



# **Ursa Operating Company, LLC**

**Rockies Region  
Valley Farms L  
32B-11-6-92**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**16 April, 2014**



<b>Database:</b>	MasterDB	<b>Local Co-ordinate Reference:</b>	Well 32B-11-6-92
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	32B-11-6-92 @ 5564.4usft (PAD Est KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	32B-11-6-92 @ 5564.4usft (PAD Est KB)
<b>Site:</b>	Valley Farms L	<b>North Reference:</b>	True
<b>Well:</b>	32B-11-6-92	<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 L				
Site Position:		Northing:	1,627,813.25 usft	Latitude:	39° 32' 16.142 N
From:	Lat/Long	Easting:	2,399,633.87 usft	Longitude:	107° 37' 44.058 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.34 °

Well	32B-11-6-92, SHL LAT: 39.537770412 LONG: -107.629176038					
Well Position	+N/-S	-17.0 usft	Northing:	1,627,798.01 usft	Latitude:	39° 32' 15.973 N
	+E/-W	-76.4 usft	Easting:	2,399,557.08 usft	Longitude:	107° 37' 45.034 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,564.4 usft	Ground Level:	5,549.0 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	4/7/2014	9.83	65.76	52,039

<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	338.75

<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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,705.5	36.17	338.75	1,627.0	343.0	-133.4	3.00	3.00	0.00	338.75	
4,611.3	36.17	338.75	3,973.0	1,941.2	-754.7	0.00	0.00	0.00	0.00	
5,816.8	0.00	0.00	5,100.0	2,284.2	-888.1	3.00	-3.00	0.00	180.00	
7,922.8	0.00	0.00	7,206.0	2,284.2	-888.1	0.00	0.00	0.00	0.00	

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	32B-11-6-92 @ 5564.4usft (PAD Est KB)
<b>Site:</b>	Valley Farms L	<b>North Reference:</b>	True
<b>Well:</b>	32B-11-6-92	<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
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
Start Build 3.00									
600.0	3.00	338.75	600.0	2.4	-0.9	2.6	3.00	3.00	0.00
700.0	6.00	338.75	699.6	9.8	-3.8	10.5	3.00	3.00	0.00
800.0	9.00	338.75	798.8	21.9	-8.5	23.5	3.00	3.00	0.00
900.0	12.00	338.75	897.1	38.9	-15.1	41.7	3.00	3.00	0.00
1,000.0	15.00	338.75	994.3	60.7	-23.6	65.1	3.00	3.00	0.00
1,100.0	18.00	338.75	1,090.2	87.1	-33.9	93.5	3.00	3.00	0.00
1,200.0	21.00	338.75	1,184.4	118.2	-46.0	126.9	3.00	3.00	0.00
1,300.0	24.00	338.75	1,276.8	153.9	-59.8	165.1	3.00	3.00	0.00
1,400.0	27.00	338.75	1,367.1	194.0	-75.4	208.2	3.00	3.00	0.00
1,500.0	30.00	338.75	1,454.9	238.5	-92.7	255.9	3.00	3.00	0.00
1,600.0	33.00	338.75	1,540.2	287.2	-111.7	308.1	3.00	3.00	0.00
1,705.5	36.17	338.75	1,627.0	343.0	-133.4	368.0	3.00	3.00	0.00
Start 2905.8 hold at 1705.5 MD									
1,800.0	36.17	338.75	1,703.3	395.0	-153.6	423.8	0.00	0.00	0.00
1,900.0	36.17	338.75	1,784.1	450.0	-174.9	482.8	0.00	0.00	0.00
2,000.0	36.17	338.75	1,864.8	505.0	-196.3	541.8	0.00	0.00	0.00
2,100.0	36.17	338.75	1,945.5	560.0	-217.7	600.8	0.00	0.00	0.00
2,200.0	36.17	338.75	2,026.3	615.0	-239.1	659.8	0.00	0.00	0.00
2,300.0	36.17	338.75	2,107.0	670.0	-260.5	718.8	0.00	0.00	0.00
2,400.0	36.17	338.75	2,187.7	725.0	-281.9	777.8	0.00	0.00	0.00
2,500.0	36.17	338.75	2,268.4	780.0	-303.2	836.8	0.00	0.00	0.00
2,600.0	36.17	338.75	2,349.2	835.0	-324.6	895.8	0.00	0.00	0.00
2,700.0	36.17	338.75	2,429.9	890.0	-346.0	954.9	0.00	0.00	0.00
2,800.0	36.17	338.75	2,510.6	945.0	-367.4	1,013.9	0.00	0.00	0.00
2,900.0	36.17	338.75	2,591.4	1,000.0	-388.8	1,072.9	0.00	0.00	0.00
3,000.0	36.17	338.75	2,672.1	1,055.0	-410.2	1,131.9	0.00	0.00	0.00
3,100.0	36.17	338.75	2,752.8	1,110.0	-431.6	1,190.9	0.00	0.00	0.00
3,200.0	36.17	338.75	2,833.6	1,165.0	-452.9	1,249.9	0.00	0.00	0.00
3,300.0	36.17	338.75	2,914.3	1,220.0	-474.3	1,308.9	0.00	0.00	0.00
3,400.0	36.17	338.75	2,995.0	1,275.0	-495.7	1,367.9	0.00	0.00	0.00
3,500.0	36.17	338.75	3,075.8	1,330.0	-517.1	1,427.0	0.00	0.00	0.00
3,600.0	36.17	338.75	3,156.5	1,385.0	-538.5	1,486.0	0.00	0.00	0.00
3,700.0	36.17	338.75	3,237.2	1,440.0	-559.9	1,545.0	0.00	0.00	0.00
3,767.1	36.17	338.75	3,291.4	1,476.9	-574.2	1,584.6	0.00	0.00	0.00
Williams Fork									
3,800.0	36.17	338.75	3,318.0	1,495.0	-581.2	1,604.0	0.00	0.00	0.00
3,900.0	36.17	338.75	3,398.7	1,550.0	-602.6	1,663.0	0.00	0.00	0.00
4,000.0	36.17	338.75	3,479.4	1,605.0	-624.0	1,722.0	0.00	0.00	0.00
4,100.0	36.17	338.75	3,560.2	1,660.0	-645.4	1,781.0	0.00	0.00	0.00
4,200.0	36.17	338.75	3,640.9	1,715.0	-666.8	1,840.0	0.00	0.00	0.00
4,300.0	36.17	338.75	3,721.6	1,770.0	-688.2	1,899.0	0.00	0.00	0.00
4,400.0	36.17	338.75	3,802.4	1,825.0	-709.5	1,958.1	0.00	0.00	0.00
4,500.0	36.17	338.75	3,883.1	1,880.0	-730.9	2,017.1	0.00	0.00	0.00
4,600.0	36.17	338.75	3,963.8	1,935.0	-752.3	2,076.1	0.00	0.00	0.00
4,611.3	36.17	338.75	3,973.0	1,941.2	-754.7	2,082.8	0.00	0.00	0.00
Start Drop -3.00									
4,700.0	33.51	338.75	4,045.7	1,988.4	-773.1	2,133.4	3.00	-3.00	0.00

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	32B-11-6-92 @ 5564.4usft (PAD Est KB)
<b>Site:</b>	Valley Farms L	<b>North Reference:</b>	True
<b>Well:</b>	32B-11-6-92	<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)
4,800.0	30.51	338.75	4,130.5	2,037.8	-792.3	2,186.4	3.00	-3.00	0.00
4,900.0	27.51	338.75	4,218.0	2,083.0	-809.9	2,234.9	3.00	-3.00	0.00
5,000.0	24.51	338.75	4,307.8	2,123.9	-825.7	2,278.7	3.00	-3.00	0.00
5,100.0	21.51	338.75	4,399.9	2,160.3	-839.9	2,317.8	3.00	-3.00	0.00
5,124.2	20.78	338.75	4,422.4	2,168.4	-843.1	2,326.5	3.00	-3.00	0.00
<b>Top of Gas</b>									
5,184.4	18.97	338.75	4,479.0	2,187.5	-850.5	2,347.0	3.00	-3.00	0.00
<b>32B-11-6-92 TGT</b>									
5,200.0	18.51	338.75	4,493.8	2,192.2	-852.3	2,352.0	3.00	-3.00	0.00
5,300.0	15.51	338.75	4,589.4	2,219.4	-862.9	2,381.3	3.00	-3.00	0.00
5,400.0	12.51	338.75	4,686.5	2,242.0	-871.7	2,405.5	3.00	-3.00	0.00
5,500.0	9.51	338.75	4,784.6	2,259.8	-878.6	2,424.5	3.00	-3.00	0.00
5,600.0	6.51	338.75	4,883.6	2,272.7	-883.6	2,438.5	3.00	-3.00	0.00
5,700.0	3.51	338.75	4,983.2	2,280.9	-886.8	2,447.2	3.00	-3.00	0.00
5,800.0	0.51	338.75	5,083.2	2,284.1	-888.1	2,450.7	3.00	-3.00	0.00
5,816.8	0.00	0.00	5,100.0	2,284.2	-888.1	2,450.8	3.00	-3.00	0.00
<b>Start 2106.0 hold at 5816.8 MD</b>									
5,900.0	0.00	0.00	5,183.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,283.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,100.0	0.00	0.00	5,383.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,200.0	0.00	0.00	5,483.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,300.0	0.00	0.00	5,583.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,400.0	0.00	0.00	5,683.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,500.0	0.00	0.00	5,783.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,600.0	0.00	0.00	5,883.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,628.2	0.00	0.00	5,911.4	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
<b>Cameo</b>									
6,700.0	0.00	0.00	5,983.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,083.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
6,900.0	0.00	0.00	6,183.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,283.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,100.0	0.00	0.00	6,383.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,200.0	0.00	0.00	6,483.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,300.0	0.00	0.00	6,583.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,400.0	0.00	0.00	6,683.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,500.0	0.00	0.00	6,783.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,600.0	0.00	0.00	6,883.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,623.2	0.00	0.00	6,906.4	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
<b>Rollins</b>									
7,700.0	0.00	0.00	6,983.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,800.0	0.00	0.00	7,083.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,900.0	0.00	0.00	7,183.2	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
7,922.8	0.00	0.00	7,206.0	2,284.2	-888.1	2,450.8	0.00	0.00	0.00
<b>TD at 7922.8</b>									

<b>Database:</b>	MasterDB	<b>Local Co-ordinate Reference:</b>	Well 32B-11-6-92
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	32B-11-6-92 @ 5564.4usft (PAD Est KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	32B-11-6-92 @ 5564.4usft (PAD Est KB)
<b>Site:</b>	Valley Farms L	<b>North Reference:</b>	True
<b>Well:</b>	32B-11-6-92	<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									
32B-11-6-92 TGT	0.00	0.00	4,442.0	2,284.2	-888.1	1,630,102.39	2,398,722.77	39° 32' 38.549 N	107° 37' 56.371 W
- plan misses target center by 110.2usft at 5184.4usft MD (4479.0 TVD, 2187.5 N, -850.5 E)									
- Rectangle (sides W100.0 H40.0 D2,784.0)									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
3,767.1	3,291.4	Williams Fork		0.00		
5,124.2	4,422.4	Top of Gas		0.00		
6,628.2	5,911.4	Cameo		0.00		
7,623.2	6,906.4	Rollins		0.00		

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
500.0	500.0	0.0	0.0	Start Build 3.00
1,705.5	1,627.0	343.0	-133.4	Start 2905.8 hold at 1705.5 MD
4,611.3	3,973.0	1,941.2	-754.7	Start Drop -3.00
5,816.8	5,100.0	2,284.2	-888.1	Start 2106.0 hold at 5816.8 MD
7,922.8	7,206.0	2,284.2	-888.1	TD at 7922.8



Well Name: 32B-11-6-92  
Surface Location: Valley Farms L  
North American Datum 1983, US State Plane 1983, Colorado Central Zone  
Ground Elevation: 5549.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1627798.02 2399557.08 39° 32' 15.973 N 107° 37' 45.034 W  
PAD Est KB 32B-11-6-92 @ 5564.4usft (PAD Est KB)



Azimuths to True North  
Magnetic North: 9.83°  
Magnetic Field  
Strength: 52039.2snT  
Dip Angle: 65.76°  
Date: 4/7/2014  
Model: IGRF2010

Valley Farms L  
32B-11-6-92  
Design #1  
7:25, April 16 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
32B-11-6-92 TGT	4442.0	2284.2	-888.1	1630102.40	2398722.77	39° 32' 38.549 N 107° 37' 56.371 W	Rectangle (Sides: L40.0 W100.0)	

#### 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	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	1705.5	36.17	338.75	1627.0	343.0	-133.4	3.00	338.75	368.0	
4	4611.3	36.17	338.75	3973.0	1941.2	-754.7	0.00	0.00	2082.8	
5	5816.8	0.00	0.00	5100.0	2284.2	-888.1	3.00	180.00	2450.8	
6	7922.8	0.00	0.00	7206.0	2284.2	-888.1	0.00	0.00	2450.8	

#### ANNOTATIONS

TVD	MD	Annotation
500.0	500.0	Start Build 3.00
1627.0	1705.5	Start 2905.8 hold at 1705.5 MD
3973.0	4611.3	Start Drop -3.00
5100.0	5816.8	Start 2106.0 hold at 5816.8 MD
7206.0	7922.8	TD at 7922.8

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3291.4	3767.1	Williams Fork	0.00	
4422.4	5124.2	Top of Gas	0.00	
5911.4	6628.2	Cameo	0.00	
6906.4	7623.2	Rollins	0.00	

