



# **Ursa Operating Company, LLC**

**Rockies Region**

**Yater**

**YATER 42A-18-07-95**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**14 January, 2015**



<b>Database:</b>	MasterDB	<b>Local Co-ordinate Reference:</b>	Well YATER 42A-18-07-95
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	YATER 42A-18-07-95 @ 5532.0usft (PAD Est KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	YATER 42A-18-07-95 @ 5532.0usft (PAD Est KB)
<b>Site:</b>	Yater	<b>North Reference:</b>	True
<b>Well:</b>	YATER 42A-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>	Yater				
<b>Site Position:</b>		<b>Northing:</b>	1,593,358.13 usft	<b>Latitude:</b>	39° 26' 7.071 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,286,525.77 usft	<b>Longitude:</b>	108° 1' 35.041 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-1.59 °

<b>Well</b>	YATER 42A-18-07-95, SHL LAT: 39.435434684 LONG: -108.026404343					
<b>Well Position</b>	<b>+N/-S</b>	50.0 usft	<b>Northing:</b>	1,593,408.10 usft	<b>Latitude:</b>	39° 26' 7.565 N
	<b>+E/-W</b>	-1.2 usft	<b>Easting:</b>	2,286,525.99 usft	<b>Longitude:</b>	108° 1' 35.056 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	5,532.0 usft	<b>Ground Level:</b>	5,519.0 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	1/14/2015	9.90	65.59	51,856

<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	316.92

<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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,329.8	36.04	316.92	1,263.2	228.9	-214.0	3.50	3.50	0.00	316.92	
4,761.2	36.04	316.92	4,037.8	1,703.6	-1,593.1	0.00	0.00	0.00	0.00	
5,791.0	0.00	0.00	5,001.0	1,932.4	-1,807.1	3.50	-3.50	0.00	180.00	
7,489.0	0.00	0.00	6,699.0	1,932.4	-1,807.1	0.00	0.00	0.00	0.00	

<b>Database:</b>	MasterDB	<b>Local Co-ordinate Reference:</b>	Well YATER 42A-18-07-95
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	YATER 42A-18-07-95 @ 5532.0usft (PAD Est KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	YATER 42A-18-07-95 @ 5532.0usft (PAD Est KB)
<b>Site:</b>	Yater	<b>North Reference:</b>	True
<b>Well:</b>	YATER 42A-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	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
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
<b>Start Build 3.50</b>										
400.0	3.50	316.92	399.9	2.2	-2.1	3.1	3.50	3.50	0.00	0.00
500.0	7.00	316.92	499.5	8.9	-8.3	12.2	3.50	3.50	0.00	0.00
600.0	10.50	316.92	598.3	20.0	-18.7	27.4	3.50	3.50	0.00	0.00
700.0	14.00	316.92	696.0	35.5	-33.2	48.6	3.50	3.50	0.00	0.00
800.0	17.50	316.92	792.3	55.3	-51.7	75.8	3.50	3.50	0.00	0.00
900.0	21.00	316.92	886.7	79.4	-74.3	108.7	3.50	3.50	0.00	0.00
1,000.0	24.50	316.92	978.9	107.7	-100.7	147.4	3.50	3.50	0.00	0.00
1,100.0	28.00	316.92	1,068.5	140.0	-130.9	191.6	3.50	3.50	0.00	0.00
1,200.0	31.50	316.92	1,155.3	176.2	-164.8	241.2	3.50	3.50	0.00	0.00
1,300.0	35.00	316.92	1,239.0	216.2	-202.2	296.1	3.50	3.50	0.00	0.00
1,329.8	36.04	316.92	1,263.2	228.9	-214.0	313.4	3.50	3.50	0.00	0.00
<b>Start 3431.4 hold at 1329.8 MD</b>										
1,400.0	36.04	316.92	1,320.0	259.1	-242.2	354.7	0.00	0.00	0.00	0.00
1,500.0	36.04	316.92	1,400.8	302.0	-282.4	413.5	0.00	0.00	0.00	0.00
1,600.0	36.04	316.92	1,481.7	345.0	-322.6	472.3	0.00	0.00	0.00	0.00
1,700.0	36.04	316.92	1,562.5	388.0	-362.8	531.2	0.00	0.00	0.00	0.00
1,800.0	36.04	316.92	1,643.4	431.0	-403.0	590.0	0.00	0.00	0.00	0.00
1,870.0	36.04	316.92	1,700.0	461.0	-431.1	631.2	0.00	0.00	0.00	0.00
<b>Surface Casing</b>										
1,900.0	36.04	316.92	1,724.3	473.9	-443.2	648.9	0.00	0.00	0.00	0.00
2,000.0	36.04	316.92	1,805.1	516.9	-483.4	707.7	0.00	0.00	0.00	0.00
2,100.0	36.04	316.92	1,886.0	559.9	-523.6	766.5	0.00	0.00	0.00	0.00
2,200.0	36.04	316.92	1,966.8	602.9	-563.8	825.4	0.00	0.00	0.00	0.00
2,300.0	36.04	316.92	2,047.7	645.8	-603.9	884.2	0.00	0.00	0.00	0.00
2,400.0	36.04	316.92	2,128.6	688.8	-644.1	943.1	0.00	0.00	0.00	0.00
2,500.0	36.04	316.92	2,209.4	731.8	-684.3	1,001.9	0.00	0.00	0.00	0.00
2,600.0	36.04	316.92	2,290.3	774.8	-724.5	1,060.7	0.00	0.00	0.00	0.00
2,700.0	36.04	316.92	2,371.1	817.7	-764.7	1,119.6	0.00	0.00	0.00	0.00
2,800.0	36.04	316.92	2,452.0	860.7	-804.9	1,178.4	0.00	0.00	0.00	0.00
2,900.0	36.04	316.92	2,532.8	903.7	-845.1	1,237.3	0.00	0.00	0.00	0.00
3,000.0	36.04	316.92	2,613.7	946.7	-885.3	1,296.1	0.00	0.00	0.00	0.00
3,100.0	36.04	316.92	2,694.6	989.6	-925.4	1,354.9	0.00	0.00	0.00	0.00
3,200.0	36.04	316.92	2,775.4	1,032.6	-965.6	1,413.8	0.00	0.00	0.00	0.00
3,300.0	36.04	316.92	2,856.3	1,075.6	-1,005.8	1,472.6	0.00	0.00	0.00	0.00
3,400.0	36.04	316.92	2,937.1	1,118.6	-1,046.0	1,531.4	0.00	0.00	0.00	0.00
3,500.0	36.04	316.92	3,018.0	1,161.5	-1,086.2	1,590.3	0.00	0.00	0.00	0.00
3,600.0	36.04	316.92	3,098.8	1,204.5	-1,126.4	1,649.1	0.00	0.00	0.00	0.00
3,700.0	36.04	316.92	3,179.7	1,247.5	-1,166.6	1,708.0	0.00	0.00	0.00	0.00
3,800.0	36.04	316.92	3,260.6	1,290.5	-1,206.8	1,766.8	0.00	0.00	0.00	0.00
3,900.0	36.04	316.92	3,341.4	1,333.4	-1,246.9	1,825.6	0.00	0.00	0.00	0.00
4,000.0	36.04	316.92	3,422.3	1,376.4	-1,287.1	1,884.5	0.00	0.00	0.00	0.00
4,041.7	36.04	316.92	3,456.0	1,394.3	-1,303.9	1,909.0	0.00	0.00	0.00	0.00
<b>Williams Fork</b>										
4,100.0	36.04	316.92	3,503.1	1,419.4	-1,327.3	1,943.3	0.00	0.00	0.00	0.00
4,200.0	36.04	316.92	3,584.0	1,462.4	-1,367.5	2,002.2	0.00	0.00	0.00	0.00
4,300.0	36.04	316.92	3,664.9	1,505.4	-1,407.7	2,061.0	0.00	0.00	0.00	0.00
4,400.0	36.04	316.92	3,745.7	1,548.3	-1,447.9	2,119.8	0.00	0.00	0.00	0.00

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	YATER 42A-18-07-95 @ 5532.0usft (PAD Est KB)
<b>Site:</b>	Yater	<b>North Reference:</b>	True
<b>Well:</b>	YATER 42A-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	36.04	316.92	3,826.6	1,591.3	-1,488.1	2,178.7	0.00	0.00	0.00	
4,600.0	36.04	316.92	3,907.4	1,634.3	-1,528.3	2,237.5	0.00	0.00	0.00	
4,700.0	36.04	316.92	3,988.3	1,677.3	-1,568.5	2,296.4	0.00	0.00	0.00	
4,761.2	36.04	316.92	4,037.8	1,703.6	-1,593.1	2,332.4	0.00	0.00	0.00	
<b>Start Drop -3.50</b>										
4,800.0	34.69	316.92	4,069.4	1,720.0	-1,608.4	2,354.8	3.50	-3.50	0.00	
4,900.0	31.19	316.92	4,153.3	1,759.7	-1,645.5	2,409.2	3.50	-3.50	0.00	
5,000.0	27.69	316.92	4,240.4	1,795.6	-1,679.1	2,458.3	3.50	-3.50	0.00	
5,100.0	24.19	316.92	4,330.3	1,827.5	-1,708.9	2,502.0	3.50	-3.50	0.00	
5,200.0	20.69	316.92	4,422.7	1,855.4	-1,735.0	2,540.2	3.50	-3.50	0.00	
5,219.5	20.00	316.92	4,441.0	1,860.3	-1,739.6	2,547.0	3.50	-3.50	0.00	
<b>Top of Gas</b>										
5,300.0	17.19	316.92	4,517.3	1,879.1	-1,757.2	2,572.6	3.50	-3.50	0.00	
5,400.0	13.69	316.92	4,613.7	1,898.5	-1,775.3	2,599.3	3.50	-3.50	0.00	
5,500.0	10.19	316.92	4,711.5	1,913.6	-1,789.5	2,619.9	3.50	-3.50	0.00	
5,600.0	6.69	316.92	4,810.4	1,924.3	-1,799.5	2,634.6	3.50	-3.50	0.00	
5,700.0	3.19	316.92	4,910.0	1,930.6	-1,805.4	2,643.2	3.50	-3.50	0.00	
5,791.0	0.00	0.00	5,001.0	1,932.4	-1,807.1	2,645.7	3.50	-3.50	0.00	
<b>Back to Vertical - Start 1698.0 hold at 5791.0 MD</b>										
5,800.0	0.00	0.00	5,010.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,110.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,000.0	0.00	0.00	5,210.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,100.0	0.00	0.00	5,310.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,200.0	0.00	0.00	5,410.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,300.0	0.00	0.00	5,510.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,400.0	0.00	0.00	5,610.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,500.0	0.00	0.00	5,710.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,600.0	0.00	0.00	5,810.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,678.0	0.00	0.00	5,888.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
<b>Cameo</b>										
6,700.0	0.00	0.00	5,910.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,010.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,110.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,210.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
7,100.0	0.00	0.00	6,310.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
7,189.0	0.00	0.00	6,399.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
<b>Rollins</b>										
7,200.0	0.00	0.00	6,410.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
7,300.0	0.00	0.00	6,510.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
7,400.0	0.00	0.00	6,610.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
7,489.0	0.00	0.00	6,699.0	1,932.4	-1,807.1	2,645.7	0.00	0.00	0.00	
<b>TD at 7489.0</b>										

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<b>Well:</b>	YATER 42A-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									
42A-18-07-95 TGT	0.00	0.00	4,441.0	1,932.4	-1,807.1	1,595,390.05	2,284,773.33	39° 26' 26.664 N	108° 1' 58.090 W
- plan misses target center by 93.1usft at 5251.0usft MD (4470.7 TVD, 1868.0 N, -1746.8 E)									
- Rectangle (sides W100.0 H40.0 D2,258.0)									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
4,041.7	3,456.0	Williams Fork		0.00		
5,219.5	4,441.0	Top of Gas		0.00		
6,678.0	5,888.0	Cameo		0.00		
7,189.0	6,399.0	Rollins		0.00		

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
300.0	300.0	0.0	0.0	Start Build 3.50	
1,329.8	1,263.2	228.9	-214.0	Start 3431.4 hold at 1329.8 MD	
1,870.0	1,700.0	461.0	-431.1	Surface Casing	
4,761.2	4,037.8	1,703.6	-1,593.1	Start Drop -3.50	
5,791.0	5,001.0	1,932.4	-1,807.1	Back to Vertical	
5,791.0	5,001.0	1,932.4	-1,807.1	Start 1698.0 hold at 5791.0 MD	
7,489.0	6,699.0	1,932.4	-1,807.1	TD at 7489.0	



Well Name: YATER 42A-18-07-95  
 Surface Location: Yater  
 North American Datum 1983 US State Plane 1983 Colorado Central Zone  
 Ground Elevation: 5519.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1593408.11 2286525.99 39° 26' 7.565 N 108° 1' 35.056 W  
 PAD Est KB YATER 42A-18-07-95 @ 5532.0usft (PAD Est KB)



Azimuths to True North  
 Magnetic North: 9.90°  
 Magnetic Field  
 Strength: 51855.6snT  
 Dip Angle: 65.59°  
 Date: 1/14/2015  
 Model: IGRF2010

Yater  
 YATER 42A-18-07-95  
 Design #1  
 10:48, January 14 2015

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
42A-18-07-95 TGT4441.0		1932.4	-1807.1	1595390.05	2284773.33	39° 26' 26.664 N	108° 1' 58.090 W	Rectangle (Sides: L40.0 W100.0)

ANNOTATIONS

TVD	MD	Annotation
300.0	300.0	Start Build 3.50
1263.2	1329.8	Start 3431.4 hold at 1329.8 MD
1700.0	1870.0	Surface Casing
4037.8	4761.2	Start Drop -3.50
5001.0	5791.0	Back to Vertical
5001.0	5791.0	Start 1698.0 hold at 5791.0 MD
6699.0	7489.0	TD at 7489.0

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	1329.8	36.04	316.92	1263.2	228.9	-214.0	3.50	316.92	313.4	
4	4761.2	36.04	316.92	4037.8	1703.6	-1593.1	0.00	0.00	2332.4	
5	5791.0	0.00	0.00	5001.0	1932.4	-1807.1	3.50	180.00	2645.7	
6	7489.0	0.00	0.00	6699.0	1932.4	-1807.1	0.00	0.00	2645.7	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3456.0	4041.7	Williams Fork	0.00	
4441.0	5219.5	Top of Gas	0.00	
5888.0	6678.0	Cameo	0.00	
6399.0	7189.0	Rollins	0.00	

