



Ursa Operating Company, LLC

Rockies Region

Monument Ridge B

Monument Ridge B 31D-17-07-95

Wellbore #1

Plan: Design #1

Standard Planning Report

12 June, 2015



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Monument Ridge B 31D-17-07-95
Company:	Ursa Operating Company, LLC	TVD Reference:	Monument Ridge B 31D-17-07-95 @ 5718.8usft (PLAN KB)
Project:	Rockies Region	MD Reference:	Monument Ridge B 31D-17-07-95 @ 5718.8usft (PLAN KB)
Site:	Monument Ridge B	North Reference:	True
Well:	Monument Ridge B 31D-17-07-95	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		Monument Ridge B			
Site Position:		Northing:	1,596,716.55 usft	Latitude:	39° 26' 40.501 N
From:	Lat/Long	Easting:	2,287,433.43 usft	Longitude:	108° 1' 24.665 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.59 °

Well	Monument Ridge B 31D-17-07-95, SHL: 39.447448615 -108.012276360					
Well Position	+N/-S	1,043.7 usft	Northing:	1,597,671.67 usft	Latitude:	39° 26' 50.815 N
	+E/-W	3,174.6 usft	Easting:	2,290,635.81 usft	Longitude:	108° 0' 44.195 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)
	IGRF2010	6/7/2015	9.84	65.59	51,823

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	219.58

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	
450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,533.9	37.94	219.58	1,456.4	-266.6	-220.4	3.50	3.50	0.00	219.58	
5,067.8	37.94	219.58	4,243.6	-1,941.1	-1,604.6	0.00	0.00	0.00	0.00	
6,151.7	0.00	0.00	5,250.0	-2,207.7	-1,825.0	3.50	-3.50	0.00	180.00	
7,881.5	0.00	0.00	6,979.8	-2,207.7	-1,825.0	0.00	0.00	0.00	0.00	

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Project:	Rockies Region	MD Reference:	Monument Ridge B 31D-17-07-95 @ 5718.8usft (PLAN KB)
Site:	Monument Ridge B	North Reference:	True
Well:	Monument Ridge B 31D-17-07-95	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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	
0.1	0.00	0.00	0.1	0.0	0.0	0.0	0.00	0.00	0.00	
SHL: 39.447448615, -108.01227636										
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	
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	0.00	
Start Build 3.50										
500.0	1.75	219.58	500.0	-0.6	-0.5	0.8	3.50	3.50	0.00	
600.0	5.25	219.58	599.8	-5.3	-4.4	6.9	3.50	3.50	0.00	
700.0	8.75	219.58	699.0	-14.7	-12.1	19.1	3.50	3.50	0.00	
800.0	12.25	219.58	797.3	-28.7	-23.7	37.3	3.50	3.50	0.00	
900.0	15.75	219.58	894.4	-47.4	-39.2	61.5	3.50	3.50	0.00	
1,000.0	19.25	219.58	989.7	-70.5	-58.3	91.5	3.50	3.50	0.00	
1,100.0	22.75	219.58	1,083.1	-98.2	-81.1	127.4	3.50	3.50	0.00	
1,200.0	26.25	219.58	1,174.0	-130.1	-107.6	168.8	3.50	3.50	0.00	
1,300.0	29.75	219.58	1,262.3	-166.3	-137.5	215.8	3.50	3.50	0.00	
1,400.0	33.25	219.58	1,347.6	-206.6	-170.8	268.0	3.50	3.50	0.00	
1,500.0	36.75	219.58	1,429.5	-250.8	-207.3	325.4	3.50	3.50	0.00	
1,533.9	37.94	219.58	1,456.4	-266.6	-220.4	345.9	3.50	3.50	0.00	
Start 3533.9 hold at 1533.9 MD										
1,600.0	37.94	219.58	1,508.6	-297.9	-246.3	386.6	0.00	0.00	0.00	
1,700.0	37.94	219.58	1,587.4	-345.3	-285.5	448.0	0.00	0.00	0.00	
1,800.0	37.94	219.58	1,666.3	-392.7	-324.6	509.5	0.00	0.00	0.00	
1,842.7	37.94	219.58	1,700.0	-413.0	-341.4	535.8	0.00	0.00	0.00	
Surface Casing										
1,900.0	37.94	219.58	1,745.2	-440.1	-363.8	571.0	0.00	0.00	0.00	
2,000.0	37.94	219.58	1,824.0	-487.5	-403.0	632.5	0.00	0.00	0.00	
2,100.0	37.94	219.58	1,902.9	-534.9	-442.1	693.9	0.00	0.00	0.00	
2,200.0	37.94	219.58	1,981.8	-582.2	-481.3	755.4	0.00	0.00	0.00	
2,300.0	37.94	219.58	2,060.6	-629.6	-520.5	816.9	0.00	0.00	0.00	
2,400.0	37.94	219.58	2,139.5	-677.0	-559.6	878.4	0.00	0.00	0.00	
2,500.0	37.94	219.58	2,218.4	-724.4	-598.8	939.9	0.00	0.00	0.00	
2,600.0	37.94	219.58	2,297.3	-771.8	-638.0	1,001.3	0.00	0.00	0.00	
2,700.0	37.94	219.58	2,376.1	-819.2	-677.2	1,062.8	0.00	0.00	0.00	
2,800.0	37.94	219.58	2,455.0	-866.6	-716.3	1,124.3	0.00	0.00	0.00	
2,900.0	37.94	219.58	2,533.9	-913.9	-755.5	1,185.8	0.00	0.00	0.00	
3,000.0	37.94	219.58	2,612.7	-961.3	-794.7	1,247.2	0.00	0.00	0.00	
3,100.0	37.94	219.58	2,691.6	-1,008.7	-833.8	1,308.7	0.00	0.00	0.00	
3,200.0	37.94	219.58	2,770.5	-1,056.1	-873.0	1,370.2	0.00	0.00	0.00	
3,300.0	37.94	219.58	2,849.3	-1,103.5	-912.2	1,431.7	0.00	0.00	0.00	
3,400.0	37.94	219.58	2,928.2	-1,150.9	-951.3	1,493.2	0.00	0.00	0.00	
3,500.0	37.94	219.58	3,007.1	-1,198.2	-990.5	1,554.6	0.00	0.00	0.00	
3,600.0	37.94	219.58	3,085.9	-1,245.6	-1,029.7	1,616.1	0.00	0.00	0.00	
3,700.0	37.94	219.58	3,164.8	-1,293.0	-1,068.9	1,677.6	0.00	0.00	0.00	
3,800.0	37.94	219.58	3,243.7	-1,340.4	-1,108.0	1,739.1	0.00	0.00	0.00	
3,900.0	37.94	219.58	3,322.6	-1,387.8	-1,147.2	1,800.6	0.00	0.00	0.00	
4,000.0	37.94	219.58	3,401.4	-1,435.2	-1,186.4	1,862.0	0.00	0.00	0.00	
4,100.0	37.94	219.58	3,480.3	-1,482.6	-1,225.5	1,923.5	0.00	0.00	0.00	
4,200.0	37.94	219.58	3,559.2	-1,529.9	-1,264.7	1,985.0	0.00	0.00	0.00	
4,251.5	37.94	219.58	3,599.8	-1,554.4	-1,284.9	2,016.7	0.00	0.00	0.00	

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Wellbore:	Wellbore #1		
Design:	Design #1		

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)
Williams Fork									
4,300.0	37.94	219.58	3,638.0	-1,577.3	-1,303.9	2,046.5	0.00	0.00	0.00
4,400.0	37.94	219.58	3,716.9	-1,624.7	-1,343.0	2,107.9	0.00	0.00	0.00
4,500.0	37.94	219.58	3,795.8	-1,672.1	-1,382.2	2,169.4	0.00	0.00	0.00
4,600.0	37.94	219.58	3,874.6	-1,719.5	-1,421.4	2,230.9	0.00	0.00	0.00
4,700.0	37.94	219.58	3,953.5	-1,766.9	-1,460.6	2,292.4	0.00	0.00	0.00
4,800.0	37.94	219.58	4,032.4	-1,814.2	-1,499.7	2,353.9	0.00	0.00	0.00
4,900.0	37.94	219.58	4,111.3	-1,861.6	-1,538.9	2,415.3	0.00	0.00	0.00
5,000.0	37.94	219.58	4,190.1	-1,909.0	-1,578.1	2,476.8	0.00	0.00	0.00
5,067.8	37.94	219.58	4,243.6	-1,941.1	-1,604.6	2,518.5	0.00	0.00	0.00
Start Drop -3.50									
5,100.0	36.81	219.58	4,269.2	-1,956.2	-1,617.1	2,538.0	3.50	-3.50	0.00
5,200.0	33.31	219.58	4,351.0	-2,000.5	-1,653.7	2,595.5	3.50	-3.50	0.00
5,300.0	29.81	219.58	4,436.2	-2,040.8	-1,687.0	2,647.8	3.50	-3.50	0.00
5,400.0	26.31	219.58	4,524.5	-2,077.1	-1,717.0	2,694.8	3.50	-3.50	0.00
5,500.0	22.81	219.58	4,615.4	-2,109.1	-1,743.4	2,736.4	3.50	-3.50	0.00
5,567.1	20.46	219.58	4,677.8	-2,128.2	-1,759.2	2,761.1	3.50	-3.50	0.00
Top of Gas									
5,600.0	19.31	219.58	4,708.7	-2,136.8	-1,766.3	2,772.3	3.50	-3.50	0.00
5,700.0	15.81	219.58	4,804.0	-2,160.0	-1,785.6	2,802.5	3.50	-3.50	0.00
5,800.0	12.31	219.58	4,901.0	-2,178.7	-1,801.0	2,826.8	3.50	-3.50	0.00
5,900.0	8.81	219.58	4,999.3	-2,192.9	-1,812.7	2,845.1	3.50	-3.50	0.00
6,000.0	5.31	219.58	5,098.5	-2,202.3	-1,820.5	2,857.4	3.50	-3.50	0.00
6,100.0	1.81	219.58	5,198.3	-2,207.1	-1,824.5	2,863.6	3.50	-3.50	0.00
6,151.7	0.00	0.00	5,250.0	-2,207.7	-1,825.0	2,864.4	3.50	-3.50	0.00
Start 1729.8 hold at 6151.7 MD - Back to Vertical									
6,200.0	0.00	0.00	5,298.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
6,300.0	0.00	0.00	5,398.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
6,400.0	0.00	0.00	5,498.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
6,500.0	0.00	0.00	5,598.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
6,600.0	0.00	0.00	5,698.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
6,700.0	0.00	0.00	5,798.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
6,800.0	0.00	0.00	5,898.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
6,881.5	0.00	0.00	5,979.8	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
Cameo									
6,900.0	0.00	0.00	5,998.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,098.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,100.0	0.00	0.00	6,198.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,200.0	0.00	0.00	6,298.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,300.0	0.00	0.00	6,398.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,400.0	0.00	0.00	6,498.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,500.0	0.00	0.00	6,598.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,581.5	0.00	0.00	6,679.8	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
Rollins									
7,600.0	0.00	0.00	6,698.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,700.0	0.00	0.00	6,798.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,800.0	0.00	0.00	6,898.3	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
7,881.4	0.00	0.00	6,979.7	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
BHL: 39.4413871, -108.0187384									
7,881.5	0.00	0.00	6,979.8	-2,207.7	-1,825.0	2,864.4	0.00	0.00	0.00
TD at 7881.5									

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Well:	Monument Ridge B 31D-17-07-95	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)

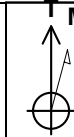
Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Monument Ridge B 31D-	0.00	0.00	4,677.8	-2,207.7	-1,825.0	1,595,515.23	2,288,750.46	39° 26' 28.994 N	108° 1' 7.458 W
- plan misses target center by 97.1usft at 5600.0usft MD (4708.7 TVD, -2136.8 N, -1766.3 E)									
- Rectangle (sides W100.0 H40.0 D2,302.0)									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,251.5	3,599.8	Williams Fork		0.00		
5,567.1	4,677.8	Top of Gas		0.00		
6,881.5	5,979.8	Cameo		0.00		
7,581.5	6,679.8	Rollins		0.00		
7,881.5	6,979.8	TD		0.00		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.1	0.1	0.0	0.0	SHL: 39.447448615, -108.01227636
450.0	450.0	0.0	0.0	Start Build 3.50
1,533.9	1,456.4	-266.6	-220.4	Start 3533.9 hold at 1533.9 MD
1,842.7	1,700.0	-413.0	-341.4	Surface Casing
5,067.8	4,243.6	-1,941.1	-1,604.6	Start Drop -3.50
6,151.7	5,250.0	-2,207.7	-1,825.0	Start 1729.8 hold at 6151.7 MD
6,151.7	5,250.0	-2,207.7	-1,825.0	Back to Vertical
7,881.4	6,979.7	-2,207.7	-1,825.0	BHL: 39.4413871, -108.0187384
7,881.5	6,979.8	-2,207.7	-1,825.0	TD at 7881.5



Well Name: Monument Ridge B 31D-17-07-95
Surface Location: Monument Ridge B
North American Datum 1983, US State Plane 1983, Colorado Central Zone
Ground Elevation: 5701.8
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1597671.68 2290635.81 39° 26' 50.815 N 108° 0' 44.195 W
PLAN KB Monument Ridge B 31D-17-07-95 @ 5718.8usft (PLAN KB)



Azimuths to True North
Magnetic North: 9.84°
Magnetic Field
Strength: 51822.7snT
Dip Angle: 65.59°
Date: 6/7/2015
Model: IGRF2010

Monument Ridge B
Monument Ridge B 31D-17-07-95
Design #1
10:44, June 12 2015

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Monument Ridge B 31D-17-07-95 TGT	4677.8	-2207.7	-1825.0	1595515.24	2288750.46	39° 26' 28.994 N	108° 0' 17.7458 W	Rectangle (Sides: L40.0 W100.0)

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	450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.0	
3	1533.9	37.94	219.58	1456.4	-266.6	-220.4	3.50	219.58	345.9	
4	5067.8	37.94	219.58	4243.6	-1941.1	-1604.6	0.00	0.00	2518.5	
5	6151.7	0.00	0.00	5250.0	-2207.7	-1825.0	3.50	180.00	2864.4	
6	7881.5	0.00	0.00	6979.8	-2207.7	-1825.0	0.00	0.00	2864.4	

ANNOTATIONS

TVD	MD	Annotation
0.1	0.1	SHL: 39.447448615, -108.01227636
450.0	450.0	Start Build 3.50
1456.4	1533.9	Start 3533.9 hold at 1533.9 MD
1700.0	1842.7	Surface Casing
4243.6	5067.8	Start Drop -3.50
5250.0	6151.7	Start 1729.8 hold at 6151.7 MD
5250.0	6151.7	Back to Vertical
6979.7	7881.4	BHL: 39.4413871, -108.0187384
6979.8	7881.5	TD at 7881.5

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3599.8	4251.5	Williams Fork	0.00	
4677.8	5567.1	Top of Gas	0.00	
5979.8	6881.5	Cameo	0.00	
6679.8	7581.5	Rollins	0.00	
6979.8	7881.5	TD	0.00	

