



# **Ursa Operating Company, LLC**

**Rockies Region  
Monument Ridge  
BAT 24A-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 24A-18-07-95
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	Monument Ridge 24A-18-07-95 @ 5458.2usft (Capstar 321)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Monument Ridge 24A-18-07-95 @ 5458.2usft (Capstar 321)
<b>Site:</b>	Monument Ridge	<b>North Reference:</b>	True
<b>Well:</b>	Monument Ridge 24A-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		

<b>Site</b>	Monument Ridge				
<b>Site Position:</b>		<b>Northing:</b>	1,592,015.86 usft	<b>Latitude:</b>	39° 25' 53.266 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,284,550.92 usft	<b>Longitude:</b>	108° 1' 59.725 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-1.60 °

<b>Well</b>	Monument Ridge 24A-18-07-95, SHL: 39° 25' 52.154 -108° 1' 59.682					
<b>Well Position</b>	<b>+N/-S</b>	-112.5 usft	<b>Northing:</b>	1,591,903.26 usft	<b>Latitude:</b>	39° 25' 52.154 N
	<b>+E/-W</b>	3.4 usft	<b>Easting:</b>	2,284,551.18 usft	<b>Longitude:</b>	108° 1' 59.682 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	5,458.2 usft	<b>Ground Level:</b>	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	289.71

<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	
1,232.7	36.15	289.71	1,165.6	106.2	-296.6	3.50	3.50	0.00	289.71	
4,586.0	36.15	289.71	3,873.4	773.2	-2,158.7	0.00	0.00	0.00	0.00	
5,618.7	0.00	0.00	4,839.0	879.4	-2,455.4	3.50	-3.50	0.00	180.00	Monument 24A-18-07
7,236.9	0.00	0.00	6,457.2	879.4	-2,455.4	0.00	0.00	0.00	0.00	

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Monument Ridge 24A-18-07-95 @ 5458.2usft (Capstar 321)
<b>Site:</b>	Monument Ridge	<b>North Reference:</b>	True
<b>Well:</b>	Monument Ridge 24A-18-07-95	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore #1:</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	0.00
100.0	0.00	0.00	100.0	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	0.0	0.00	0.00	0.00	0.00
<b>Start Build 3.50</b>										
300.0	3.50	289.71	299.9	1.0	-2.9	3.1	3.50	3.50	0.00	0.00
400.0	7.00	289.71	399.5	4.1	-11.5	12.2	3.50	3.50	0.00	0.00
500.0	10.50	289.71	498.3	9.2	-25.8	27.4	3.50	3.50	0.00	0.00
600.0	14.00	289.71	596.0	16.4	-45.8	48.6	3.50	3.50	0.00	0.00
700.0	17.50	289.71	692.3	25.5	-71.3	75.8	3.50	3.50	0.00	0.00
800.0	21.00	289.71	786.7	36.7	-102.4	108.7	3.50	3.50	0.00	0.00
900.0	24.50	289.71	878.9	49.7	-138.8	147.4	3.50	3.50	0.00	0.00
1,000.0	28.00	289.71	968.5	64.6	-180.4	191.6	3.50	3.50	0.00	0.00
1,100.0	31.50	289.71	1,055.3	81.3	-227.1	241.2	3.50	3.50	0.00	0.00
1,200.0	35.00	289.71	1,139.0	99.8	-278.7	296.1	3.50	3.50	0.00	0.00
1,232.7	36.15	289.71	1,165.6	106.2	-296.6	315.1	3.50	3.50	0.00	0.00
<b>Start 3353.3 hold at 1232.7 MD</b>										
1,300.0	36.15	289.71	1,219.9	119.6	-334.0	354.8	0.00	0.00	0.00	0.00
1,400.0	36.15	289.71	1,300.7	139.5	-389.5	413.8	0.00	0.00	0.00	0.00
1,500.0	36.15	289.71	1,381.4	159.4	-445.1	472.7	0.00	0.00	0.00	0.00
1,600.0	36.15	289.71	1,462.2	179.3	-500.6	531.7	0.00	0.00	0.00	0.00
1,700.0	36.15	289.71	1,542.9	199.2	-556.1	590.7	0.00	0.00	0.00	0.00
1,800.0	36.15	289.71	1,623.7	219.1	-611.6	649.7	0.00	0.00	0.00	0.00
1,894.5	36.15	289.71	1,700.0	237.9	-664.1	705.5	0.00	0.00	0.00	0.00
<b>Surface Casing</b>										
1,900.0	36.15	289.71	1,704.4	239.0	-667.2	708.7	0.00	0.00	0.00	0.00
2,000.0	36.15	289.71	1,785.2	258.8	-722.7	767.7	0.00	0.00	0.00	0.00
2,100.0	36.15	289.71	1,865.9	278.7	-778.2	826.6	0.00	0.00	0.00	0.00
2,200.0	36.15	289.71	1,946.7	298.6	-833.8	885.6	0.00	0.00	0.00	0.00
2,300.0	36.15	289.71	2,027.4	318.5	-889.3	944.6	0.00	0.00	0.00	0.00
2,400.0	36.15	289.71	2,108.2	338.4	-944.8	1,003.6	0.00	0.00	0.00	0.00
2,500.0	36.15	289.71	2,188.9	358.3	-1,000.4	1,062.6	0.00	0.00	0.00	0.00
2,600.0	36.15	289.71	2,269.7	378.2	-1,055.9	1,121.6	0.00	0.00	0.00	0.00
2,700.0	36.15	289.71	2,350.4	398.1	-1,111.4	1,180.6	0.00	0.00	0.00	0.00
2,800.0	36.15	289.71	2,431.2	418.0	-1,166.9	1,239.5	0.00	0.00	0.00	0.00
2,900.0	36.15	289.71	2,511.9	437.8	-1,222.5	1,298.5	0.00	0.00	0.00	0.00
3,000.0	36.15	289.71	2,592.7	457.7	-1,278.0	1,357.5	0.00	0.00	0.00	0.00
3,100.0	36.15	289.71	2,673.4	477.6	-1,333.5	1,416.5	0.00	0.00	0.00	0.00
3,200.0	36.15	289.71	2,754.2	497.5	-1,389.1	1,475.5	0.00	0.00	0.00	0.00
3,300.0	36.15	289.71	2,834.9	517.4	-1,444.6	1,534.5	0.00	0.00	0.00	0.00
3,400.0	36.15	289.71	2,915.7	537.3	-1,500.1	1,593.4	0.00	0.00	0.00	0.00
3,500.0	36.15	289.71	2,996.4	557.2	-1,555.7	1,652.4	0.00	0.00	0.00	0.00
3,600.0	36.15	289.71	3,077.2	577.1	-1,611.2	1,711.4	0.00	0.00	0.00	0.00
3,700.0	36.15	289.71	3,157.9	597.0	-1,666.7	1,770.4	0.00	0.00	0.00	0.00
3,800.0	36.15	289.71	3,238.7	616.8	-1,722.2	1,829.4	0.00	0.00	0.00	0.00
3,837.8	36.15	289.71	3,269.2	624.4	-1,743.2	1,851.7	0.00	0.00	0.00	0.00
<b>Williams Fork</b>										
3,900.0	36.15	289.71	3,319.4	636.7	-1,777.8	1,888.4	0.00	0.00	0.00	0.00
4,000.0	36.15	289.71	3,400.2	656.6	-1,833.3	1,947.3	0.00	0.00	0.00	0.00
4,100.0	36.15	289.71	3,481.0	676.5	-1,888.8	2,006.3	0.00	0.00	0.00	0.00
4,200.0	36.15	289.71	3,561.7	696.4	-1,944.4	2,065.3	0.00	0.00	0.00	0.00
4,300.0	36.15	289.71	3,642.5	716.3	-1,999.9	2,124.3	0.00	0.00	0.00	0.00
4,400.0	36.15	289.71	3,723.2	736.2	-2,055.4	2,183.3	0.00	0.00	0.00	0.00

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<b>Well:</b>	Monument Ridge 24A-18-07-95	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Planned Survey</b>										
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	36.15	289.71	3,804.0	756.1	-2,111.0	2,242.3	0.00	0.00	0.00	
4,586.0	36.15	289.71	3,873.4	773.2	-2,158.7	2,293.0	0.00	0.00	0.00	
<b>Start Drop -3.50</b>										
4,600.0	35.66	289.71	3,884.7	775.9	-2,166.4	2,301.2	3.50	-3.50	0.00	
4,700.0	32.16	289.71	3,967.7	794.7	-2,218.9	2,357.0	3.50	-3.50	0.00	
4,800.0	28.66	289.71	4,054.0	811.8	-2,266.6	2,407.6	3.50	-3.50	0.00	
4,900.0	25.16	289.71	4,143.1	827.1	-2,309.2	2,452.8	3.50	-3.50	0.00	
5,000.0	21.66	289.71	4,234.9	840.5	-2,346.6	2,492.5	3.50	-3.50	0.00	
5,031.4	20.56	289.71	4,264.2	844.3	-2,357.2	2,503.9	3.50	-3.50	0.00	
<b>Top of Gas</b>										
5,100.0	18.16	289.71	4,328.9	851.9	-2,378.6	2,526.6	3.50	-3.50	0.00	
5,200.0	14.66	289.71	4,424.8	861.5	-2,405.2	2,554.8	3.50	-3.50	0.00	
5,300.0	11.16	289.71	4,522.3	869.0	-2,426.2	2,577.2	3.50	-3.50	0.00	
5,400.0	7.66	289.71	4,620.9	874.5	-2,441.6	2,593.5	3.50	-3.50	0.00	
5,500.0	4.16	289.71	4,720.4	878.0	-2,451.3	2,603.8	3.50	-3.50	0.00	
5,600.0	0.66	289.71	4,820.3	879.4	-2,455.3	2,608.0	3.50	-3.50	0.00	
5,618.7	0.00	0.00	4,839.0	879.4	-2,455.4	2,608.1	3.50	-3.50	374.92	
<b>Start 1618.0 hold at 5618.7 MD - Back to Vertical</b>										
5,700.0	0.00	0.00	4,920.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,020.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,120.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,000.0	0.00	0.00	5,220.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,100.0	0.00	0.00	5,320.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,200.0	0.00	0.00	5,420.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,300.0	0.00	0.00	5,520.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,400.0	0.00	0.00	5,620.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,415.9	0.00	0.00	5,636.2	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
<b>Cameo</b>										
6,500.0	0.00	0.00	5,720.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,600.0	0.00	0.00	5,820.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,700.0	0.00	0.00	5,920.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,020.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,120.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
6,936.9	0.00	0.00	6,157.2	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
<b>Rollins</b>										
7,000.0	0.00	0.00	6,220.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
7,100.0	0.00	0.00	6,320.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
7,200.0	0.00	0.00	6,420.3	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
7,236.7	0.00	0.00	6,457.0	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
<b>TD at 7236.7</b>										
7,236.9	0.00	0.00	6,457.2	879.4	-2,455.4	2,608.1	0.00	0.00	0.00	
<b>TD</b>										

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Monument Ridge 24A-18-07-95 @ 5458.2usft (Capstar 321)
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<b>Well:</b>	Monument Ridge 24A-18-07-95	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

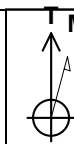
Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Monument 24A-18-07-9! - plan hits target center - Point	0.00	0.00	4,839.0	879.4	-2,455.4	1,592,850.80	2,282,121.30	39° 26' 0.844 N	108° 2' 30.977 W
Monument 24A-18-07-9! - plan hits target center - Rectangle (sides W80.0 H40.0 D2,193.0)	0.00	0.00	6,457.0	879.4	-2,455.4	1,592,850.80	2,282,121.30	39° 26' 0.844 N	108° 2' 30.977 W

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
1,894.5	1,700.0	Surface Casing		0.00		
3,837.8	3,269.2	Williams Fork		0.00		
5,031.4	4,264.2	Top of Gas		0.00		
5,618.7	4,839.0	Back to Vertical		0.00		
6,415.9	5,636.2	Cameo		0.00		
6,936.9	6,157.2	Rollins		0.00		
7,236.9	6,457.2	TD		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
200.0	200.0	0.0	0.0	Start Build 3.50	
1,232.7	1,165.6	106.2	-296.6	Start 3353.3 hold at 1232.7 MD	
4,586.0	3,873.4	773.2	-2,158.7	Start Drop -3.50	
5,618.7	4,839.0	879.4	-2,455.4	Start 1618.0 hold at 5618.7 MD	
7,236.7	6,457.0	879.4	-2,455.4	TD at 7236.7	



Well Name: Monument Ridge 24A-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 1591903.27 2284551.18 39° 25' 52.154 N 108° 1' 59.682 W  
 Capstar 321 Monument Ridge 24A-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 24A-18-07-95  
 Design #1  
 12:45, February 23 2015

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Monument 24A-18-07-95 TGT_	4839.0	879.4	-2455.4	1592850.81	2282121.30	39° 26' 0.844 N	108° 2' 30.977 W	Point
Monument 24A-18-07-95 BHL	6457.0	879.4	-2455.4	1592850.81	2282121.30	39° 26' 0.844 N	108° 2' 30.977 W	Rectangle (Sides: L40.0 W80.0)

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	Start Build 3.50
1165.6	1232.7	Start 3353.3 hold at 1232.7 MD
3873.4	4586.0	Start Drop -3.50
4839.0	5618.7	Start 1618.0 hold at 5618.7 MD
6457.0	7236.7	TD at 7236.7

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	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	1232.7	36.15	289.71	1165.6	106.2	-296.6	3.50	289.71	315.1	
4	4586.0	36.15	289.71	3873.4	773.2	-2158.7	0.00	0.00	2293.0	
5	5618.7	0.00	0.00	4839.0	879.4	-2455.4	3.50	180.00	2608.1	Monument 24A-18-07-95 TGT_
6	7236.9	0.00	0.00	6457.2	879.4	-2455.4	0.00	0.00	2608.1	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
1700.0	1894.5	Surface Casing	0.00	
3269.2	3837.8	Williams Fork	0.00	
4264.2	5031.4	Top of Gas	0.00	
4839.0	5618.7	Back to Vertical	0.00	
5636.2	6415.9	Cameo	0.00	
6157.2	6936.9	Rollins	0.00	
6457.2	7236.9	TD	0.00	

