



# **Ursa Operating Company, LLC**

**Rockies Region  
Monument Ridge  
BAT 24C-18-07-95**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**23 February, 2015**



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Monument Ridge 24C-18-07-95
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	Monument Ridge 24C-18-07-95 @ 5458.2usft (Capstar 321)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Monument Ridge 24C-18-07-95 @ 5458.2usft (Capstar 321)
<b>Site:</b>	Monument Ridge	<b>North Reference:</b>	True
<b>Well:</b>	Monument Ridge 24C-18-07-95	<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			
Site Position:		Northing:	1,592,015.86 usft	Latitude:	39° 25' 53.266 N
From:	Lat/Long	Easting:	2,284,550.92 usft	Longitude:	108° 1' 59.725 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.60 °

Well	Monument Ridge 24C-18-07-95, SHL: 39° 25' 51.956 -108° 1' 59.675					
Well Position	+N/-S	-132.5 usft	Northing:	1,591,883.27 usft	Latitude:	39° 25' 51.956 N
	+E/-W	4.0 usft	Easting:	2,284,551.18 usft	Longitude:	108° 1' 59.675 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,458.2 usft	Ground Level:	5,441.2 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	2/21/2015	9.89	65.58	51,842

<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	276.27	

<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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,183.9	34.44	276.27	1,125.7	31.3	-285.1	3.50	3.50	0.00	276.27	
4,524.9	34.44	276.27	3,881.3	237.8	-2,163.1	0.00	0.00	0.00	0.00	
5,508.8	0.00	0.00	4,807.0	269.2	-2,448.3	3.50	-3.50	0.00	180.00	Monument 24C-18-07
7,127.0	0.00	0.00	6,425.2	269.2	-2,448.3	0.00	0.00	0.00	0.00	

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Monument Ridge 24C-18-07-95
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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Monument Ridge 24C-18-07-95 @ 5458.2usft (Capstar 321)
<b>Site:</b>	Monument Ridge	<b>North Reference:</b>	True
<b>Well:</b>	Monument Ridge 24C-18-07-95	<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	
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	
Start Build 3.50										
300.0	3.50	276.27	299.9	0.3	-3.0	3.1	3.50	3.50	0.00	
400.0	7.00	276.27	399.5	1.3	-12.1	12.2	3.50	3.50	0.00	
500.0	10.50	276.27	498.3	3.0	-27.2	27.4	3.50	3.50	0.00	
600.0	14.00	276.27	596.0	5.3	-48.3	48.6	3.50	3.50	0.00	
700.0	17.50	276.27	692.3	8.3	-75.3	75.8	3.50	3.50	0.00	
800.0	21.00	276.27	786.7	11.9	-108.1	108.7	3.50	3.50	0.00	
900.0	24.50	276.27	878.9	16.1	-146.5	147.4	3.50	3.50	0.00	
1,000.0	28.00	276.27	968.5	20.9	-190.5	191.6	3.50	3.50	0.00	
1,100.0	31.50	276.27	1,055.3	26.4	-239.8	241.2	3.50	3.50	0.00	
1,183.9	34.44	276.27	1,125.7	31.3	-285.1	286.9	3.50	3.50	0.00	
Start 3341.1 hold at 1183.9 MD										
1,200.0	34.44	276.27	1,139.0	32.3	-294.2	296.0	0.00	0.00	0.00	
1,300.0	34.44	276.27	1,221.5	38.5	-350.4	352.5	0.00	0.00	0.00	
1,400.0	34.44	276.27	1,304.0	44.7	-406.6	409.1	0.00	0.00	0.00	
1,500.0	34.44	276.27	1,386.4	50.9	-462.8	465.6	0.00	0.00	0.00	
1,600.0	34.44	276.27	1,468.9	57.1	-519.0	522.2	0.00	0.00	0.00	
1,700.0	34.44	276.27	1,551.4	63.2	-575.3	578.7	0.00	0.00	0.00	
1,800.0	34.44	276.27	1,633.9	69.4	-631.5	635.3	0.00	0.00	0.00	
1,880.2	34.44	276.27	1,700.0	74.4	-676.5	680.6	0.00	0.00	0.00	
Surface Casing										
1,900.0	34.44	276.27	1,716.3	75.6	-687.7	691.8	0.00	0.00	0.00	
2,000.0	34.44	276.27	1,798.8	81.8	-743.9	748.4	0.00	0.00	0.00	
2,100.0	34.44	276.27	1,881.3	88.0	-800.1	804.9	0.00	0.00	0.00	
2,200.0	34.44	276.27	1,963.8	94.1	-856.3	861.5	0.00	0.00	0.00	
2,300.0	34.44	276.27	2,046.2	100.3	-912.5	918.0	0.00	0.00	0.00	
2,400.0	34.44	276.27	2,128.7	106.5	-968.7	974.6	0.00	0.00	0.00	
2,500.0	34.44	276.27	2,211.2	112.7	-1,024.9	1,031.1	0.00	0.00	0.00	
2,600.0	34.44	276.27	2,293.7	118.9	-1,081.1	1,087.6	0.00	0.00	0.00	
2,700.0	34.44	276.27	2,376.2	125.0	-1,137.3	1,144.2	0.00	0.00	0.00	
2,800.0	34.44	276.27	2,458.6	131.2	-1,193.6	1,200.7	0.00	0.00	0.00	
2,900.0	34.44	276.27	2,541.1	137.4	-1,249.8	1,257.3	0.00	0.00	0.00	
3,000.0	34.44	276.27	2,623.6	143.6	-1,306.0	1,313.8	0.00	0.00	0.00	
3,100.0	34.44	276.27	2,706.1	149.8	-1,362.2	1,370.4	0.00	0.00	0.00	
3,200.0	34.44	276.27	2,788.5	155.9	-1,418.4	1,426.9	0.00	0.00	0.00	
3,300.0	34.44	276.27	2,871.0	162.1	-1,474.6	1,483.5	0.00	0.00	0.00	
3,400.0	34.44	276.27	2,953.5	168.3	-1,530.8	1,540.0	0.00	0.00	0.00	
3,500.0	34.44	276.27	3,036.0	174.5	-1,587.0	1,596.6	0.00	0.00	0.00	
3,600.0	34.44	276.27	3,118.4	180.7	-1,643.2	1,653.1	0.00	0.00	0.00	
3,700.0	34.44	276.27	3,200.9	186.8	-1,699.4	1,709.7	0.00	0.00	0.00	
3,744.0	34.44	276.27	3,237.2	189.6	-1,724.2	1,734.5	0.00	0.00	0.00	
Williams Fork										
3,800.0	34.44	276.27	3,283.4	193.0	-1,755.6	1,766.2	0.00	0.00	0.00	
3,900.0	34.44	276.27	3,365.9	199.2	-1,811.8	1,822.8	0.00	0.00	0.00	
4,000.0	34.44	276.27	3,448.3	205.4	-1,868.1	1,879.3	0.00	0.00	0.00	
4,100.0	34.44	276.27	3,530.8	211.6	-1,924.3	1,935.9	0.00	0.00	0.00	
4,200.0	34.44	276.27	3,613.3	217.7	-1,980.5	1,992.4	0.00	0.00	0.00	
4,300.0	34.44	276.27	3,695.8	223.9	-2,036.7	2,049.0	0.00	0.00	0.00	
4,400.0	34.44	276.27	3,778.3	230.1	-2,092.9	2,105.5	0.00	0.00	0.00	

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<b>Well:</b>	Monument Ridge 24C-18-07-95	<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)
4,500.0	34.44	276.27	3,860.7	236.3	-2,149.1	2,162.0	0.00	0.00	0.00
4,524.9	34.44	276.27	3,881.3	237.8	-2,163.1	2,176.2	0.00	0.00	0.00
<b>Start Drop -3.50</b>									
4,600.0	31.81	276.27	3,944.2	242.3	-2,203.9	2,217.2	3.50	-3.50	0.00
4,700.0	28.31	276.27	4,030.7	247.8	-2,253.7	2,267.2	3.50	-3.50	0.00
4,800.0	24.81	276.27	4,120.1	252.7	-2,298.1	2,311.9	3.50	-3.50	0.00
4,900.0	21.31	276.27	4,212.1	256.9	-2,337.0	2,351.1	3.50	-3.50	0.00
4,921.5	20.56	276.27	4,232.2	257.8	-2,344.7	2,358.8	3.50	-3.50	0.00
<b>Top of Gas</b>									
5,000.0	17.81	276.27	4,306.3	260.6	-2,370.3	2,384.6	3.50	-3.50	0.00
5,100.0	14.31	276.27	4,402.4	263.6	-2,397.8	2,412.2	3.50	-3.50	0.00
5,200.0	10.81	276.27	4,500.0	266.0	-2,419.4	2,434.0	3.50	-3.50	0.00
5,300.0	7.31	276.27	4,598.8	267.7	-2,435.0	2,449.7	3.50	-3.50	0.00
5,400.0	3.81	276.27	4,698.3	268.8	-2,444.7	2,459.4	3.50	-3.50	0.00
5,508.8	0.00	0.00	4,807.0	269.2	-2,448.3	2,463.0	3.50	-3.50	76.95
<b>Start 1618.0 hold at 5508.8 MD - Back to Vertical</b>									
5,600.0	0.00	0.00	4,898.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
5,700.0	0.00	0.00	4,998.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,098.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,198.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,298.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,100.0	0.00	0.00	5,398.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,200.0	0.00	0.00	5,498.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,300.0	0.00	0.00	5,598.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,306.0	0.00	0.00	5,604.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
<b>Cameo</b>									
6,400.0	0.00	0.00	5,698.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,500.0	0.00	0.00	5,798.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,600.0	0.00	0.00	5,898.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,700.0	0.00	0.00	5,998.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,098.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
6,827.0	0.00	0.00	6,125.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
<b>Rollins</b>									
6,900.0	0.00	0.00	6,198.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,298.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
7,100.0	0.00	0.00	6,398.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
7,127.0	0.00	0.00	6,425.2	269.2	-2,448.3	2,463.0	0.00	0.00	0.00
<b>TD at 7126.8 - TD</b>									

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<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

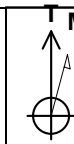
Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Monument 24C-18-07-95	0.00	0.00	4,807.0	269.2	-2,448.3	1,592,220.60	2,282,111.38	39° 25' 54.615 N	108° 2' 30.879 W
- plan hits target center									
- Point									
Monument 24C-18-07-95	0.00	0.00	6,425.2	269.2	-2,448.3	1,592,220.60	2,282,111.38	39° 25' 54.615 N	108° 2' 30.879 W
- plan hits target center									
- Rectangle (sides W80.0 H40.0 D2,193.0)									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
1,880.2	1,700.0	Surface Casing		0.00		
3,744.0	3,237.2	Williams Fork		0.00		
4,921.5	4,232.2	Top of Gas		0.00		
5,508.8	4,807.0	Back to Vertical		0.00		
6,306.0	5,604.2	Cameo		0.00		
6,827.0	6,125.2	Rollins		0.00		
7,127.0	6,425.2	TD		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	Comment	
200.0	200.0	0.0	0.0	Start Build 3.50	
1,183.9	1,125.7	31.3	-285.1	Start 3341.1 hold at 1183.9 MD	
4,524.9	3,881.3	237.8	-2,163.1	Start Drop -3.50	
5,508.8	4,807.0	269.2	-2,448.3	Start 1618.0 hold at 5508.8 MD	
7,127.0	6,425.2	269.2	-2,448.3	TD at 7126.8	



Well Name: Monument Ridge 24C-18-07-95  
Surface Location: Monument Ridge  
North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
Ground Elevation: 5441.2  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1591883.28 2284551.18 39° 25' 51.956 N 108° 1' 59.675 W  
Capstar 321 Monument Ridge 24C-18-07-95 @ 5458.2usft (Capstar 321)



Azimuths to True North  
Magnetic North: 9.89°  
Magnetic Field  
Strength: 51842.5snT  
Dip Angle: 65.58°  
Date: 2/21/2015  
Model: IGRF2010

Monument Ridge  
Monument Ridge 24C-18-07-95  
Design #1  
13:30, February 23 2015

#### WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Monument 24C-18-07-95 TGT_4807.0	269.2	-2448.3	1592220.60	2282111.389° 25'	54.615 N08° 2'	30.879 W	Point	
Monument 24C-18-07-95 BHL_6425.2	269.2	-2448.3	1592220.60	2282111.389° 25'	54.615 N08° 2'	30.879 W	Rectangle (Sides: L40.0 W80.0)	

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1183.9	34.44	276.27	1125.7	31.3	-285.1	3.50	276.27	286.9	
4	4524.9	34.44	276.27	3881.3	237.8	-2163.1	0.00	0.00	2176.2	
5	5508.8	0.00	0.00	4807.0	269.2	-2448.3	3.50	180.00	2463.0	Monument 24C-18-07-95 TGT_
6	7127.0	0.00	0.00	6425.2	269.2	-2448.3	0.00	0.00	2463.0	

#### ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Start Build 3.50
1125.7	1183.9	Start 3341.1 hold at 1183.9 MD
3881.3	4524.9	Start Drop -3.50
4807.0	5508.8	Start 1618.0 hold at 5508.8 MD
6425.2	7127.0	TD at 7126.8

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
1700.0	1880.2	Surface Casing	0.00	
3237.2	3744.0	Williams Fork	0.00	
4232.2	4921.5	Top of Gas	0.00	
4807.0	5508.8	Back to Vertical	0.00	
5604.2	6306.0	Cameo	0.00	
6125.2	6827.0	Rollins	0.00	
6425.2	7127.0	TD	0.00	

