.62	10,315.01	0.00	0.00	0.00
16,300.00	90.00	179.93	6,151.97	-10,315.47	1,431.74	10,414.16	0.00	0.00	0.00
16,400.00	90.00	179.93	6,151.98	-10,415.47	1,431.86	10,513.31	0.00	0.00	0.00
16,500.00	90.00	179.93	6,151.99	-10,515.47	1,431.99	10,612.46	0.00	0.00	0.00
16,600.00	90.00	179.93	6,151.99	-10,615.47	1,432.11	10,711.61	0.00	0.00	0.00
16,695.45	90.00	179.93	6,152.00	-10,710.92	1,432.23	10,806.24	0.00	0.00	0.00
<b>Start 99.76 hold at 16695.45 MD - Niobrara B Landing Point - EPI WADE 8-59 20A-29-32-5</b>									
16,700.00	90.00	179.93	6,152.00	-10,715.47	1,432.24	10,810.76	0.00	0.00	0.00
16,795.20	90.00	179.93	6,152.01	-10,810.68	1,432.36	10,905.15	0.00	0.00	0.00
<b>TD at 16795.20 - BHL WADE 8-59 20A-29-32-5</b>									

## Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL WADE 8-59 20A- - plan misses target center by 0.67usft at 16795.20usft MD (6152.01 TVD, -10810.68 N, 1432.36 E) - Point	0.00	0.00	6,152.00	-10,810.76	1,431.69	1,469,289.47	3,415,347.27	40° 36' 43.124 N	104° 0' 14.162 W
BPI WADE 8-59 20A- - plan misses target center by 0.33usft at 6748.99usft MD (6151.67 TVD, -764.46 N, 1425.95 E) - Point	0.00	0.00	6,152.00	-764.46	1,425.95	1,479,335.78	3,415,341.52	40° 38' 22.384 N	104° 0' 12.038 W
EPI WADE 8-59 20A- - plan hits target center - Point	0.00	0.00	6,152.00	-10,710.92	1,432.23	1,469,389.32	3,415,347.81	40° 36' 44.111 N	104° 0' 14.134 W



## Survey Report



<b>Company:</b>	Bison Oil & Gas II, LLC	<b>Local Co-ordinate Reference:</b>	Well WADE 8-59 20A-29-32-5
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB 25 @ 4893.20usft
<b>Site:</b>	WADE 8-59 20A	<b>MD Reference:</b>	KB 25 @ 4893.20usft
<b>Well:</b>	WADE 8-59 20A-29-32-5	<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)			
3,267.67	3,132.00	Parkman			
4,071.51	3,852.00	Sussex			
4,857.90	4,592.00	Shannon			
6,244.81	5,942.00	Sharon Springs Shale			
6,357.24	6,022.00	Niobrara Formation			
6,373.17	6,032.00	Niobrara A Chalk			
6,406.89	6,052.00	Niobrara A Landing Point			
6,563.28	6,122.00	Niobrara B Chalk			
16,695.45	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
2563	2501	-56	396	Start 1438.24 hold at 2563.07 MD
4001	3789	-145	1030	Start Drop -1.50
5764	5490	-200	1426	Start 100.00 hold at 5764.39 MD
5864	5590	-200	1426	Start Build 10.20
6747	6152	-762	1426	Start DLS 0.00 TFO -93.02
16,695	6152	-10,711	1432	Start 99.76 hold at 16695.45 MD
16,795	6152	-10,811	1432	TD at 16795.20

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