



Ursa Operating Company, LLC

Rockies Region

B&V

B&V 14D-07-07-95

Wellbore #1

Design: Actual

End of Well Report

26 December, 2016



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 14D-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 14D-07-07-95 @ 5101.0usft (Plan KB)
Site:	B&V	MD Reference:	B&V 14D-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 14D-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

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		Using geodetic scale factor

Site		B&V							
Site Position:		Northing:		1,598,935.06	usft	Latitude:		39.450164128	
From:	Lat/Long	Easting:		2,280,801.73	usft	Longitude:		-108.047211920	
Position Uncertainty:		0.0	usft	Slot Radius:		13-3/16	"	Grid Convergence:	-1.61 °

Well		B&V 14D-07-07-95, SHL LAT: 39.450206993 LONG: -108.047142831				
Well Position	+N/-S	0.0 usft	Northing:	1,598,950.13 usft	Latitude:	39.450206993
	+E/-W	0.0 usft	Easting:	2,280,821.67 usft	Longitude:	-108.047142831
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,101.0 usft	Ground Level:	5,084.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/26/2016	9.77	65.55	51,557

Design		Actual			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.0	0.0	0.0	177.37

Survey Program		Date	12/26/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
193.0	6,560.0	Surface (Wellbore #1)	MWD	MWD - Standard	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
193.0	0.09	305.49	193.0	-0.1	0.1	-0.1	0.05	0.05	0.00	
223.0	0.04	251.26	223.0	-0.1	0.1	-0.2	0.25	-0.17	-180.77	
253.0	0.27	262.07	253.0	-0.1	0.1	-0.2	0.77	0.77	36.03	
283.0	0.35	242.47	283.0	-0.1	0.0	-0.4	0.44	0.27	-65.33	
314.0	0.97	201.60	314.0	0.2	-0.3	-0.6	2.39	2.00	-131.84	
344.0	1.79	192.15	344.0	0.9	-0.9	-0.8	2.83	2.73	-31.50	
375.0	2.77	188.51	375.0	2.1	-2.2	-1.0	3.19	3.16	-11.74	
406.0	3.56	187.06	405.9	3.8	-3.9	-1.2	2.56	2.55	-4.68	
436.0	4.04	181.39	435.8	5.8	-5.8	-1.3	2.03	1.60	-18.90	
467.0	4.48	176.86	466.8	8.1	-8.1	-1.3	1.79	1.42	-14.61	
497.0	4.70	178.31	496.7	10.5	-10.5	-1.2	0.83	0.73	4.83	
528.0	4.97	177.74	527.6	13.1	-13.2	-1.1	0.88	0.87	-1.84	
558.0	5.23	178.57	557.4	15.8	-15.8	-1.0	0.90	0.87	2.77	
589.0	5.67	177.41	588.3	18.7	-18.8	-0.9	1.46	1.42	-3.74	
620.0	6.94	177.21	619.1	22.1	-22.2	-0.8	4.10	4.10	-0.65	
650.0	8.27	175.30	648.8	26.1	-26.1	-0.5	4.51	4.43	-6.37	
681.0	9.40	175.98	679.5	30.8	-30.9	-0.1	3.66	3.65	2.19	
711.0	10.55	177.39	709.0	36.0	-36.1	0.2	3.92	3.83	4.70	
742.0	11.47	179.32	739.5	41.9	-42.0	0.3	3.20	2.97	6.23	
773.0	12.13	179.67	769.8	48.3	-48.3	0.4	2.14	2.13	1.13	
803.0	12.74	179.15	799.1	54.7	-54.8	0.5	2.07	2.03	-1.73	
833.0	13.32	179.76	828.3	61.5	-61.5	0.5	1.99	1.93	2.03	
876.0	14.06	180.46	870.1	71.7	-71.7	0.5	1.76	1.72	1.63	
919.0	14.85	179.45	911.7	82.4	-82.4	0.5	1.93	1.84	-2.35	
962.0	15.78	179.50	953.2	93.7	-93.8	0.6	2.16	2.16	0.12	
1,004.0	17.09	179.10	993.5	105.6	-105.7	0.8	3.13	3.12	-0.95	

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Site:	B&V	MD Reference:	B&V 14D-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 14D-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
1,047.0	18.59	179.23	1,034.4	118.8	-118.9	0.9	3.49	3.49	0.30	
1,090.0	20.41	178.18	1,075.0	133.1	-133.2	1.3	4.31	4.23	-2.44	
1,132.0	22.27	177.82	1,114.1	148.4	-148.5	1.8	4.44	4.43	-0.86	
1,175.0	24.60	177.35	1,153.5	165.5	-165.6	2.5	5.44	5.42	-1.09	
1,261.0	29.71	176.38	1,230.0	204.7	-204.7	4.7	5.96	5.94	-1.13	
1,303.0	31.38	177.17	1,266.2	226.1	-226.0	5.9	4.09	3.98	1.88	
1,346.0	31.95	177.52	1,302.8	248.7	-248.6	7.0	1.39	1.33	0.81	
1,388.0	32.21	177.34	1,338.4	271.0	-270.9	8.0	0.66	0.62	-0.43	
1,431.0	32.70	176.68	1,374.7	294.0	-293.9	9.2	1.41	1.14	-1.53	
1,474.0	33.00	176.46	1,410.8	317.4	-317.2	10.6	0.75	0.70	-0.51	
1,559.0	34.51	175.49	1,481.5	364.6	-364.3	13.9	1.89	1.78	-1.14	
1,645.0	35.95	174.40	1,551.7	414.1	-413.7	18.3	1.83	1.67	-1.27	
1,730.0	35.42	176.73	1,620.7	463.7	-463.2	22.1	1.72	-0.62	2.74	
1,790.0	34.54	178.57	1,669.9	498.1	-497.5	23.5	2.29	-1.47	3.07	
Last PZD Surface Survey										
1,868.0	34.72	178.53	1,734.1	542.4	-541.8	24.6	0.23	0.23	-0.05	
1,954.0	33.18	177.08	1,805.4	590.4	-589.8	26.5	2.02	-1.79	-1.69	
2,039.0	32.04	175.63	1,877.0	636.2	-635.5	29.4	1.63	-1.34	-1.71	
2,124.0	31.03	178.57	1,949.5	680.7	-679.9	31.6	2.16	-1.19	3.46	
2,209.0	29.84	178.22	2,022.8	723.7	-723.0	32.8	1.42	-1.40	-0.41	
2,295.0	30.41	178.40	2,097.1	766.9	-766.1	34.1	0.67	0.66	0.21	
2,380.0	29.93	177.48	2,170.6	809.6	-808.8	35.6	0.78	-0.56	-1.08	
2,466.0	29.88	177.61	2,245.2	852.5	-851.6	37.5	0.10	-0.06	0.15	
2,551.0	31.03	178.27	2,318.5	895.5	-894.7	39.0	1.41	1.35	0.78	
2,636.0	30.02	177.14	2,391.7	938.7	-937.8	40.7	1.37	-1.19	-1.33	
2,722.0	30.63	177.26	2,465.9	982.1	-981.2	42.9	0.71	0.71	0.14	
2,807.0	31.30	177.94	2,538.8	1,025.9	-1,024.9	44.7	0.89	0.79	0.80	

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Site:	B&V	MD Reference:	B&V 14D-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 14D-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
2,893.0	31.29	178.00	2,612.3	1,070.5	-1,069.5	46.3	0.04	-0.01	0.07	
2,978.0	32.24	178.20	2,684.5	1,115.3	-1,114.2	47.8	1.12	1.12	0.24	
3,063.0	31.38	177.56	2,756.8	1,160.1	-1,159.0	49.4	1.09	-1.01	-0.75	
3,149.0	29.88	177.19	2,830.8	1,203.9	-1,202.8	51.4	1.76	-1.74	-0.43	
3,234.0	28.49	176.47	2,905.0	1,245.3	-1,244.2	53.7	1.69	-1.64	-0.85	
3,320.0	26.67	176.60	2,981.2	1,285.1	-1,283.9	56.1	2.12	-2.12	0.15	
3,405.0	24.43	176.77	3,057.9	1,321.8	-1,320.5	58.2	2.64	-2.64	0.20	
3,491.0	25.62	177.34	3,135.8	1,358.2	-1,356.8	60.1	1.41	1.38	0.66	
3,576.0	26.02	177.87	3,212.3	1,395.2	-1,393.8	61.6	0.54	0.47	0.62	
3,661.0	23.91	178.79	3,289.4	1,431.1	-1,429.7	62.7	2.52	-2.48	1.08	
3,747.0	21.68	178.87	3,368.7	1,464.4	-1,463.0	63.4	2.59	-2.59	0.09	
3,832.0	19.69	178.40	3,448.2	1,494.4	-1,493.0	64.1	2.35	-2.34	-0.55	
3,918.0	17.53	177.52	3,529.7	1,521.8	-1,520.4	65.1	2.53	-2.51	-1.02	
4,003.0	15.78	178.84	3,611.1	1,546.2	-1,544.8	65.8	2.11	-2.06	1.55	
4,089.0	14.56	179.66	3,694.1	1,568.7	-1,567.3	66.1	1.44	-1.42	0.95	
4,174.0	12.15	182.88	3,776.8	1,588.3	-1,586.9	65.8	2.97	-2.84	3.79	
4,259.0	8.35	184.90	3,860.4	1,603.3	-1,602.0	64.8	4.49	-4.47	2.38	
4,344.0	6.46	182.21	3,944.7	1,614.2	-1,612.9	64.1	2.26	-2.22	-3.16	
4,430.0	4.16	185.87	4,030.4	1,622.1	-1,620.9	63.6	2.70	-2.67	4.26	
4,430.4	4.15	185.91	4,030.7	1,622.1	-1,620.9	63.6	1.58	-1.40	10.32	
B&V 14D-07-07-95 TGT										
4,515.0	3.04	197.94	4,115.2	1,627.2	-1,626.1	62.6	1.58	-1.32	14.22	
4,601.0	0.87	249.22	4,201.1	1,629.6	-1,628.5	61.2	3.01	-2.52	59.63	
4,686.0	1.30	330.77	4,286.1	1,628.9	-1,627.9	60.2	1.71	0.51	95.94	
4,772.0	1.31	308.08	4,372.1	1,627.4	-1,626.4	58.9	0.60	0.01	-26.38	
4,803.8	1.37	304.35	4,403.9	1,626.9	-1,626.0	58.3	0.34	0.20	-11.74	
B&V 14D-07-07-95 TGT 2										

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Site:	B&V	MD Reference:	B&V 14D-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 14D-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
4,857.0	1.49	298.85	4,457.1	1,626.2	-1,625.3	57.2	0.34	0.22	-10.33
4,942.0	1.48	274.27	4,542.0	1,625.5	-1,624.7	55.1	0.74	-0.01	-28.92
5,027.0	0.93	323.48	4,627.0	1,624.8	-1,624.0	53.6	1.32	-0.65	57.89
5,113.0	1.58	358.09	4,713.0	1,623.0	-1,622.3	53.2	1.13	0.76	40.24
5,198.0	1.36	332.82	4,798.0	1,620.9	-1,620.2	52.7	0.80	-0.26	-29.73
5,284.0	1.37	309.37	4,884.0	1,619.3	-1,618.6	51.4	0.65	0.01	-27.27
5,369.0	1.19	295.29	4,968.9	1,618.2	-1,617.6	49.8	0.42	-0.21	-16.56
5,455.0	1.10	280.02	5,054.9	1,617.6	-1,617.1	48.2	0.37	-0.10	-17.76
5,540.0	1.47	268.17	5,139.9	1,617.4	-1,617.0	46.3	0.53	0.44	-13.94
5,625.0	0.83	212.90	5,224.9	1,617.9	-1,617.5	44.9	1.42	-0.75	-65.02
5,711.0	0.48	224.72	5,310.9	1,618.7	-1,618.3	44.3	0.43	-0.41	13.74
5,796.0	0.53	209.82	5,395.9	1,619.2	-1,618.9	43.8	0.16	0.06	-17.53
5,881.0	0.83	225.11	5,480.9	1,620.0	-1,619.7	43.2	0.41	0.35	17.99
5,966.0	1.43	224.74	5,565.9	1,621.1	-1,620.9	42.0	0.71	0.71	-0.44
6,051.0	1.23	218.43	5,650.8	1,622.5	-1,622.4	40.7	0.29	-0.24	-7.42
6,136.0	1.80	218.17	5,735.8	1,624.2	-1,624.1	39.3	0.67	0.67	-0.31
6,222.0	1.61	215.82	5,821.8	1,626.2	-1,626.2	37.8	0.24	-0.22	-2.73
6,307.0	1.80	212.02	5,906.7	1,628.2	-1,628.3	36.4	0.26	0.22	-4.47
6,392.0	2.37	211.05	5,991.7	1,630.8	-1,630.9	34.8	0.67	0.67	-1.14
6,478.0	2.37	207.23	6,077.6	1,633.8	-1,634.0	33.0	0.18	0.00	-4.44
6,500.0	2.37	208.11	6,099.6	1,634.6	-1,634.8	32.6	0.17	0.00	4.00
Last PZD Survey									
6,560.0	2.37	208.11	6,159.5	1,636.7	-1,637.0	31.4	0.00	0.00	0.00
Straight Line Projection to TD									

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Project: Rockies Region
Site: B&V
Well: B&V 14D-07-07-95
Wellbore: Wellbore #1
Design: Actual

Local Co-ordinate Reference: Well B&V 14D-07-07-95
TVD Reference: B&V 14D-07-07-95 @ 5101.0usft (Plan KB)
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North Reference: True
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Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,790.0	1,669.9	-497.5	23.5	Last PZD Surface Survey
6,500.0	6,099.6	-1,634.8	32.6	Last PZD Survey
6,560.0	6,159.5	-1,637.0	31.4	Straight Line Projection to TD

Checked By: _____ Approved By: _____ Date: _____

