



# **Ursa Operating Company, LLC**

**Rockies Region**

**Valley Farms G**

**Valley Farms G 22A-14-06-92**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**10 May, 2015**



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Valley Farms G 22A-14-06-92
<b>Company:</b>	Ursa Operating Company, LLC	<b>TVD Reference:</b>	Valley Farms G 22A-14-06-92 @ 5640.0usft (PLAN KB)
<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Valley Farms G 22A-14-06-92 @ 5640.0usft (PLAN KB)
<b>Site:</b>	Valley Farms G	<b>North Reference:</b>	True
<b>Well:</b>	Valley Farms G 22A-14-06-92	<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 G				
Site Position:		Northing:	1,624,165.22 usft	Latitude:	39° 31' 39.977 N
From:	Lat/Long	Easting:	2,399,120.26 usft	Longitude:	107° 37' 49.521 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.34 °

Well	Valley Farms G 22A-14-06-92, SHL: 39.527442119 -107.630424105					
Well Position	+N/-S	-120.0 usft	Northing:	1,624,045.29 usft	Latitude:	39° 31' 38.792 N
	+E/-W	-0.5 usft	Easting:	2,399,116.97 usft	Longitude:	107° 37' 49.527 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,640.0 usft	Ground Level:	5,623.0 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	5/3/2015	9.69	65.72	51,924

<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	301.94	

<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	
1,140.0	0.00	0.00	1,140.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,640.0	5.00	335.00	1,639.4	19.8	-9.2	1.00	1.00	0.00	335.00	
1,940.0	5.00	335.00	1,938.2	43.5	-20.3	0.00	0.00	0.00	0.00	
2,755.3	32.53	300.46	2,704.0	189.8	-228.6	3.50	3.38	-4.24	-39.66	
5,168.7	32.53	300.46	4,738.7	847.7	-1,347.3	0.00	0.00	0.00	0.00	
6,098.2	0.00	0.00	5,619.0	977.9	-1,568.6	3.50	-3.50	0.00	180.00	
8,008.2	0.00	0.00	7,529.0	977.9	-1,568.6	0.00	0.00	0.00	0.00	

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Valley Farms G 22A-14-06-92 @ 5640.0usft (PLAN KB)
<b>Site:</b>	Valley Farms G	<b>North Reference:</b>	True
<b>Well:</b>	Valley Farms G 22A-14-06-92	<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	
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	
Surface Casing										
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,140.0	0.00	0.00	1,140.0	0.0	0.0	0.0	0.00	0.00	0.00	
Start Build 1.00										
1,200.0	0.60	335.00	1,200.0	0.3	-0.1	0.3	1.00	1.00	0.00	
1,300.0	1.60	335.00	1,300.0	2.0	-0.9	1.9	1.00	1.00	0.00	
1,400.0	2.60	335.00	1,399.9	5.3	-2.5	4.9	1.00	1.00	0.00	
1,500.0	3.60	335.00	1,499.8	10.2	-4.8	9.5	1.00	1.00	0.00	
1,600.0	4.60	335.00	1,599.5	16.7	-7.8	15.5	1.00	1.00	0.00	
1,640.0	5.00	335.00	1,639.4	19.8	-9.2	18.3	1.00	1.00	0.00	
Start 300.0 hold at 1640.0 MD										
1,700.0	5.00	335.00	1,699.1	24.5	-11.4	22.7	0.00	0.00	0.00	
1,800.0	5.00	335.00	1,798.8	32.4	-15.1	30.0	0.00	0.00	0.00	
1,900.0	5.00	335.00	1,898.4	40.3	-18.8	37.3	0.00	0.00	0.00	
1,940.0	5.00	335.00	1,938.2	43.5	-20.3	40.2	0.00	0.00	0.00	
Start DLS 3.50 TFO -39.66										
2,000.0	6.75	323.52	1,997.9	48.7	-23.5	45.7	3.50	2.92	-19.13	
2,100.0	9.97	313.92	2,096.8	59.4	-33.2	59.6	3.50	3.22	-9.60	
2,200.0	13.33	309.04	2,194.8	72.7	-48.4	79.5	3.50	3.36	-4.88	
2,300.0	16.75	306.11	2,291.3	88.4	-69.0	105.3	3.50	3.42	-2.93	
2,400.0	20.20	304.16	2,386.2	106.6	-94.9	137.0	3.50	3.45	-1.96	
2,500.0	23.66	302.75	2,478.9	127.2	-126.1	174.3	3.50	3.46	-1.40	
2,600.0	27.13	301.69	2,569.2	150.0	-162.4	217.2	3.50	3.47	-1.06	
2,700.0	30.60	300.85	2,656.8	175.1	-203.6	265.4	3.50	3.48	-0.84	
2,755.3	32.53	300.46	2,704.0	189.8	-228.6	294.4	3.50	3.48	-0.71	
Start 2413.4 hold at 2755.3 MD										
2,800.0	32.53	300.46	2,741.6	202.0	-249.3	318.4	0.00	0.00	0.00	
2,900.0	32.53	300.46	2,825.9	229.3	-295.6	372.1	0.00	0.00	0.00	
3,000.0	32.53	300.46	2,910.2	256.5	-342.0	425.9	0.00	0.00	0.00	
3,100.0	32.53	300.46	2,994.5	283.8	-388.3	479.7	0.00	0.00	0.00	
3,200.0	32.53	300.46	3,078.8	311.0	-434.7	533.4	0.00	0.00	0.00	
3,300.0	32.53	300.46	3,163.2	338.3	-481.0	587.2	0.00	0.00	0.00	
3,400.0	32.53	300.46	3,247.5	365.5	-527.4	640.9	0.00	0.00	0.00	
3,500.0	32.53	300.46	3,331.8	392.8	-573.7	694.7	0.00	0.00	0.00	
3,600.0	32.53	300.46	3,416.1	420.1	-620.1	748.4	0.00	0.00	0.00	
3,700.0	32.53	300.46	3,500.4	447.3	-666.5	802.2	0.00	0.00	0.00	
3,800.0	32.53	300.46	3,584.7	474.6	-712.8	856.0	0.00	0.00	0.00	
3,900.0	32.53	300.46	3,669.0	501.8	-759.2	909.7	0.00	0.00	0.00	
3,991.3	32.53	300.46	3,746.0	526.7	-801.5	958.8	0.00	0.00	0.00	
Williams Fork										

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<b>Well:</b>	Valley Farms G 22A-14-06-92	<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)
4,000.0	32.53	300.46	3,753.3	529.1	-805.5	963.5	0.00	0.00	0.00
4,100.0	32.53	300.46	3,837.6	556.3	-851.9	1,017.2	0.00	0.00	0.00
4,200.0	32.53	300.46	3,922.0	583.6	-898.2	1,071.0	0.00	0.00	0.00
4,300.0	32.53	300.46	4,006.3	610.9	-944.6	1,124.7	0.00	0.00	0.00
4,400.0	32.53	300.46	4,090.6	638.1	-990.9	1,178.5	0.00	0.00	0.00
4,500.0	32.53	300.46	4,174.9	665.4	-1,037.3	1,232.2	0.00	0.00	0.00
4,600.0	32.53	300.46	4,259.2	692.6	-1,083.6	1,286.0	0.00	0.00	0.00
4,700.0	32.53	300.46	4,343.5	719.9	-1,130.0	1,339.8	0.00	0.00	0.00
4,800.0	32.53	300.46	4,427.8	747.2	-1,176.3	1,393.5	0.00	0.00	0.00
4,900.0	32.53	300.46	4,512.1	774.4	-1,222.7	1,447.3	0.00	0.00	0.00
5,000.0	32.53	300.46	4,596.5	801.7	-1,269.0	1,501.0	0.00	0.00	0.00
5,100.0	32.53	300.46	4,680.8	828.9	-1,315.4	1,554.8	0.00	0.00	0.00
5,168.7	32.53	300.46	4,738.7	847.7	-1,347.3	1,591.7	0.00	0.00	0.00
Start Drop -3.50									
5,200.0	31.44	300.46	4,765.2	856.1	-1,361.5	1,608.3	3.50	-3.50	0.00
5,300.0	27.94	300.46	4,852.1	881.2	-1,404.2	1,657.8	3.50	-3.50	0.00
5,400.0	24.44	300.46	4,941.8	903.5	-1,442.2	1,701.9	3.50	-3.50	0.00
5,500.0	20.94	300.46	5,034.1	923.1	-1,475.5	1,740.4	3.50	-3.50	0.00
5,510.6	20.56	300.46	5,044.0	925.0	-1,478.7	1,744.2	3.50	-3.50	0.00
Top of Gas									
5,600.0	17.44	300.46	5,128.5	939.7	-1,503.8	1,773.3	3.50	-3.50	0.00
5,700.0	13.94	300.46	5,224.8	953.4	-1,527.1	1,800.3	3.50	-3.50	0.00
5,800.0	10.44	300.46	5,322.5	964.1	-1,545.3	1,821.4	3.50	-3.50	0.00
5,900.0	6.94	300.46	5,421.3	971.8	-1,558.3	1,836.5	3.50	-3.50	0.00
6,000.0	3.44	300.46	5,520.9	976.4	-1,566.1	1,845.5	3.50	-3.50	0.00
6,098.2	0.00	0.00	5,619.0	977.9	-1,568.6	1,848.5	3.50	-3.50	0.00
Start 1910.0 hold at 6098.2 MD - Back to Vertical									
6,100.0	0.00	0.00	5,620.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
6,200.0	0.00	0.00	5,720.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
6,300.0	0.00	0.00	5,820.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
6,400.0	0.00	0.00	5,920.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
6,500.0	0.00	0.00	6,020.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,120.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
6,700.0	0.00	0.00	6,220.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
6,712.2	0.00	0.00	6,233.0	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
Cameo									
6,800.0	0.00	0.00	6,320.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
6,900.0	0.00	0.00	6,420.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,520.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,100.0	0.00	0.00	6,620.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,200.0	0.00	0.00	6,720.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,300.0	0.00	0.00	6,820.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,400.0	0.00	0.00	6,920.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,500.0	0.00	0.00	7,020.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,600.0	0.00	0.00	7,120.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,700.0	0.00	0.00	7,220.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,708.2	0.00	0.00	7,229.0	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
Rollins									
7,800.0	0.00	0.00	7,320.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
7,900.0	0.00	0.00	7,420.8	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
8,008.1	0.00	0.00	7,528.9	977.9	-1,568.6	1,848.5	0.00	0.00	0.00

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<b>Project:</b>	Rockies Region	<b>MD Reference:</b>	Valley Farms G 22A-14-06-92 @ 5640.0usft (PLAN KB)
<b>Site:</b>	Valley Farms G	<b>North Reference:</b>	True
<b>Well:</b>	Valley Farms G 22A-14-06-92	<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)
<b>BHL: 39.5301266, -107.6359854</b>									
8,008.2	0.00	0.00	7,529.0	977.9	-1,568.6	1,848.5	0.00	0.00	0.00
<b>TD at 8008.2 - TD</b>									

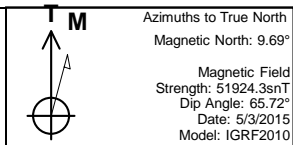
Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Valley Farms G 22A-14-06-92	0.00	0.00	5,044.0	977.9	-1,568.6	1,625,059.66	2,397,571.69	39° 31' 48.456 N	107° 38' 9.547 W
- plan misses target center by 98.0usft at 5544.6usft MD (5075.9 TVD, 930.9 N, -1488.7 E)									
- Rectangle (sides W100.0 H40.0 D2,485.0)									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,991.3	3,746.0	Williams Fork		0.00		
5,510.6	5,044.0	Top of Gas		0.00		
6,712.2	6,233.0	Cameo		0.00		
7,708.2	7,229.0	Rollins		0.00		
8,008.2	7,529.0	TD		0.00		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
1,000.0	1,000.0	0.0	0.0	Surface Casing
1,140.0	1,140.0	0.0	0.0	Start Build 1.00
1,640.0	1,639.4	19.8	-9.2	Start 300.0 hold at 1640.0 MD
1,940.0	1,938.2	43.5	-20.3	Start DLS 3.50 TFO -39.66
2,755.3	2,704.0	189.8	-228.6	Start 2413.4 hold at 2755.3 MD
5,168.7	4,738.7	847.7	-1,347.3	Start Drop -3.50
6,098.2	5,619.0	977.9	-1,568.6	Start 1910.0 hold at 6098.2 MD
6,098.2	5,619.0	977.9	-1,568.6	Back to Vertical
8,008.1	7,528.9	977.9	-1,568.6	BHL: 39.5301266, -107.6359854
8,008.2	7,529.0	977.9	-1,568.6	TD at 8008.2



Well Name: Valley Farms G 22A-14-06-92  
Surface Location: Valley Farms G  
North American Datum 1983, US State Plane 1983, Colorado Central Zone  
Ground Elevation: 5623.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1624045.30 2399116.96 39° 31' 38.792 N 107° 37' 49.527 W  
PLAN KB Valley Farms G 22A-14-06-92 @ 5640.0usft (PLAN KB)



Valley Farms G  
Valley Farms G 22A-14-06-92  
Design #1  
17:02, May 10 2015

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Valley Farms G 22A-14-06-92 TGT	5044.0	977.9	-1568.6	1625059.66	2397571.69	39° 31' 38.792° N	107° 37' 49.527° W	Rectangle (Sides: L40.0 W100.0)

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1140.0	0.00	0.00	1140.0	0.0	0.0	0.00	0.00	0.0	
3	1640.0	5.00	335.00	1639.4	19.8	-9.2	1.00	335.00	18.3	
4	1940.0	5.00	335.00	1938.2	43.5	-20.3	0.00	0.00	40.2	
5	2755.3	32.53	300.46	2704.0	189.8	-228.6	3.50	-39.66	294.4	
6	5168.7	32.53	300.46	4738.7	847.7	-1347.3	0.00	0.00	1591.7	
7	6098.2	0.00	0.00	5619.0	977.9	-1568.6	3.50	180.00	1848.5	
8	8008.2	0.00	0.00	7529.0	977.9	-1568.6	0.00	0.00	1848.5	

#### ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	Surface Casing
1140.0	1140.0	Start Build 1.00
1639.4	1640.0	Start 300.0 hold at 1640.0 MD
1938.2	1940.0	Start DLS 3.50 TFO -39.66
2704.0	2755.3	Start 2413.4 hold at 2755.3 MD
4738.7	5168.7	Start Drop -3.50
5619.0	6098.2	Start 1910.0 hold at 6098.2 MD
5619.0	6098.2	Back to Vertical
7528.9	8008.1	BHL: 39.5301266, -107.6359854
7529.0	8008.2	TD at 8008.2

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3746.0	3991.3	Williams Fork	0.00	
5044.0	5510.6	Top of Gas	0.00	
6233.0	6712.2	Cameo	0.00	
7229.0	7708.2	Rollins	0.00	

