



# **Ursa Operating Company, LLC**

**Rockies Region**

**Monument Ridge B**

**Monument Ridge B 31C-17-07-95**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**12 June, 2015**



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Monument Ridge B 31C-17-07-95
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	Monument Ridge B 31C-17-07-95 @ 5718.8usft (PLAN KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Monument Ridge B 31C-17-07-95 @ 5718.8usft (PLAN KB)
<b>Site:</b>	Monument Ridge B	<b>North Reference:</b>	True
<b>Well:</b>	Monument Ridge B 31C-17-07-95	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	Rockies Region		
<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 Central Zone		

Site		Monument Ridge B			
Site Position:		Northing:	1,596,716.55 usft	Latitude:	39° 26' 40.501 N
From:	Lat/Long	Easting:	2,287,433.43 usft	Longitude:	108° 1' 24.665 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.59 °

Well	Monument Ridge B 31C-17-07-95, SHL: 39.447476056 -108.012276363					
Well Position	+N/-S	1,053.7 usft	Northing:	1,597,681.67 usft	Latitude:	39° 26' 50.914 N
	+E/-W	3,174.6 usft	Easting:	2,290,636.09 usft	Longitude:	108° 0' 44.195 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,718.8 usft	Ground Level:	5,701.8 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>
	IGRF2010	6/7/2015	9.84	65.59	51,823

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE		<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	224.12	

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (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	0.0	0.0	0.00	0.00	0.00	0.00	
450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,446.9	34.89	224.12	1,386.4	-211.3	-204.9	3.50	3.50	0.00	224.12	
5,015.6	34.89	224.12	4,313.6	-1,676.7	-1,626.1	0.00	0.00	0.00	0.00	
6,012.5	0.00	0.00	5,250.0	-1,887.9	-1,831.0	3.50	-3.50	0.00	180.00	
7,750.3	0.00	0.00	6,987.8	-1,887.9	-1,831.0	0.00	0.00	0.00	0.00	

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Monument Ridge B 31C-17-07-95 @ 5718.8usft (PLAN KB)
<b>Site:</b>	Monument Ridge B	<b>North Reference:</b>	True
<b>Well:</b>	Monument Ridge B 31C-17-07-95	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
0.1	0.00	0.00	0.1	0.0	0.0	0.0	0.00	0.00	0.00	
SHL: 39.447476056, -108.012276363										
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	0.00	
Start Build 3.50										
500.0	1.75	224.12	500.0	-0.5	-0.5	0.8	3.50	3.50	0.00	
600.0	5.25	224.12	599.8	-4.9	-4.8	6.9	3.50	3.50	0.00	
700.0	8.75	224.12	699.0	-13.7	-13.3	19.1	3.50	3.50	0.00	
800.0	12.25	224.12	797.3	-26.8	-25.9	37.3	3.50	3.50	0.00	
900.0	15.75	224.12	894.4	-44.1	-42.8	61.5	3.50	3.50	0.00	
1,000.0	19.25	224.12	989.7	-65.7	-63.7	91.5	3.50	3.50	0.00	
1,100.0	22.75	224.12	1,083.1	-91.4	-88.7	127.4	3.50	3.50	0.00	
1,200.0	26.25	224.12	1,174.0	-121.2	-117.5	168.8	3.50	3.50	0.00	
1,300.0	29.75	224.12	1,262.3	-154.9	-150.2	215.8	3.50	3.50	0.00	
1,400.0	33.25	224.12	1,347.6	-192.4	-186.6	268.0	3.50	3.50	0.00	
1,446.9	34.89	224.12	1,386.4	-211.3	-204.9	294.3	3.50	3.50	0.00	
Start 3568.7 hold at 1446.9 MD										
1,500.0	34.89	224.12	1,430.0	-233.0	-226.0	324.7	0.00	0.00	0.00	
1,600.0	34.89	224.12	1,512.0	-274.1	-265.9	381.9	0.00	0.00	0.00	
1,700.0	34.89	224.12	1,594.0	-315.2	-305.7	439.1	0.00	0.00	0.00	
1,800.0	34.89	224.12	1,676.0	-356.2	-345.5	496.3	0.00	0.00	0.00	
1,829.2	34.89	224.12	1,700.0	-368.2	-357.1	513.0	0.00	0.00	0.00	
Surface Casing										
1,900.0	34.89	224.12	1,758.1	-397.3	-385.3	553.5	0.00	0.00	0.00	
2,000.0	34.89	224.12	1,840.1	-438.4	-425.2	610.7	0.00	0.00	0.00	
2,100.0	34.89	224.12	1,922.1	-479.4	-465.0	667.9	0.00	0.00	0.00	
2,200.0	34.89	224.12	2,004.1	-520.5	-504.8	725.1	0.00	0.00	0.00	
2,300.0	34.89	224.12	2,086.2	-561.6	-544.6	782.3	0.00	0.00	0.00	
2,400.0	34.89	224.12	2,168.2	-602.6	-584.5	839.5	0.00	0.00	0.00	
2,500.0	34.89	224.12	2,250.2	-643.7	-624.3	896.7	0.00	0.00	0.00	
2,600.0	34.89	224.12	2,332.2	-684.7	-664.1	953.9	0.00	0.00	0.00	
2,700.0	34.89	224.12	2,414.2	-725.8	-703.9	1,011.1	0.00	0.00	0.00	
2,800.0	34.89	224.12	2,496.3	-766.9	-743.8	1,068.3	0.00	0.00	0.00	
2,900.0	34.89	224.12	2,578.3	-807.9	-783.6	1,125.5	0.00	0.00	0.00	
3,000.0	34.89	224.12	2,660.3	-849.0	-823.4	1,182.7	0.00	0.00	0.00	
3,100.0	34.89	224.12	2,742.3	-890.1	-863.2	1,239.9	0.00	0.00	0.00	
3,200.0	34.89	224.12	2,824.4	-931.1	-903.1	1,297.1	0.00	0.00	0.00	
3,300.0	34.89	224.12	2,906.4	-972.2	-942.9	1,354.3	0.00	0.00	0.00	
3,400.0	34.89	224.12	2,988.4	-1,013.3	-982.7	1,411.5	0.00	0.00	0.00	
3,500.0	34.89	224.12	3,070.4	-1,054.3	-1,022.5	1,468.7	0.00	0.00	0.00	
3,600.0	34.89	224.12	3,152.4	-1,095.4	-1,062.4	1,525.9	0.00	0.00	0.00	
3,700.0	34.89	224.12	3,234.5	-1,136.4	-1,102.2	1,583.1	0.00	0.00	0.00	
3,800.0	34.89	224.12	3,316.5	-1,177.5	-1,142.0	1,640.3	0.00	0.00	0.00	
3,900.0	34.89	224.12	3,398.5	-1,218.6	-1,181.8	1,697.5	0.00	0.00	0.00	
4,000.0	34.89	224.12	3,480.5	-1,259.6	-1,221.7	1,754.7	0.00	0.00	0.00	
4,100.0	34.89	224.12	3,562.6	-1,300.7	-1,261.5	1,812.0	0.00	0.00	0.00	
4,155.2	34.89	224.12	3,607.8	-1,323.3	-1,283.5	1,843.5	0.00	0.00	0.00	

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<b>Well:</b>	Monument Ridge B 31C-17-07-95	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

## 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>Williams Fork</b>									
4,200.0	34.89	224.12	3,644.6	-1,341.8	-1,301.3	1,869.2	0.00	0.00	0.00
4,300.0	34.89	224.12	3,726.6	-1,382.8	-1,341.1	1,926.4	0.00	0.00	0.00
4,400.0	34.89	224.12	3,808.6	-1,423.9	-1,381.0	1,983.6	0.00	0.00	0.00
4,500.0	34.89	224.12	3,890.7	-1,464.9	-1,420.8	2,040.8	0.00	0.00	0.00
4,600.0	34.89	224.12	3,972.7	-1,506.0	-1,460.6	2,098.0	0.00	0.00	0.00
4,700.0	34.89	224.12	4,054.7	-1,547.1	-1,500.4	2,155.2	0.00	0.00	0.00
4,800.0	34.89	224.12	4,136.7	-1,588.1	-1,540.3	2,212.4	0.00	0.00	0.00
4,900.0	34.89	224.12	4,218.7	-1,629.2	-1,580.1	2,269.6	0.00	0.00	0.00
5,000.0	34.89	224.12	4,300.8	-1,670.3	-1,619.9	2,326.8	0.00	0.00	0.00
5,015.6	34.89	224.12	4,313.6	-1,676.7	-1,626.1	2,335.7	0.00	0.00	0.00
<b>Start Drop -3.50</b>									
5,100.0	31.94	224.12	4,384.0	-1,710.0	-1,658.5	2,382.2	3.50	-3.50	0.00
5,200.0	28.44	224.12	4,470.4	-1,746.1	-1,693.5	2,432.5	3.50	-3.50	0.00
5,300.0	24.94	224.12	4,559.8	-1,778.4	-1,724.8	2,477.4	3.50	-3.50	0.00
5,400.0	21.44	224.12	4,651.7	-1,806.6	-1,752.2	2,516.7	3.50	-3.50	0.00
5,436.5	20.16	224.12	4,685.8	-1,815.9	-1,761.2	2,529.7	3.50	-3.50	0.00
<b>Top of gas</b>									
5,500.0	17.94	224.12	4,745.8	-1,830.8	-1,775.6	2,550.4	3.50	-3.50	0.00
5,600.0	14.44	224.12	4,841.8	-1,850.8	-1,795.0	2,578.3	3.50	-3.50	0.00
5,700.0	10.94	224.12	4,939.4	-1,866.6	-1,810.3	2,600.3	3.50	-3.50	0.00
5,800.0	7.44	224.12	5,038.1	-1,878.0	-1,821.4	2,616.2	3.50	-3.50	0.00
5,900.0	3.94	224.12	5,137.6	-1,885.2	-1,828.3	2,626.1	3.50	-3.50	0.00
6,000.0	0.44	224.12	5,237.5	-1,887.9	-1,831.0	2,630.0	3.50	-3.50	0.00
6,012.5	0.00	0.00	5,250.0	-1,887.9	-1,831.0	2,630.0	3.50	-3.50	0.00
<b>Start 1737.8 hold at 6012.5 MD - Back to Vertical</b>									
6,100.0	0.00	0.00	5,337.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
6,200.0	0.00	0.00	5,437.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
6,300.0	0.00	0.00	5,537.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
6,400.0	0.00	0.00	5,637.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
6,500.0	0.00	0.00	5,737.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
6,600.0	0.00	0.00	5,837.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
6,700.0	0.00	0.00	5,937.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
6,750.3	0.00	0.00	5,987.8	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
<b>Cameo</b>									
6,800.0	0.00	0.00	6,037.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,137.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,237.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
7,100.0	0.00	0.00	6,337.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
7,200.0	0.00	0.00	6,437.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
7,300.0	0.00	0.00	6,537.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
7,400.0	0.00	0.00	6,637.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
7,450.3	0.00	0.00	6,687.8	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
<b>Rollins</b>									
7,500.0	0.00	0.00	6,737.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
7,600.0	0.00	0.00	6,837.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
7,700.0	0.00	0.00	6,937.5	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
7,750.2	0.00	0.00	6,987.7	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
<b>BHL: 39.4422926, -108.0187598</b>									
7,750.3	0.00	0.00	6,987.8	-1,887.9	-1,831.0	2,630.0	0.00	0.00	0.00
<b>TD at 7750.3</b>									

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<b>Well:</b>	Monument Ridge B 31C-17-07-95	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Monument Ridge B-31C	0.00	0.00	4,685.8	-1,887.9	-1,831.0	1,595,845.09	2,288,753.56	39° 26' 32.253 N	108° 1' 7.535 W
- plan misses target center by 94.5usft at 5469.3usft MD (4716.6 TVD, -1823.8 N, -1768.8 E)									
- Rectangle (sides W100.0 H40.0 D2,302.0)									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
4,155.2	3,607.8	Williams Fork		0.00		
5,436.5	4,685.8	Top of gas		0.00		
6,750.3	5,987.8	Cameo		0.00		
7,450.3	6,687.8	Rollins		0.00		
7,750.3	6,987.8	TD		0.00		

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
0.1	0.1	0.0	0.0	SHL: 39.447476056, -108.012276363
450.0	450.0	0.0	0.0	Start Build 3.50
1,446.9	1,386.4	-211.3	-204.9	Start 3568.7 hold at 1446.9 MD
1,829.2	1,700.0	-368.2	-357.1	Surface Casing
5,015.6	4,313.6	-1,676.7	-1,626.1	Start Drop -3.50
6,012.5	5,250.0	-1,887.9	-1,831.0	Start 1737.8 hold at 6012.5 MD
6,012.5	5,250.0	-1,887.9	-1,831.0	Back to Vertical
7,750.2	6,987.7	-1,887.9	-1,831.0	BHL: 39.4422926, -108.0187598
7,750.3	6,987.8	-1,887.9	-1,831.0	TD at 7750.3

