



Ursa Operating Company, LLC

**Rockies Region
Valley Farms J
Valley Farms J4**

Wellbore #1

Plan: Design #2

Standard Planning Report

03 March, 2014



Database:	MasterDB	Local Co-ordinate Reference:	Well Valley Farms J4
Company:	Ursa Operating Company, LLC	TVD Reference:	Valley Farms J4 @ 5552.4usft (PAD Est KB)
Project:	Rockies Region	MD Reference:	Valley Farms J4 @ 5552.4usft (PAD Est KB)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project	Rockies Region		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		Valley Farms J			
Site Position:		Northing:	1,626,334.55 usft	Latitude:	39° 32' 2.073 N
From:	Lat/Long	Easting:	2,401,977.73 usft	Longitude:	107° 37' 13.708 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.34 °

Well	Valley Farms J4, SHL LAT: 39.533806200 LONG: -107.620472700					
Well Position	+N/-S	-37.5 usft	Northing:	1,626,297.06 usft	Latitude:	39° 32' 1.702 N
	+E/-W	0.5 usft	Easting:	2,401,977.34 usft	Longitude:	107° 37' 13.702 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,552.4 usft	Ground Level:	5,537.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/5/2013	9.87	65.79	52,137

Design	Design #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	59.34

Plan Sections										
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	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,641.8	16.25	59.34	1,634.6	38.9	65.7	3.00	3.00	0.00	59.34	
3,846.8	16.25	59.34	3,751.4	353.7	596.5	0.00	0.00	0.00	0.00	
4,388.6	0.00	0.00	4,286.0	392.6	662.2	3.00	-3.00	0.00	180.00	J4 TGT
7,172.6	0.00	0.00	7,070.0	392.6	662.2	0.00	0.00	0.00	0.00	

Database:	MasterDB	Local Co-ordinate Reference:	Well Valley Farms J4
Company:	Ursa Operating Company, LLC	TVD Reference:	Valley Farms J4 @ 5552.4usft (PAD Est KB)
Project:	Rockies Region	MD Reference:	Valley Farms J4 @ 5552.4usft (PAD Est KB)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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
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	59.34	1,200.0	1.3	2.3	2.6	3.00	3.00	0.00
1,300.0	6.00	59.34	1,299.6	5.3	9.0	10.5	3.00	3.00	0.00
1,400.0	9.00	59.34	1,398.8	12.0	20.2	23.5	3.00	3.00	0.00
1,500.0	12.00	59.34	1,497.1	21.3	35.9	41.7	3.00	3.00	0.00
1,600.0	15.00	59.34	1,594.3	33.2	56.0	65.1	3.00	3.00	0.00
1,641.8	16.25	59.34	1,634.6	38.9	65.7	76.3	3.00	3.00	0.00
Start 2205.0 hold at 1641.8 MD									
1,700.0	16.25	59.34	1,690.4	47.2	79.7	92.6	0.00	0.00	0.00
1,800.0	16.25	59.34	1,786.4	61.5	103.8	120.6	0.00	0.00	0.00
1,900.0	16.25	59.34	1,882.4	75.8	127.8	148.6	0.00	0.00	0.00
2,000.0	16.25	59.34	1,978.4	90.1	151.9	176.6	0.00	0.00	0.00
2,100.0	16.25	59.34	2,074.4	104.3	176.0	204.6	0.00	0.00	0.00
2,200.0	16.25	59.34	2,170.5	118.6	200.1	232.6	0.00	0.00	0.00
2,300.0	16.25	59.34	2,266.5	132.9	224.1	260.6	0.00	0.00	0.00
2,400.0	16.25	59.34	2,362.5	147.2	248.2	288.6	0.00	0.00	0.00
2,500.0	16.25	59.34	2,458.5	161.4	272.3	316.5	0.00	0.00	0.00
2,600.0	16.25	59.34	2,554.5	175.7	296.4	344.5	0.00	0.00	0.00
2,700.0	16.25	59.34	2,650.5	190.0	320.4	372.5	0.00	0.00	0.00
2,800.0	16.25	59.34	2,746.5	204.3	344.5	400.5	0.00	0.00	0.00
2,900.0	16.25	59.34	2,842.5	218.5	368.6	428.5	0.00	0.00	0.00
3,000.0	16.25	59.34	2,938.5	232.8	392.7	456.5	0.00	0.00	0.00
3,100.0	16.25	59.34	3,034.5	247.1	416.7	484.5	0.00	0.00	0.00
3,200.0	16.25	59.34	3,130.5	261.4	440.8	512.5	0.00	0.00	0.00
3,226.0	16.25	59.34	3,155.4	265.1	447.1	519.7	0.00	0.00	0.00
WF									
3,300.0	16.25	59.34	3,226.5	275.6	464.9	540.5	0.00	0.00	0.00
3,400.0	16.25	59.34	3,322.5	289.9	489.0	568.5	0.00	0.00	0.00
3,500.0	16.25	59.34	3,418.5	304.2	513.0	596.4	0.00	0.00	0.00
3,600.0	16.25	59.34	3,514.5	318.5	537.1	624.4	0.00	0.00	0.00
3,700.0	16.25	59.34	3,610.5	332.7	561.2	652.4	0.00	0.00	0.00
3,800.0	16.25	59.34	3,706.5	347.0	585.3	680.4	0.00	0.00	0.00
3,846.8	16.25	59.34	3,751.4	353.7	596.5	693.5	0.00	0.00	0.00
Start Drop -3.00									
3,900.0	14.66	59.34	3,802.7	360.9	608.7	707.7	3.00	-3.00	0.00
4,000.0	11.66	59.34	3,900.1	372.5	628.3	730.5	3.00	-3.00	0.00
4,100.0	8.66	59.34	3,998.5	381.5	643.5	748.1	3.00	-3.00	0.00
4,200.0	5.66	59.34	4,097.7	387.9	654.2	760.6	3.00	-3.00	0.00
4,300.0	2.66	59.34	4,197.4	391.6	660.4	767.8	3.00	-3.00	0.00
4,388.6	0.00	0.00	4,286.0	392.6	662.2	769.9	3.00	-3.00	0.00
Start 2784.0 hold at 4388.6 MD - J4 TGT									
4,389.0	0.00	0.00	4,286.4	392.6	662.2	769.9	0.00	0.00	0.00

Database:	MasterDB	Local Co-ordinate Reference:	Well Valley Farms J4
Company:	Ursa Operating Company, LLC	TVD Reference:	Valley Farms J4 @ 5552.4usft (PAD Est KB)
Project:	Rockies Region	MD Reference:	Valley Farms J4 @ 5552.4usft (PAD Est KB)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
Top of Gas									
4,400.0	0.00	0.00	4,297.4	392.6	662.2	769.9	0.00	0.00	0.00
4,500.0	0.00	0.00	4,397.4	392.6	662.2	769.9	0.00	0.00	0.00
4,600.0	0.00	0.00	4,497.4	392.6	662.2	769.9	0.00	0.00	0.00
4,700.0	0.00	0.00	4,597.4	392.6	662.2	769.9	0.00	0.00	0.00
4,800.0	0.00	0.00	4,697.4	392.6	662.2	769.9	0.00	0.00	0.00
4,900.0	0.00	0.00	4,797.4	392.6	662.2	769.9	0.00	0.00	0.00
5,000.0	0.00	0.00	4,897.4	392.6	662.2	769.9	0.00	0.00	0.00
5,100.0	0.00	0.00	4,997.4	392.6	662.2	769.9	0.00	0.00	0.00
5,200.0	0.00	0.00	5,097.4	392.6	662.2	769.9	0.00	0.00	0.00
5,300.0	0.00	0.00	5,197.4	392.6	662.2	769.9	0.00	0.00	0.00
5,400.0	0.00	0.00	5,297.4	392.6	662.2	769.9	0.00	0.00	0.00
5,500.0	0.00	0.00	5,397.4	392.6	662.2	769.9	0.00	0.00	0.00
5,600.0	0.00	0.00	5,497.4	392.6	662.2	769.9	0.00	0.00	0.00
5,687.0	0.00	0.00	5,584.4	392.6	662.2	769.9	0.00	0.00	0.00
Cameo									
5,700.0	0.00	0.00	5,597.4	392.6	662.2	769.9	0.00	0.00	0.00
5,800.0	0.00	0.00	5,697.4	392.6	662.2	769.9	0.00	0.00	0.00
5,900.0	0.00	0.00	5,797.4	392.6	662.2	769.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,897.4	392.6	662.2	769.9	0.00	0.00	0.00
6,100.0	0.00	0.00	5,997.4	392.6	662.2	769.9	0.00	0.00	0.00
6,200.0	0.00	0.00	6,097.4	392.6	662.2	769.9	0.00	0.00	0.00
6,300.0	0.00	0.00	6,197.4	392.6	662.2	769.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,297.4	392.6	662.2	769.9	0.00	0.00	0.00
6,500.0	0.00	0.00	6,397.4	392.6	662.2	769.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,497.4	392.6	662.2	769.9	0.00	0.00	0.00
6,700.0	0.00	0.00	6,597.4	392.6	662.2	769.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,697.4	392.6	662.2	769.9	0.00	0.00	0.00
6,873.0	0.00	0.00	6,770.4	392.6	662.2	769.9	0.00	0.00	0.00
Rollins									
6,900.0	0.00	0.00	6,797.4	392.6	662.2	769.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,897.4	392.6	662.2	769.9	0.00	0.00	0.00
7,100.0	0.00	0.00	6,997.4	392.6	662.2	769.9	0.00	0.00	0.00
7,172.6	0.00	0.00	7,070.0	392.6	662.2	769.9	0.00	0.00	0.00
TD at 7172.6									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
J4 TGT	0.00	0.00	4,286.0	392.6	662.2	1,626,674.13	2,402,648.53	39° 32' 5.583 N	107° 37' 5.249 W
- hit/miss target									
- Shape									
- plan hits target center									
- Rectangle (sides W100.0 H40.0 D2,784.0)									

Database:	MasterDB	Local Co-ordinate Reference:	Well Valley Farms J4
Company:	Ursa Operating Company, LLC	TVD Reference:	Valley Farms J4 @ 5552.4usft (PAD Est KB)
Project:	Rockies Region	MD Reference:	Valley Farms J4 @ 5552.4usft (PAD Est KB)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,226.0	3,155.4	WF		0.00	
4,389.0	4,286.4	Top of Gas		0.00	
5,687.0	5,584.4	Cameo		0.00	
6,873.0	6,770.4	Rollins		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,100.0	1,100.0	0.0	0.0	Start Build 3.00
1,641.8	1,634.6	38.9	65.7	Start 2205.0 hold at 1641.8 MD
3,846.8	3,751.4	353.7	596.5	Start Drop -3.00
4,388.6	4,286.0	392.6	662.2	Start 2784.0 hold at 4388.6 MD
7,172.6	7,070.0	392.6	662.2	TD at 7172.6



Well Name: Valley Farms J4
Surface Location: Valley Farms J
North American Datum 1983 US State Plane 1983 Colorado Central Zone
Ground Elevation: 5537.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1626297.06 2401977.34 39° 32' 1.702 N 107° 37' 13.702 W
PAD Est KB Valley Farms J4 @ 5552.4usft (PAD Est KB)



Azimuths to True North
Magnetic North: 9.87°
Magnetic Field
Strength: 52137.4snT
Dip Angle: 65.79°
Date: 9/5/2013
Model: IGRF200510

Valley Farms J
Valley Farms J4
Design #2
12:32, March 03 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
J4 TGT	4286.0	392.6	662.2	1626674.14	2402648.52	39° 32' 5.583 N	107° 37' 5.249 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	1641.8	16.25	59.34	1634.6	38.9	65.7	3.00	59.34	76.3	
4	3846.8	16.25	59.34	3751.4	353.7	596.5	0.00	0.00	693.5	
5	4388.6	0.00	0.00	4286.0	392.6	662.2	3.00	180.00	769.9	J4 TGT
6	7172.6	0.00	0.00	7070.0	392.6	662.2	0.00	0.00	769.9	

ANNOTATIONS

TVD	MD	Annotation
1100.0	1100.0	Start Build 3.00
1634.6	1641.8	Start 2205.0 hold at 1641.8 MD
3751.4	3846.8	Start Drop -3.00
4286.0	4388.6	Start 2784.0 hold at 4388.6 MD
7070.0	7172.6	TD at 7172.6

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3155.4	3226.0	WF	0.00	
4286.4	4389.0	Top of Gas	0.00	
5584.4	5687.0	Cameo	0.00	
6770.4	6873.0	Rollins	0.00	

