



Ursa Operating Company, LLC

Rockies Region

Monument Ridge B

Monument Ridge B 24C-08-07-95

Wellbore #1

Design: Actual

End of Well Report

02 November, 2016



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Monument Ridge B 24C-08-07-95
Project:	Rockies Region	TVD Reference:	Monument Ridge B 24C-08-07-95 @ 5718.8usft (PLAN
Site:	Monument Ridge B	MD Reference:	Monument Ridge B 24C-08-07-95 @ 5718.8usft (PLAN
Well:	Monument Ridge B 24C-08-07-95	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		

Site	Monument Ridge B					
Site Position:		Northing:	1,596,716.56	usft	Latitude:	39.444583700°N
From:	Lat/Long	Easting:	2,287,433.43	usft	Longitude:	108.023518100°W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16	"	Grid Convergence:	-1.59 °

Well		Monument Ridge B 24C-08-07-95, SHL: 39.447723033 -108.012276383				
Well Position	+N/-S	0.0 usft	Northing:	1,597,771.59 usft	Latitude:	39.447723009°N
	+E/-W	0.0 usft	Easting:	2,290,638.57 usft	Longitude:	108.012276383°W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,718.8 usft	Ground Level:	5,701.8 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/2/2016	9.77	65.56	51,572

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	261.27

Survey Program		Date	11/2/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
86.0	8,060.0	Actual (Wellbore #1)	MWD	MWD - Standard	

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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	
86.0	0.92	308.30	86.0	0.5	0.4	-0.5	1.07	1.07	0.00	
115.0	0.88	309.10	115.0	0.8	0.7	-0.9	0.14	-0.14	2.76	
146.0	0.40	280.19	146.0	1.0	0.9	-1.2	1.82	-1.55	-93.26	
176.0	0.53	185.40	176.0	1.2	0.8	-1.3	2.30	0.43	-315.97	
206.0	0.92	174.41	206.0	1.2	0.4	-1.3	1.37	1.30	-36.63	
235.0	0.97	156.00	235.0	1.2	-0.1	-1.2	1.06	0.17	-63.48	
265.0	0.92	161.84	265.0	1.1	-0.5	-1.0	0.36	-0.17	19.47	
296.0	0.29	144.97	296.0	1.0	-0.8	-0.9	2.09	-2.03	-54.42	
327.0	0.44	36.25	327.0	0.9	-0.8	-0.8	1.93	0.48	-350.71	
357.0	0.66	17.26	357.0	0.7	-0.5	-0.6	0.94	0.73	-63.30	
388.0	0.62	11.42	388.0	0.6	-0.2	-0.5	0.25	-0.13	-18.84	
418.0	0.75	9.70	418.0	0.5	0.1	-0.5	0.44	0.43	-5.73	
449.0	0.70	0.12	449.0	0.4	0.5	-0.5	0.42	-0.16	-30.90	
479.0	0.48	312.88	479.0	0.4	0.8	-0.5	1.71	-0.73	-157.47	
510.0	0.92	279.26	510.0	0.7	0.9	-0.9	1.88	1.42	-108.45	
540.0	1.70	260.84	540.0	1.4	0.9	-1.6	2.92	2.60	-61.40	
571.0	2.64	251.18	570.9	2.6	0.6	-2.7	3.24	3.03	-31.16	
602.0	3.69	245.82	601.9	4.2	0.0	-4.3	3.52	3.39	-17.29	
632.0	4.83	247.18	631.8	6.4	-0.9	-6.3	3.81	3.80	4.53	
663.0	6.15	247.31	662.7	9.3	-2.1	-9.1	4.26	4.26	0.42	
693.0	7.21	249.34	692.5	12.7	-3.4	-12.3	3.62	3.53	6.77	
723.0	8.22	248.06	722.2	16.6	-4.8	-16.1	3.41	3.37	-4.27	
754.0	9.01	248.54	752.8	21.1	-6.5	-20.4	2.56	2.55	1.55	
784.0	10.06	251.27	782.4	26.0	-8.2	-25.0	3.81	3.50	9.10	
815.0	10.85	254.35	812.9	31.6	-9.9	-30.4	3.12	2.55	9.94	
845.0	11.74	257.39	842.3	37.4	-11.3	-36.1	3.57	2.97	10.13	

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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)
888.0	13.23	259.45	884.3	46.7	-13.2	-45.2	3.62	3.47	4.79
930.0	14.94	258.70	925.0	56.9	-15.1	-55.2	4.09	4.07	-1.79
973.0	16.48	258.96	966.4	68.5	-17.4	-66.7	3.59	3.58	0.60
1,016.0	18.19	257.33	1,007.5	81.3	-20.0	-79.2	4.13	3.98	-3.79
1,059.0	19.54	257.68	1,048.2	95.2	-23.0	-92.8	3.15	3.14	0.81
1,101.0	20.93	258.81	1,087.6	109.7	-26.0	-107.0	3.44	3.31	2.69
1,144.0	22.22	261.18	1,127.6	125.5	-28.7	-122.6	3.62	3.00	5.51
1,187.0	23.41	263.50	1,167.2	142.2	-30.9	-139.1	3.47	2.77	5.40
1,230.0	25.00	265.20	1,206.4	159.8	-32.7	-156.6	4.04	3.70	3.95
1,272.0	26.61	265.50	1,244.2	178.0	-34.1	-174.9	3.85	3.83	0.71
1,315.0	28.34	265.20	1,282.4	197.8	-35.7	-194.6	4.04	4.02	-0.70
1,358.0	30.19	264.10	1,319.9	218.8	-37.7	-215.6	4.48	4.30	-2.56
1,401.0	32.08	263.35	1,356.7	241.0	-40.1	-237.7	4.49	4.40	-1.74
1,444.0	33.76	262.26	1,392.8	264.4	-43.1	-260.8	4.14	3.91	-2.53
1,486.0	35.11	261.60	1,427.4	288.1	-46.4	-284.4	3.33	3.21	-1.57
1,529.0	36.69	260.81	1,462.3	313.3	-50.3	-309.3	3.83	3.67	-1.84
1,572.0	38.23	260.67	1,496.4	339.5	-54.5	-335.1	3.59	3.58	-0.33
1,614.0	39.24	261.29	1,529.2	365.7	-58.6	-361.0	2.58	2.40	1.48
1,657.0	40.56	261.77	1,562.1	393.3	-62.7	-388.3	3.15	3.07	1.12
1,700.0	42.14	261.16	1,594.4	421.7	-66.9	-416.4	3.79	3.67	-1.42
1,742.0	43.59	260.54	1,625.2	450.3	-71.4	-444.6	3.60	3.45	-1.48
1,785.0	44.21	260.54	1,656.2	480.1	-76.3	-474.0	1.44	1.44	0.00
Last PZD Surface Survey									
1,874.0	44.52	259.88	1,719.8	542.3	-86.9	-535.3	0.62	0.35	-0.74
1,959.0	44.38	261.29	1,780.5	601.9	-96.6	-594.1	1.17	-0.16	1.66
2,045.0	44.80	261.87	1,841.7	662.2	-105.5	-653.8	0.68	0.49	0.67
2,130.0	45.48	260.72	1,901.7	722.5	-114.6	-713.3	1.25	0.80	-1.35

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2,215.0	45.09	260.19	1,961.5	782.9	-124.6	-772.9	0.64	-0.46	-0.62	
2,301.0	45.53	259.79	2,022.0	844.0	-135.3	-833.1	0.61	0.51	-0.47	
2,386.0	45.97	259.36	2,081.3	904.9	-146.3	-893.0	0.63	0.52	-0.51	
2,471.0	45.00	259.31	2,140.9	965.4	-157.5	-952.6	1.14	-1.14	-0.06	
2,557.0	44.17	260.19	2,202.1	1,025.8	-168.2	-1,012.0	1.20	-0.97	1.02	
2,642.0	43.64	261.03	2,263.4	1,084.7	-177.9	-1,070.1	0.93	-0.62	0.99	
2,727.0	44.65	260.98	2,324.4	1,143.9	-187.1	-1,128.6	1.19	1.19	-0.06	
2,813.0	44.78	261.07	2,385.5	1,204.4	-196.5	-1,188.4	0.17	0.15	0.10	
2,898.0	44.87	262.12	2,445.8	1,264.3	-205.3	-1,247.6	0.88	0.11	1.24	
2,983.0	44.96	261.99	2,506.0	1,324.3	-213.6	-1,307.1	0.15	0.11	-0.15	
3,069.0	45.13	261.86	2,566.7	1,385.2	-222.1	-1,367.3	0.22	0.20	-0.15	
3,154.0	45.09	262.70	2,626.7	1,445.4	-230.2	-1,427.0	0.70	-0.05	0.99	
3,239.0	45.53	262.65	2,686.5	1,505.8	-237.9	-1,486.9	0.52	0.52	-0.06	
3,325.0	45.53	262.21	2,746.7	1,567.2	-246.0	-1,547.8	0.37	0.00	-0.51	
3,410.0	44.43	261.07	2,806.9	1,627.3	-254.8	-1,607.2	1.60	-1.29	-1.34	
3,496.0	44.74	261.20	2,868.1	1,687.6	-264.1	-1,666.9	0.38	0.36	0.15	
3,581.0	45.25	261.00	2,928.2	1,747.7	-273.4	-1,726.2	0.62	0.60	-0.24	
3,666.0	45.48	261.20	2,987.9	1,808.2	-282.7	-1,786.0	0.32	0.27	0.24	
3,752.0	44.23	260.73	3,048.9	1,868.9	-292.2	-1,845.9	1.50	-1.45	-0.55	
3,837.0	42.85	260.54	3,110.5	1,927.4	-301.8	-1,903.7	1.63	-1.62	-0.22	
3,922.0	43.86	261.25	3,172.3	1,985.8	-311.0	-1,961.3	1.32	1.19	0.84	
4,008.0	44.96	262.39	3,233.8	2,045.9	-319.6	-2,020.9	1.58	1.28	1.33	
4,093.0	45.85	262.35	3,293.4	2,106.5	-327.6	-2,080.8	1.05	1.05	-0.05	
4,178.0	45.70	262.39	3,352.7	2,167.4	-335.7	-2,141.2	0.18	-0.18	0.05	
4,263.0	44.96	261.11	3,412.5	2,227.8	-344.3	-2,201.0	1.38	-0.87	-1.51	
4,349.0	44.47	260.59	3,473.6	2,288.3	-354.0	-2,260.8	0.71	-0.57	-0.60	
4,434.0	43.99	260.19	3,534.5	2,347.6	-363.9	-2,319.2	0.65	-0.56	-0.47	

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4,520.0	43.81	259.40	3,596.5	2,407.2	-374.4	-2,377.9	0.67	-0.21	-0.92
4,605.0	43.11	260.94	3,658.2	2,465.7	-384.4	-2,435.5	1.49	-0.82	1.81
4,691.0	42.85	260.06	3,721.1	2,524.3	-394.1	-2,493.3	0.76	-0.30	-1.02
4,776.0	41.18	260.41	3,784.2	2,581.2	-403.7	-2,549.4	1.98	-1.96	0.41
4,862.0	39.04	260.22	3,850.0	2,636.6	-413.1	-2,604.0	2.49	-2.49	-0.22
4,947.0	39.20	261.16	3,916.0	2,690.2	-421.7	-2,657.0	0.72	0.19	1.11
5,032.0	38.14	260.98	3,982.3	2,743.3	-430.0	-2,709.4	1.25	-1.25	-0.21
5,117.0	36.47	262.43	4,049.9	2,794.8	-437.4	-2,760.4	2.22	-1.96	1.71
5,202.0	33.05	263.62	4,119.7	2,843.2	-443.3	-2,808.5	4.10	-4.02	1.40
5,288.0	29.31	261.25	4,193.3	2,887.7	-449.1	-2,852.6	4.58	-4.35	-2.76
5,373.0	27.38	260.41	4,268.1	2,928.1	-455.6	-2,892.4	2.32	-2.27	-0.99
5,458.0	24.70	258.43	4,344.5	2,965.4	-462.4	-2,929.1	3.31	-3.15	-2.33
5,544.0	23.51	256.94	4,423.0	3,000.4	-469.9	-2,963.4	1.55	-1.38	-1.73
5,629.0	20.48	258.56	4,501.8	3,032.2	-476.6	-2,994.5	3.64	-3.56	1.91
5,715.0	18.94	264.06	4,582.8	3,061.2	-481.1	-3,023.2	2.80	-1.79	6.40
5,800.0	16.92	267.27	4,663.6	3,087.2	-483.1	-3,049.2	2.64	-2.38	3.78
5,862.1	15.70	267.48	4,723.3	3,104.6	-483.9	-3,066.7	1.97	-1.96	0.34
Monument Ridge B-24C-08-07-95 TGT									
5,885.0	15.25	267.57	4,745.3	3,110.7	-484.1	-3,072.8	1.97	-1.96	0.38
5,971.0	12.00	267.44	4,828.9	3,130.8	-485.0	-3,093.0	3.78	-3.78	-0.15
6,056.0	10.42	265.68	4,912.2	3,147.2	-486.0	-3,109.5	1.90	-1.86	-2.07
6,142.0	10.20	263.62	4,996.9	3,162.6	-487.4	-3,124.8	0.50	-0.26	-2.40
6,227.0	8.66	266.21	5,080.7	3,176.5	-488.7	-3,138.7	1.88	-1.81	3.05
6,313.0	6.02	265.16	5,166.0	3,187.5	-489.5	-3,149.6	3.07	-3.07	-1.22
6,398.0	3.47	250.87	5,250.7	3,194.4	-490.7	-3,156.5	3.28	-3.00	-16.81
6,483.0	1.19	287.74	5,335.6	3,197.8	-491.3	-3,159.8	3.08	-2.68	43.38
6,569.0	0.92	278.30	5,421.6	3,199.2	-490.9	-3,161.3	0.37	-0.31	-10.98

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6,654.0	0.57	259.97	5,506.6	3,200.3	-490.9	-3,162.4	0.49	-0.41	-21.56
6,740.0	1.20	233.83	5,592.6	3,201.5	-491.5	-3,163.6	0.85	0.73	-30.40
6,825.0	0.35	218.13	5,677.6	3,202.5	-492.2	-3,164.4	1.02	-1.00	-18.47
6,910.0	1.80	356.40	5,762.6	3,202.6	-491.1	-3,164.7	2.44	1.71	162.67
6,996.0	1.45	4.17	5,848.5	3,202.2	-488.7	-3,164.7	0.48	-0.41	9.03
7,081.0	1.58	347.11	5,933.5	3,202.0	-486.5	-3,164.9	0.55	0.15	-20.07
7,166.0	0.83	337.53	6,018.5	3,202.3	-484.7	-3,165.4	0.91	-0.88	-11.27
7,252.0	0.31	291.57	6,104.5	3,202.6	-484.1	-3,165.8	0.76	-0.60	-53.44
7,337.0	0.60	264.89	6,189.5	3,203.3	-484.0	-3,166.5	0.41	0.34	-31.39
7,423.0	0.70	225.43	6,275.5	3,204.1	-484.4	-3,167.3	0.52	0.12	-45.88
7,508.0	0.31	347.96	6,360.5	3,204.6	-484.6	-3,167.7	1.06	-0.46	144.15
7,593.0	0.75	32.91	6,445.5	3,204.2	-483.9	-3,167.5	0.68	0.52	52.88
7,678.0	0.31	78.74	6,530.5	3,203.6	-483.4	-3,166.9	0.68	-0.52	53.92
7,764.0	1.25	99.21	6,616.5	3,202.5	-483.5	-3,165.8	1.12	1.09	23.80
7,849.0	0.88	117.24	6,701.4	3,201.1	-483.9	-3,164.3	0.58	-0.44	21.21
7,934.0	0.75	134.90	6,786.4	3,200.2	-484.6	-3,163.3	0.33	-0.15	20.78
7,995.0	0.62	123.48	6,847.4	3,199.7	-485.1	-3,162.8	0.31	-0.21	-18.72
Last PZD Survey									
8,060.0	0.62	123.48	6,912.4	3,199.2	-485.5	-3,162.2	0.00	0.00	0.00
Straightline Projection to TD									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,785.0	1,656.2	-76.3	-474.0	Last PZD Surface Survey
7,995.0	6,847.4	-485.1	-3,162.8	Last PZD Survey
8,060.0	6,912.4	-485.5	-3,162.2	Straightline Projection to TD

