



# **Ursa Operating Company, LLC**

**Rockies Region  
Valley Farms O  
23B-10-06-92**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**13 October, 2013**



<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well 23B-10-06-92
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	23B-10-06-92 @ 5447.4ft (PAD Est KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	23B-10-06-92 @ 5447.4ft (PAD Est KB)
<b>Site:</b>	Valley Farms O	<b>North Reference:</b>	True
<b>Well:</b>	23B-10-06-92	<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		Valley Farms O			
Site Position:		Northing:	1,627,349.93 ft	Latitude:	39° 32' 9.673 N
From:	Lat/Long	Easting:	2,391,526.28 ft	Longitude:	107° 39' 27.378 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.36 °

Well	23B-10-06-92, SHL LAT: 39.536226183 LONG: -107.657611499					
Well Position	+N/-S	74.9 ft	Northing:	1,627,424.90 ft	Latitude:	39° 32' 10.414 N
	+E/-W	-1.8 ft	Easting:	2,391,526.21 ft	Longitude:	107° 39' 27.401 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	5,447.4 ft	Ground Level:	5,432.0 ft

<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	10/8/2013	9.87	65.79	52,126

<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)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	21.88

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,884.1	23.52	21.88	1,862.3	147.3	59.2	3.00	3.00	0.00	21.88	
4,831.5	23.52	21.88	4,564.7	1,238.9	497.6	0.00	0.00	0.00	0.00	
5,615.6	0.00	0.00	5,327.0	1,386.1	556.8	3.00	-3.00	0.00	180.00	23B-10-06-92 TGT
7,885.6	0.00	0.00	7,597.0	1,386.1	556.8	0.00	0.00	0.00	0.00	

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<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	23B-10-06-92 @ 5447.4ft (PAD Est KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	23B-10-06-92 @ 5447.4ft (PAD Est KB)
<b>Site:</b>	Valley Farms O	<b>North Reference:</b>	True
<b>Well:</b>	23B-10-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
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
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 3.00									
1,200.0	3.00	21.88	1,200.0	2.4	1.0	2.6	3.00	3.00	0.00
1,300.0	6.00	21.88	1,299.6	9.7	3.9	10.5	3.00	3.00	0.00
1,400.0	9.00	21.88	1,398.8	21.8	8.8	23.5	3.00	3.00	0.00
1,500.0	12.00	21.88	1,497.1	38.7	15.6	41.7	3.00	3.00	0.00
1,600.0	15.00	21.88	1,594.3	60.4	24.3	65.1	3.00	3.00	0.00
1,700.0	18.00	21.88	1,690.2	86.7	34.8	93.5	3.00	3.00	0.00
1,800.0	21.00	21.88	1,784.4	117.7	47.3	126.9	3.00	3.00	0.00
1,884.1	23.52	21.88	1,862.3	147.3	59.2	158.7	3.00	3.00	0.00
Start 2947.4 hold at 1884.1 MD									
1,900.0	23.52	21.88	1,876.8	153.2	61.5	165.1	0.00	0.00	0.00
2,000.0	23.52	21.88	1,968.5	190.2	76.4	205.0	0.00	0.00	0.00
2,100.0	23.52	21.88	2,060.2	227.2	91.3	244.9	0.00	0.00	0.00
2,200.0	23.52	21.88	2,151.9	264.3	106.2	284.8	0.00	0.00	0.00
2,300.0	23.52	21.88	2,243.6	301.3	121.0	324.7	0.00	0.00	0.00
2,400.0	23.52	21.88	2,335.3	338.3	135.9	364.6	0.00	0.00	0.00
2,500.0	23.52	21.88	2,427.0	375.4	150.8	404.5	0.00	0.00	0.00
2,600.0	23.52	21.88	2,518.7	412.4	165.7	444.4	0.00	0.00	0.00
2,700.0	23.52	21.88	2,610.4	449.4	180.5	484.3	0.00	0.00	0.00
2,800.0	23.52	21.88	2,702.0	486.5	195.4	524.3	0.00	0.00	0.00
2,900.0	23.52	21.88	2,793.7	523.5	210.3	564.2	0.00	0.00	0.00
3,000.0	23.52	21.88	2,885.4	560.5	225.2	604.1	0.00	0.00	0.00
3,100.0	23.52	21.88	2,977.1	597.6	240.0	644.0	0.00	0.00	0.00
3,200.0	23.52	21.88	3,068.8	634.6	254.9	683.9	0.00	0.00	0.00
3,300.0	23.52	21.88	3,160.5	671.7	269.8	723.8	0.00	0.00	0.00
3,400.0	23.52	21.88	3,252.2	708.7	284.7	763.7	0.00	0.00	0.00
3,500.0	23.52	21.88	3,343.9	745.7	299.5	803.6	0.00	0.00	0.00
3,600.0	23.52	21.88	3,435.6	782.8	314.4	843.6	0.00	0.00	0.00
3,700.0	23.52	21.88	3,527.3	819.8	329.3	883.5	0.00	0.00	0.00
3,800.0	23.52	21.88	3,618.9	856.8	344.2	923.4	0.00	0.00	0.00
3,900.0	23.52	21.88	3,710.6	893.9	359.1	963.3	0.00	0.00	0.00
3,923.7	23.52	21.88	3,732.4	902.7	362.6	972.8	0.00	0.00	0.00
Williams Fork									
4,000.0	23.52	21.88	3,802.3	930.9	373.9	1,003.2	0.00	0.00	0.00
4,100.0	23.52	21.88	3,894.0	967.9	388.8	1,043.1	0.00	0.00	0.00
4,200.0	23.52	21.88	3,985.7	1,005.0	403.7	1,083.0	0.00	0.00	0.00
4,300.0	23.52	21.88	4,077.4	1,042.0	418.6	1,122.9	0.00	0.00	0.00
4,400.0	23.52	21.88	4,169.1	1,079.0	433.4	1,162.8	0.00	0.00	0.00
4,500.0	23.52	21.88	4,260.8	1,116.1	448.3	1,202.8	0.00	0.00	0.00
4,600.0	23.52	21.88	4,352.5	1,153.1	463.2	1,242.7	0.00	0.00	0.00
4,700.0	23.52	21.88	4,444.2	1,190.2	478.1	1,282.6	0.00	0.00	0.00

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	23B-10-06-92 @ 5447.4ft (PAD Est KB)
<b>Site:</b>	Valley Farms O	<b>North Reference:</b>	True
<b>Well:</b>	23B-10-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,800.0	23.52	21.88	4,535.8	1,227.2	492.9	1,322.5	0.00	0.00	0.00
4,831.5	23.52	21.88	4,564.7	1,238.9	497.6	1,335.1	0.00	0.00	0.00
<b>Start Drop -3.00</b>									
4,900.0	21.47	21.88	4,628.0	1,263.2	507.4	1,361.3	3.00	-3.00	0.00
5,000.0	18.47	21.88	4,722.0	1,294.9	520.1	1,395.4	3.00	-3.00	0.00
5,100.0	15.47	21.88	4,817.6	1,321.9	531.0	1,424.6	3.00	-3.00	0.00
5,200.0	12.47	21.88	4,914.7	1,344.3	540.0	1,448.7	3.00	-3.00	0.00
5,300.0	9.47	21.88	5,012.8	1,362.0	547.1	1,467.8	3.00	-3.00	0.00
5,400.0	6.47	21.88	5,111.8	1,374.8	552.3	1,481.6	3.00	-3.00	0.00
5,500.0	3.47	21.88	5,211.5	1,382.9	555.5	1,490.3	3.00	-3.00	0.00
5,600.0	0.47	21.88	5,311.4	1,386.1	556.8	1,493.7	3.00	-3.00	0.00
5,615.6	0.00	0.00	5,327.0	1,386.1	556.8	1,493.8	3.00	-3.00	0.00
<b>Start 2270.0 hold at 5615.6 MD</b>									
5,616.0	0.00	0.00	5,327.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
<b>Top of Gas</b>									
5,700.0	0.00	0.00	5,411.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,511.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,611.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,711.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,100.0	0.00	0.00	5,811.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,200.0	0.00	0.00	5,911.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,300.0	0.00	0.00	6,011.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,111.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,500.0	0.00	0.00	6,211.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,588.0	0.00	0.00	6,299.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
<b>Cameo</b>									
6,600.0	0.00	0.00	6,311.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,700.0	0.00	0.00	6,411.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,511.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
6,900.0	0.00	0.00	6,611.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,711.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,100.0	0.00	0.00	6,811.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,200.0	0.00	0.00	6,911.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,300.0	0.00	0.00	7,011.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,400.0	0.00	0.00	7,111.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,500.0	0.00	0.00	7,211.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,586.0	0.00	0.00	7,297.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
<b>Rollins</b>									
7,600.0	0.00	0.00	7,311.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,700.0	0.00	0.00	7,411.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,800.0	0.00	0.00	7,511.4	1,386.1	556.8	1,493.8	0.00	0.00	0.00
7,885.6	0.00	0.00	7,597.0	1,386.1	556.8	1,493.8	0.00	0.00	0.00
<b>TD at 7885.6</b>									

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	23B-10-06-92 @ 5447.4ft (PAD Est KB)
<b>Site:</b>	Valley Farms O	<b>North Reference:</b>	True
<b>Well:</b>	23B-10-06-92	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,923.7	3,732.4	Williams Fork		0.00	
5,616.0	5,327.4	Top of Gas		0.00	
6,588.0	6,299.4	Cameo		0.00	
7,586.0	7,297.4	Rollins		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,100.0	1,100.0	0.0	0.0	Start Build 3.00	
1,884.1	1,862.3	147.3	59.2	Start 2947.4 hold at 1884.1 MD	
4,831.5	4,564.7	1,238.9	497.6	Start Drop -3.00	
5,615.6	5,327.0	1,386.1	556.8	Start 2270.0 hold at 5615.6 MD	
7,885.6	7,597.0	1,386.1	556.8	TD at 7885.6	



Well Name: 23B-10-06-92  
Surface Location: Valley Farms O  
North American Datum 1983, US State Plane 1983, Colorado Central Zone  
Ground Elevation: 5432.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1627424.90 2391526.21 39° 32' 10.414 N 107° 39' 27.401 W  
PAD Est KB 23B-10-06-92 @ 5447.4ft (PAD Est KB)



Azimuths to True North  
Magnetic North: 9.87°  
Magnetic Field  
Strength: 52126.2snT  
Dip Angle: 65.79°  
Date: 10/8/2013  
Model: IGRF200510

Valley Farms O  
23B-10-06-92  
Design #1  
19:32, October 13 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
23B-10-06-92 TGT	5327.0	1386.1	556.8	1628797.41	2392115.76	39° 32' 24.114 N	107° 39' 20.294 W	Rectangle (Sides: L40.0 W100.0)

#### 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	1100.0	0.00	0.00	1100.0	0.0	0.0	0.00	0.00	0.0	
3	1884.1	23.52	21.88	1862.3	147.3	59.2	3.00	21.88	158.7	
4	4831.5	23.52	21.88	4564.7	1238.9	497.6	0.00	0.00	1335.1	
5	5615.6	0.00	0.00	5327.0	1386.1	556.8	3.00	180.00	1493.8	23B-10-06-92 TGT
6	7885.6	0.00	0.00	7597.0	1386.1	556.8	0.00	0.00	1493.8	

#### ANNOTATIONS

TVD	MD	Annotation
1100.0	1100.0	Start Build 3.00
1862.3	1884.1	Start 2947.4 hold at 1884.1 MD
4564.7	4831.5	Start Drop -3.00
5327.0	5615.6	Start 2270.0 hold at 5615.6 MD
7597.0	7885.6	TD at 7885.6

#### FORMATION TOP DETAILS

TVDP	MDP	Formation
3732.4	3923.7	Williams Fork
5327.4	5616.0	Top of Gas
6299.4	6588.0	Cameo
7297.4	7586.0	Rollins

