



Ursa Operating Company, LLC

Rockies Region

Valley Farms J

Valley Farms J10

Wellbore #1

Plan: Design #1

Standard Planning Report

08 September, 2013



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Valley Farms J10
Company:	Ursa Operating Company, LLC	TVD Reference:	Valley Farms J10 @ 5552.4ft (Original Well Elev)
Project:	Rockies Region	MD Reference:	Valley Farms J10 @ 5552.4ft (Original Well Elev)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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 ft	Latitude:	39° 32' 2.073 N
From:	Lat/Long	Easting:	2,401,977.73 ft	Longitude:	107° 37' 13.708 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.34 °

Well	Valley Farms J10, SHL LAT: 39.533688800 LONG: -107.620550600					
Well Position	+N/-S	-80.3 ft	Northing:	1,626,254.83 ft	Latitude:	39° 32' 1.280 N
	+E/-W	-21.5 ft	Easting:	2,401,954.37 ft	Longitude:	107° 37' 13.982 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	5,552.4 ft	Ground Level:	5,537.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/8/2013	9.86	65.79	52,137

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	202.94

Plan Sections										
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	
2,062.8	28.89	202.94	2,022.6	-218.8	-92.6	3.00	3.00	0.00	202.94	
3,791.8	28.89	202.94	3,536.4	-988.0	-418.1	0.00	0.00	0.00	0.00	
4,754.6	0.00	0.00	4,459.0	-1,206.8	-510.6	3.00	-3.00	0.00	180.00	J10 TGT
7,538.6	0.00	0.00	7,243.0	-1,206.8	-510.6	0.00	0.00	0.00	0.00	

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Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	202.94	1,200.0	-2.4	-1.0	2.6	3.00	3.00	0.00
1,300.0	6.00	202.94	1,299.6	-9.6	-4.1	10.5	3.00	3.00	0.00
1,400.0	9.00	202.94	1,398.8	-21.7	-9.2	23.5	3.00	3.00	0.00
1,500.0	12.00	202.94	1,497.1	-38.4	-16.3	41.7	3.00	3.00	0.00
1,600.0	15.00	202.94	1,594.3	-59.9	-25.4	65.1	3.00	3.00	0.00
1,700.0	18.00	202.94	1,690.2	-86.1	-36.4	93.5	3.00	3.00	0.00
1,800.0	21.00	202.94	1,784.4	-116.8	-49.4	126.9	3.00	3.00	0.00
1,900.0	24.00	202.94	1,876.8	-152.1	-64.3	165.1	3.00	3.00	0.00
2,000.0	27.00	202.94	1,967.1	-191.7	-81.1	208.2	3.00	3.00	0.00
2,062.8	28.89	202.94	2,022.6	-218.8	-92.6	237.6	3.00	3.00	0.00
Start 1729.0 hold at 2062.8 MD									
2,100.0	28.89	202.94	2,055.1	-235.4	-99.6	255.6	0.00	0.00	0.00
2,200.0	28.89	202.94	2,142.7	-279.8	-118.4	303.9	0.00	0.00	0.00
2,300.0	28.89	202.94	2,230.2	-324.3	-137.2	352.2	0.00	0.00	0.00
2,400.0	28.89	202.94	2,317.8	-368.8	-156.1	400.5	0.00	0.00	0.00
2,500.0	28.89	202.94	2,405.3	-413.3	-174.9	448.8	0.00	0.00	0.00
2,600.0	28.89	202.94	2,492.9	-457.8	-193.7	497.1	0.00	0.00	0.00
2,700.0	28.89	202.94	2,580.5	-502.3	-212.5	545.4	0.00	0.00	0.00
2,800.0	28.89	202.94	2,668.0	-546.8	-231.4	593.7	0.00	0.00	0.00
2,900.0	28.89	202.94	2,755.6	-591.2	-250.2	642.0	0.00	0.00	0.00
3,000.0	28.89	202.94	2,843.1	-635.7	-269.0	690.3	0.00	0.00	0.00
3,100.0	28.89	202.94	2,930.7	-680.2	-287.8	738.6	0.00	0.00	0.00
3,200.0	28.89	202.94	3,018.3	-724.7	-306.7	786.9	0.00	0.00	0.00
3,300.0	28.89	202.94	3,105.8	-769.2	-325.5	835.2	0.00	0.00	0.00
3,400.0	28.89	202.94	3,193.4	-813.7	-344.3	883.5	0.00	0.00	0.00
3,500.0	28.89	202.94	3,280.9	-858.2	-363.1	931.8	0.00	0.00	0.00
3,554.2	28.89	202.94	3,328.4	-882.3	-373.3	958.0	0.00	0.00	0.00
WF									
3,600.0	28.89	202.94	3,368.5	-902.7	-381.9	980.1	0.00	0.00	0.00
3,700.0	28.89	202.94	3,456.1	-947.1	-400.8	1,028.4	0.00	0.00	0.00
3,791.8	28.89	202.94	3,536.4	-988.0	-418.1	1,072.8	0.00	0.00	0.00
Start Drop -3.00									
3,800.0	28.64	202.94	3,543.6	-991.6	-419.6	1,076.7	3.00	-3.00	0.00
3,900.0	25.64	202.94	3,632.6	-1,033.6	-437.4	1,122.3	3.00	-3.00	0.00
4,000.0	22.64	202.94	3,723.8	-1,071.3	-453.3	1,163.2	3.00	-3.00	0.00
4,100.0	19.64	202.94	3,817.1	-1,104.5	-467.4	1,199.3	3.00	-3.00	0.00
4,200.0	16.64	202.94	3,912.1	-1,133.2	-479.5	1,230.4	3.00	-3.00	0.00
4,300.0	13.64	202.94	4,008.6	-1,157.2	-489.7	1,256.5	3.00	-3.00	0.00
4,400.0	10.64	202.94	4,106.4	-1,176.6	-497.9	1,277.6	3.00	-3.00	0.00

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Well:	Valley Farms J10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
4,500.0	7.64	202.94	4,205.1	-1,191.2	-504.0	1,293.4	3.00	-3.00	0.00
4,600.0	4.64	202.94	4,304.5	-1,201.0	-508.2	1,304.1	3.00	-3.00	0.00
4,700.0	1.64	202.94	4,404.4	-1,206.1	-510.3	1,309.6	3.00	-3.00	0.00
4,754.6	0.00	0.00	4,459.0	-1,206.8	-510.6	1,310.4	3.00	-3.00	0.00
Start 2784.0 hold at 4754.6 MD									
4,755.0	0.00	0.00	4,459.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
Top of Gas									
4,800.0	0.00	0.00	4,504.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
4,900.0	0.00	0.00	4,604.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,000.0	0.00	0.00	4,704.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,100.0	0.00	0.00	4,804.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,200.0	0.00	0.00	4,904.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,300.0	0.00	0.00	5,004.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,104.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,500.0	0.00	0.00	5,204.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,304.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,700.0	0.00	0.00	5,404.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,504.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
5,900.0	0.00	0.00	5,604.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,704.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,053.0	0.00	0.00	5,757.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
Cameo									
6,100.0	0.00	0.00	5,804.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,200.0	0.00	0.00	5,904.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,300.0	0.00	0.00	6,004.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,104.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,500.0	0.00	0.00	6,204.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,304.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,700.0	0.00	0.00	6,404.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,504.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
6,900.0	0.00	0.00	6,604.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,704.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
7,100.0	0.00	0.00	6,804.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
7,200.0	0.00	0.00	6,904.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
7,239.0	0.00	0.00	6,943.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
Rollins									
7,300.0	0.00	0.00	7,004.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
7,400.0	0.00	0.00	7,104.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
7,500.0	0.00	0.00	7,204.4	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
7,538.6	0.00	0.00	7,243.0	-1,206.8	-510.6	1,310.4	0.00	0.00	0.00
TD at 7538.6									

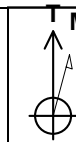
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Project:	Rockies Region	MD Reference:	Valley Farms J10 @ 5552.4ft (Original Well Elev)
Site:	Valley Farms J	North Reference:	True
Well:	Valley Farms J10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,554.2	3,328.4	WF		0.00	
4,755.0	4,459.4	Top of Gas		0.00	
6,053.0	5,757.4	Cameo		0.00	
7,239.0	6,943.4	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	
2,062.8	2,022.6	-218.8	-92.6	Start 1729.0 hold at 2062.8 MD	
3,791.8	3,536.4	-988.0	-418.1	Start Drop -3.00	
4,754.6	4,459.0	-1,206.8	-510.6	Start 2784.0 hold at 4754.6 MD	
7,538.6	7,243.0	-1,206.8	-510.6	TD at 7538.6	



Well Name: Valley Farms J10
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 1626254.83 2401954.37 39° 32' 1.280 N 107° 37' 13.982 W
Original Well Elev Valley Farms J10 @ 5552.4ft (Original Well Elev)



Azimuths to True North
Magnetic North: 9.86°
Magnetic Field
Strength: 52136.6snT
Dip Angle: 65.79°
Date: 9/8/2013
Model: IGRF200510

Valley Farms J
Valley Farms J10
Design #1
22:59, September 08 2013

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
J10 TGT	4459.0	-1206.8	-510.6	1625060.28	2401415.70	39° 31' 49.352 N	107° 37' 20.500 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	2062.8	28.89	202.94	2022.6	-218.8	-92.6	3.00	202.94	237.6	
4	3791.8	28.89	202.94	3536.4	-988.0	-418.1	0.00	0.00	1072.8	
5	4754.6	0.00	0.00	4459.0	-1206.8	-510.6	3.00	180.00	1310.4	J10 TGT
6	7243.0	0.00	0.00	7243.0	-1206.8	-510.6	0.00	0.00	1310.4	

ANNOTATIONS

TVD	MD	Annotation
1100.0	1100.0	Start Build 3.00
2022.6	2062.8	Start 1729.0 hold at 2062.8 MD
3536.4	3791.8	Start Drop -3.00
4459.0	4754.6	Start 2784.0 hold at 4754.6 MD
7243.0	7538.6	TD at 7538.6

FORMATION TOP DETAILS

TVDP	MD	Path	Formation
3328.4	3554.2	WF	
4459.4	4755.0	Top of Gas	
5757.4	6053.0	Cameo	
6943.4	7239.0	Rollins	

