



Ursa Operating Company, LLC

Rockies Region

B&V

B&V 13B-07-07-95

Wellbore #1

Plan: Design #1

Ursa Operating Company LLC Planning Report

05 August, 2014



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 13B-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 13B-07-07-95 @ 5097.0usft (PAD Est KB)
Site:	B&V	MD Reference:	B&V 13B-07-07-95 @ 5097.0usft (PAD Est KB)
Well:	B&V 13B-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	MasterDB

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		B&V			
Site Position:		Northing:		Latitude:	
From:	Lat/Long	Easting:		Longitude:	
Position Uncertainty:	0.0 usft	Slot Radius:		Grid Convergence:	
		1,598,935.06 usft		39° 27' 0.591 N	
		2,280,801.73 usft		108° 2' 49.963 W	
		13-3/16 "		-1.61 °	

Well	B&V 13B-07-07-95, SHL LAT: 39.450292723 LONG: -108.047004654					
Well Position	+N/-S	0.0 usft	Northing:	1,598,980.23 usft	Latitude:	39° 27' 1.054 N
	+E/-W	0.0 usft	Easting:	2,280,861.55 usft	Longitude:	108° 2' 49.217 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,097.0 usft	Ground Level:	5,084.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/4/2014	9.97	65.61	51,909

Design	Design #1			
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	358.95

Survey Tool Program		Date	8/4/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	6,374.8	Design #1 (Wellbore #1)	MWD	MWD - Standard	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	-5,097.0	0.0	0.0	0.0	0.00	1,598,980.23	2,280,861.55
100.0	0.00	0.00	100.0	-4,997.0	0.0	0.0	0.0	0.00	1,598,980.23	2,280,861.55
200.0	0.00	0.00	200.0	-4,897.0	0.0	0.0	0.0	0.00	1,598,980.23	2,280,861.55
300.0	0.00	0.00	300.0	-4,797.0	0.0	0.0	0.0	0.00	1,598,980.23	2,280,861.55
400.0	0.00	0.00	400.0	-4,697.0	0.0	0.0	0.0	0.00	1,598,980.23	2,280,861.55
500.0	0.00	0.00	500.0	-4,597.0	0.0	0.0	0.0	0.00	1,598,980.23	2,280,861.55
600.0	0.00	0.00	600.0	-4,497.0	0.0	0.0	0.0	0.00	1,598,980.23	2,280,861.55
Start Build 3.00										
700.0	3.00	358.95	700.0	-4,397.0	2.6	0.0	2.6	3.00	1,598,982.85	2,280,861.57
779.9	5.40	358.95	779.7	-4,317.3	8.5	-0.2	8.5	3.00	1,598,988.70	2,280,861.63
Start 3186.8 hold at 779.9 MD										
800.0	5.40	358.95	799.6	-4,297.4	10.4	-0.2	10.4	0.00	1,598,990.59	2,280,861.65
900.0	5.40	358.95	899.2	-4,197.8	19.8	-0.4	19.8	0.00	1,599,000.00	2,280,861.74
1,000.0	5.40	358.95	998.8	-4,098.2	29.2	-0.5	29.2	0.00	1,599,009.40	2,280,861.83
1,100.0	5.40	358.95	1,098.3	-3,998.7	38.6	-0.7	38.6	0.00	1,599,018.81	2,280,861.93
1,200.0	5.40	358.95	1,197.9	-3,899.1	48.0	-0.9	48.0	0.00	1,599,028.22	2,280,862.02
1,300.0	5.40	358.95	1,297.4	-3,799.6	57.4	-1.0	57.4	0.00	1,599,037.62	2,280,862.11
1,400.0	5.40	358.95	1,397.0	-3,700.0	66.8	-1.2	66.8	0.00	1,599,047.03	2,280,862.20
1,500.0	5.40	358.95	1,496.5	-3,600.5	76.2	-1.4	76.2	0.00	1,599,056.44	2,280,862.29
1,600.0	5.40	358.95	1,596.1	-3,500.9	85.6	-1.6	85.6	0.00	1,599,065.84	2,280,862.39
1,700.0	5.40	358.95	1,695.7	-3,401.3	95.0	-1.7	95.0	0.00	1,599,075.25	2,280,862.48
1,800.0	5.40	358.95	1,795.2	-3,301.8	104.4	-1.9	104.4	0.00	1,599,084.66	2,280,862.57
1,900.0	5.40	358.95	1,894.8	-3,202.2	113.8	-2.1	113.8	0.00	1,599,094.07	2,280,862.66
2,000.0	5.40	358.95	1,994.3	-3,102.7	123.2	-2.2	123.2	0.00	1,599,103.47	2,280,862.76
2,100.0	5.40	358.95	2,093.9	-3,003.1	132.6	-2.4	132.7	0.00	1,599,112.88	2,280,862.85
2,200.0	5.40	358.95	2,193.4	-2,903.6	142.0	-2.6	142.1	0.00	1,599,122.29	2,280,862.94
2,300.0	5.40	358.95	2,293.0	-2,804.0	151.4	-2.8	151.5	0.00	1,599,131.69	2,280,863.03

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Well:	B&V 13B-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	MasterDB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,400.0	5.40	358.95	2,392.5	-2,704.5	160.8	-2.9	160.9	0.00	1,599,141.10	2,280,863.12
2,500.0	5.40	358.95	2,492.1	-2,604.9	170.3	-3.1	170.3	0.00	1,599,150.51	2,280,863.22
2,600.0	5.40	358.95	2,591.7	-2,505.3	179.7	-3.3	179.7	0.00	1,599,159.91	2,280,863.31
2,700.0	5.40	358.95	2,691.2	-2,405.8	189.1	-3.4	189.1	0.00	1,599,169.32	2,280,863.40
2,800.0	5.40	358.95	2,790.8	-2,306.2	198.5	-3.6	198.5	0.00	1,599,178.73	2,280,863.49
2,900.0	5.40	358.95	2,890.3	-2,206.7	207.9	-3.8	207.9	0.00	1,599,188.13	2,280,863.58
3,000.0	5.40	358.95	2,989.9	-2,107.1	217.3	-4.0	217.3	0.00	1,599,197.54	2,280,863.68
3,080.5	5.40	358.95	3,070.0	-2,027.0	224.9	-4.1	224.9	0.00	1,599,205.11	2,280,863.75
Williams Fork										
3,100.0	5.40	358.95	3,089.4	-2,007.6	226.7	-4.1	226.7	0.00	1,599,206.95	2,280,863.77
3,200.0	5.40	358.95	3,189.0	-1,908.0	236.1	-4.3	236.1	0.00	1,599,216.36	2,280,863.86
3,300.0	5.40	358.95	3,288.6	-1,808.4	245.5	-4.5	245.5	0.00	1,599,225.76	2,280,863.95
3,400.0	5.40	358.95	3,388.1	-1,708.9	254.9	-4.7	255.0	0.00	1,599,235.17	2,280,864.05
3,500.0	5.40	358.95	3,487.7	-1,609.3	264.3	-4.8	264.4	0.00	1,599,244.58	2,280,864.14
3,600.0	5.40	358.95	3,587.2	-1,509.8	273.7	-5.0	273.8	0.00	1,599,253.98	2,280,864.23
3,700.0	5.40	358.95	3,686.8	-1,410.2	283.1	-5.2	283.2	0.00	1,599,263.39	2,280,864.32
3,800.0	5.40	358.95	3,786.3	-1,310.7	292.5	-5.3	292.6	0.00	1,599,272.80	2,280,864.41
3,900.0	5.40	358.95	3,885.9	-1,211.1	301.9	-5.5	302.0	0.00	1,599,282.20	2,280,864.51
3,966.7	5.40	358.95	3,952.3	-1,144.7	308.2	-5.6	308.3	0.00	1,599,288.48	2,280,864.57
Start Drop -3.00										
4,000.0	4.40	358.95	3,985.5	-1,111.5	311.1	-5.7	311.1	3.00	1,599,291.32	2,280,864.60
4,100.0	1.40	358.95	4,085.3	-1,011.7	316.1	-5.8	316.2	3.00	1,599,296.38	2,280,864.64
4,146.7	0.00	0.00	4,132.0	-965.0	316.7	-5.8	316.7	3.00	1,599,296.95	2,280,864.65
Back to Vertical - Start 2229.0 hold at 4146.7 MD - Top of Gas - B&V 13B-07-07-95 TGT										
4,200.0	0.00	0.00	4,185.3	-911.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
4,300.0	0.00	0.00	4,285.3	-811.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
4,400.0	0.00	0.00	4,385.3	-711.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
4,500.0	0.00	0.00	4,485.3	-611.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
4,600.0	0.00	0.00	4,585.3	-511.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
4,700.0	0.00	0.00	4,685.3	-411.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
4,800.0	0.00	0.00	4,785.3	-311.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
4,900.0	0.00	0.00	4,885.3	-211.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,000.0	0.00	0.00	4,985.3	-111.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,100.0	0.00	0.00	5,085.3	-11.7	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,200.0	0.00	0.00	5,185.3	88.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,300.0	0.00	0.00	5,285.3	188.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,400.0	0.00	0.00	5,385.3	288.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,500.0	0.00	0.00	5,485.3	388.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,551.7	0.00	0.00	5,537.0	440.0	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
Cameo										
5,600.0	0.00	0.00	5,585.3	488.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,700.0	0.00	0.00	5,685.3	588.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,800.0	0.00	0.00	5,785.3	688.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
5,900.0	0.00	0.00	5,885.3	788.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
6,000.0	0.00	0.00	5,985.3	888.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
6,075.7	0.00	0.00	6,061.0	964.0	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
Rollins										
6,100.0	0.00	0.00	6,085.3	988.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
6,200.0	0.00	0.00	6,185.3	1,088.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
6,300.0	0.00	0.00	6,285.3	1,188.3	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
6,375.7	0.00	0.00	6,361.0	1,264.0	316.7	-5.8	316.7	0.00	1,599,296.95	2,280,864.65
TD at 6375.7										

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Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,551.7	5,537.0	Cameo		0.00		
4,146.7	4,132.0	Top of Gas		0.00		
3,080.5	3,070.0	Williams Fork		0.00		
6,075.7	6,061.0	Rollins		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
600.0	600.0	0.0	0.0	Start Build 3.00	
779.9	779.7	8.5	-0.2	Start 3186.8 hold at 779.9 MD	
3,966.7	3,952.3	308.2	-5.6	Start Drop -3.00	
4,146.7	4,132.0	316.7	-5.8	Back to Vertical	
4,146.7	4,132.0	316.7	-5.8	Start 2229.0 hold at 4146.7 MD	
6,375.7	6,361.0	316.7	-5.8	TD at 6375.7	

Checked By: _____	Approved By: _____	Date: _____
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Well Name: B&V 13B-07-07-95
Surface Location: B&V
North American Datum 1983, US State Plane 1983, Colorado Central Zone
Ground Elevation: 5084.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1598980.23 2280861.55 39° 27' 1.054 N 108° 2' 49.217 W
PAD Est KB B&V 13B-07-07-95 @ 5097.0usft (PAD Est KB)



Azimuths to True North
Magnetic North: 9.97°
Magnetic Field
Strength: 51909.5nT
Dip Angle: 65.61°
Date: 8/4/2014
Model: IGRF2010

B&V
B&V 13B-07-07-95
Design #1
9:38, August 05 2014

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
B&V 13B-07-07-95 TGT	637.0	316.7	-5.8	1599296.95	2280864.65	39° 27' 4.184 N	108° 2' 49.290 W	Rectangle (Sides: L40.0 W100.0)

ANNOTATIONS

TVD	MD	Annotation
600.0	600.0	Start Build 3.00
779.7	779.9	Start 3186.8 hold at 779.9 MD
3952.3	3966.7	Start Drop -3.00
4132.0	4146.7	Back to Vertical
4132.0	4146.7	Start 2229.0 hold at 4146.7 MD
6361.0	6375.7	TD at 6375.7

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	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	779.9	5.40	358.95	779.7	8.5	-0.2	3.00	358.95	8.5	
4	3966.7	5.40	358.95	3952.3	308.2	-5.6	0.00	0.00	308.3	
5	4146.7	0.00	0.00	4132.0	316.7	-5.8	3.00	180.00	316.7	B&V 13B-07-07-95 TGT
6	6375.7	0.00	0.00	6361.0	316.7	-5.8	0.00	0.00	316.7	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3070.0	3080.5	Williams Fork	0.00	
4132.0	4146.7	Top of Gas	0.00	
5537.0	5551.7	Cameo	0.00	
6061.0	6075.7	Rollins	0.00	

