



Ursa Operating Company, LLC

Rio Blanco County, Colorado

Boies Ranch B-19N Pad

Boies Ranch B-19N 33C-19-2-97

Wellbore #1

Plan: Design #1

Standard Planning Report

13 November, 2017



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Boies Ranch B-19N 33C-19-2-97
Company:	Ursa Operating Company, LLC	TVD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Project:	Rio Blanco County, Colorado	MD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Site:	Boies Ranch B-19N Pad	North Reference:	True
Well:	Boies Ranch B-19N 33C-19-2-97	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Rio Blanco County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Boies Ranch B-19N Pad		
Site Position:		Northing:	1,203,643.43 usft
From:	Lat/Long	Easting:	2,206,000.33 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	39.857609622
		Longitude:	-108.328733084
		Grid Convergence:	-1.83 °

Well	Boies Ranch B-19N 33C-19-2-97, SHL: Lat 39.857504770 Long -108.328216245		
Well Position	+N/-S	-38.2 usft	Northing: 1,203,600.64 usft
	+E/-W	145.1 usft	Easting: 2,206,144.14 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	6,325.8 usft
		Ground Level:	6,304.8 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/25/2017	9.86	65.82	51,647

Design	Design #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	64.29	

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,325.2	18.38	64.29	1,316.2	36.2	75.3	3.50	3.50	0.00	64.29	
5,989.7	18.38	64.29	5,742.8	674.2	1,400.6	0.00	0.00	0.00	0.00	
6,514.9	0.00	0.00	6,259.0	710.5	1,475.9	3.50	-3.50	0.00	180.00	BRB 19N 33C-19-2-9'
11,318.9	0.00	0.00	11,063.0	710.5	1,475.9	0.00	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Boies Ranch B-19N 33C-19-2-97
Company:	Ursa Operating Company, LLC	TVD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Project:	Rio Blanco County, Colorado	MD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Site:	Boies Ranch B-19N Pad	North Reference:	True
Well:	Boies Ranch B-19N 33C-19-2-97	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 39.857504770, -108.328216245										
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	
Start Build 3.50										
900.0	3.50	64.29	899.9	1.3	2.8	3.1	3.50	3.50	0.00	
927.1	4.45	64.29	927.0	2.1	4.4	4.9	3.50	3.50	0.00	
Mahogany Bench										
984.4	6.45	64.29	984.0	4.5	9.3	10.4	3.50	3.50	0.00	
Dissolution Surface										
1,000.0	7.00	64.29	999.5	5.3	11.0	12.2	3.50	3.50	0.00	
1,100.0	10.50	64.29	1,098.3	11.9	24.7	27.4	3.50	3.50	0.00	
1,200.0	14.00	64.29	1,196.0	21.1	43.8	48.6	3.50	3.50	0.00	
1,300.0	17.50	64.29	1,292.3	32.9	68.3	75.8	3.50	3.50	0.00	
1,325.2	18.38	64.29	1,316.2	36.2	75.3	83.5	3.50	3.50	0.00	
Start 4664.5 hold at 1325.2 MD										
1,400.0	18.38	64.29	1,387.2	46.5	96.5	107.1	0.00	0.00	0.00	
1,500.0	18.38	64.29	1,482.1	60.1	124.9	138.7	0.00	0.00	0.00	
1,600.0	18.38	64.29	1,577.0	73.8	153.3	170.2	0.00	0.00	0.00	
1,700.0	18.38	64.29	1,671.9	87.5	181.8	201.7	0.00	0.00	0.00	
1,800.0	18.38	64.29	1,766.8	101.2	210.2	233.3	0.00	0.00	0.00	
1,900.0	18.38	64.29	1,861.7	114.9	238.6	264.8	0.00	0.00	0.00	
2,000.0	18.38	64.29	1,956.6	128.5	267.0	296.3	0.00	0.00	0.00	
2,100.0	18.38	64.29	2,051.5	142.2	295.4	327.9	0.00	0.00	0.00	
2,139.5	18.38	64.29	2,089.0	147.6	306.6	340.3	0.00	0.00	0.00	
Garden Gulch Mbr										
2,200.0	18.38	64.29	2,146.4	155.9	323.8	359.4	0.00	0.00	0.00	
2,300.0	18.38	64.29	2,241.3	169.6	352.2	390.9	0.00	0.00	0.00	
2,316.5	18.38	64.29	2,257.0	171.8	356.9	396.1	0.00	0.00	0.00	
Wasatch										
2,400.0	18.38	64.29	2,336.2	183.2	380.7	422.5	0.00	0.00	0.00	
2,500.0	18.38	64.29	2,431.1	196.9	409.1	454.0	0.00	0.00	0.00	
2,600.0	18.38	64.29	2,526.0	210.6	437.5	485.5	0.00	0.00	0.00	
2,700.0	18.38	64.29	2,620.9	224.3	465.9	517.1	0.00	0.00	0.00	
2,800.0	18.38	64.29	2,715.8	238.0	494.3	548.6	0.00	0.00	0.00	
2,900.0	18.38	64.29	2,810.7	251.6	522.7	580.1	0.00	0.00	0.00	
3,000.0	18.38	64.29	2,905.6	265.3	551.1	611.7	0.00	0.00	0.00	
3,100.0	18.38	64.29	3,000.5	279.0	579.6	643.2	0.00	0.00	0.00	
3,200.0	18.38	64.29	3,095.4	292.7	608.0	674.7	0.00	0.00	0.00	
3,300.0	18.38	64.29	3,190.3	306.3	636.4	706.3	0.00	0.00	0.00	
3,400.0	18.38	64.29	3,285.2	320.0	664.8	737.8	0.00	0.00	0.00	
3,500.0	18.38	64.29	3,380.1	333.7	693.2	769.3	0.00	0.00	0.00	
3,600.0	18.38	64.29	3,475.0	347.4	721.6	800.9	0.00	0.00	0.00	
3,626.4	18.38	64.29	3,500.0	351.0	729.1	809.2	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Boies Ranch B-19N 33C-19-2-97
Company:	Ursa Operating Company, LLC	TVD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Project:	Rio Blanco County, Colorado	MD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Site:	Boies Ranch B-19N Pad	North Reference:	True
Well:	Boies Ranch B-19N 33C-19-2-97	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)
Surface Casing									
3,700.0	18.38	64.29	3,569.9	361.1	750.0	832.4	0.00	0.00	0.00
3,800.0	18.38	64.29	3,664.8	374.7	778.5	863.9	0.00	0.00	0.00
3,900.0	18.38	64.29	3,759.7	388.4	806.9	895.5	0.00	0.00	0.00
4,000.0	18.38	64.29	3,854.6	402.1	835.3	927.0	0.00	0.00	0.00
4,100.0	18.38	64.29	3,949.5	415.8	863.7	958.6	0.00	0.00	0.00
4,200.0	18.38	64.29	4,044.4	429.4	892.1	990.1	0.00	0.00	0.00
4,300.0	18.38	64.29	4,139.3	443.1	920.5	1,021.6	0.00	0.00	0.00
4,400.0	18.38	64.29	4,234.1	456.8	948.9	1,053.2	0.00	0.00	0.00
4,500.0	18.38	64.29	4,329.0	470.5	977.3	1,084.7	0.00	0.00	0.00
4,600.0	18.38	64.29	4,423.9	484.2	1,005.8	1,116.2	0.00	0.00	0.00
4,700.0	18.38	64.29	4,518.8	497.8	1,034.2	1,147.8	0.00	0.00	0.00
4,800.0	18.38	64.29	4,613.7	511.5	1,062.6	1,179.3	0.00	0.00	0.00
4,888.8	18.38	64.29	4,698.0	523.7	1,087.8	1,207.3	0.00	0.00	0.00
Ft Union									
4,900.0	18.38	64.29	4,708.6	525.2	1,091.0	1,210.8	0.00	0.00	0.00
5,000.0	18.38	64.29	4,803.5	538.9	1,119.4	1,242.4	0.00	0.00	0.00
5,100.0	18.38	64.29	4,898.4	552.5	1,147.8	1,273.9	0.00	0.00	0.00
5,200.0	18.38	64.29	4,993.3	566.2	1,176.2	1,305.4	0.00	0.00	0.00
5,300.0	18.38	64.29	5,088.2	579.9	1,204.7	1,337.0	0.00	0.00	0.00
5,400.0	18.38	64.29	5,183.1	593.6	1,233.1	1,368.5	0.00	0.00	0.00
5,500.0	18.38	64.29	5,278.0	607.3	1,261.5	1,400.0	0.00	0.00	0.00
5,600.0	18.38	64.29	5,372.9	620.9	1,289.9	1,431.6	0.00	0.00	0.00
5,700.0	18.38	64.29	5,467.8	634.6	1,318.3	1,463.1	0.00	0.00	0.00
5,800.0	18.38	64.29	5,562.7	648.3	1,346.7	1,494.6	0.00	0.00	0.00
5,900.0	18.38	64.29	5,657.6	662.0	1,375.1	1,526.2	0.00	0.00	0.00
5,989.7	18.38	64.29	5,742.8	674.2	1,400.6	1,554.5	0.00	0.00	0.00
Start Drop -3.50									
6,000.0	18.02	64.29	5,752.5	675.6	1,403.5	1,557.7	3.50	-3.50	0.00
6,100.0	14.52	64.29	5,848.5	687.8	1,428.8	1,585.7	3.50	-3.50	0.00
6,200.0	11.02	64.29	5,946.0	697.4	1,448.7	1,607.8	3.50	-3.50	0.00
6,300.0	7.52	64.29	6,044.7	704.4	1,463.2	1,623.9	3.50	-3.50	0.00
6,324.5	6.67	64.29	6,069.0	705.7	1,465.9	1,626.9	3.50	-3.50	0.00
Ohio Creek									
6,400.0	4.02	64.29	6,144.2	708.7	1,472.3	1,634.0	3.50	-3.50	0.00
6,500.0	0.52	64.29	6,244.1	710.4	1,475.8	1,637.9	3.50	-3.50	0.00
6,514.9	0.00	0.00	6,259.0	710.5	1,475.9	1,638.0	3.50	-3.50	0.00
Back to Vertical - Start 4804.0 hold at 6514.9 MD - Williams Fork - Top of Gas									
6,600.0	0.00	0.00	6,344.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,444.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,544.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,644.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,744.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
7,100.0	0.00	0.00	6,844.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
7,200.0	0.00	0.00	6,944.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,044.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,144.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,244.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,344.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,444.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,544.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Boies Ranch B-19N 33C-19-2-97
Company:	Ursa Operating Company, LLC	TVD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Project:	Rio Blanco County, Colorado	MD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Site:	Boies Ranch B-19N Pad	North Reference:	True
Well:	Boies Ranch B-19N 33C-19-2-97	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)	
7,900.0	0.00	0.00	7,644.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,744.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,100.0	0.00	0.00	7,844.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,200.0	0.00	0.00	7,944.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,044.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,144.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,244.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,344.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,444.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,544.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,644.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,744.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,100.0	0.00	0.00	8,844.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,200.0	0.00	0.00	8,944.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,044.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,144.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,244.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,344.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,623.9	0.00	0.00	9,368.0	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
Cameo										
9,700.0	0.00	0.00	9,444.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,544.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,644.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,744.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,100.0	0.00	0.00	9,844.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,168.9	0.00	0.00	9,913.0	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
Rollins										
10,200.0	0.00	0.00	9,944.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,300.0	0.00	0.00	10,044.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,312.9	0.00	0.00	10,057.0	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
Cozzette										
10,400.0	0.00	0.00	10,144.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,500.0	0.00	0.00	10,244.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,600.0	0.00	0.00	10,344.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,646.9	0.00	0.00	10,391.0	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
Corcoran										
10,700.0	0.00	0.00	10,444.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,800.0	0.00	0.00	10,544.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
10,900.0	0.00	0.00	10,644.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
11,000.0	0.00	0.00	10,744.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
11,100.0	0.00	0.00	10,844.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
11,200.0	0.00	0.00	10,944.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
11,300.0	0.00	0.00	11,044.1	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
11,318.9	0.00	0.00	11,063.0	710.5	1,475.9	1,638.0	0.00	0.00	0.00	
BHL 39.8594550, -108.3229590										

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Boies Ranch B-19N 33C-19-2-97
Company:	Ursa Operating Company, LLC	TVD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Project:	Rio Blanco County, Colorado	MD Reference:	Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)
Site:	Boies Ranch B-19N Pad	North Reference:	True
Well:	Boies Ranch B-19N 33C-19-2-97	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
BRB 19N 33C-19-2-97 T	0.00	0.00	6,259.0	710.5	1,475.9	1,204,263.66	2,207,641.91	39.859455000	-108.322959000
- plan hits target center									
- Rectangle (sides W100.0 H40.0 D4,804.0)									

Formations

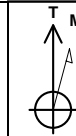
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
927.1	927.0	Mahogany Bench			
984.4	984.0	Dissolution Surface			
2,139.5	2,089.0	Garden Gulch Mbr			
2,316.5	2,257.0	Wasatch			
4,888.8	4,698.0	Ft Union			
6,324.5	6,069.0	Ohio Creek			
6,514.9	6,259.0	Williams Fork			
6,514.9	6,259.0	Top of Gas			
9,623.9	9,368.0	Cameo			
10,168.9	9,913.0	Rollins			
10,312.9	10,057.0	Cozzette			
10,646.9	10,391.0	Corcoran			

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 39.857504770, -108.328216245
800.0	800.0	0.0	0.0	Start Build 3.50
1,325.2	1,316.2	36.2	75.3	Start 4664.5 hold at 1325.2 MD
3,626.4	3,500.0	351.0	729.1	Surface Casing
5,989.7	5,742.8	674.2	1,400.6	Start Drop -3.50
6,514.9	6,259.0	710.5	1,475.9	Back to Vertical
6,514.9	6,259.0	710.5	1,475.9	Start 4804.0 hold at 6514.9 MD
11,318.9	11,063.0	710.5	1,475.9	BHL 39.8594550, -108.3229590
11,318.9	11,063.0	710.5	1,475.9	TD at 11318.9



Well Name:Boies Ranch B-19N 33C-19-2-97
Surface Location: Boies Ranch B-19N Pad
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 6304.8
+N/-S +E/-W Northing Easting Latitude Longitude
0.0 0.0 1203600.64 2206144.14 39.857504770 -108.328216245
Est KB Boies Ranch B-19N 33C-19-2-97 @ 6325.8usft (Est KB)



Azimuths to True North
Magnetic North: 9.86°
Magnetic Field
Strength: 51647.1nT
Dip Angle: 65.82°
Date: 9/25/2017
Model: IGRF2015

Boies Ranch B-19N Pad
Boies Ranch B-19N 33C-19-2-97
Design #1
9:58, November 13 2017

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BRB 19N 33C-19-2-97 TGT	6259.0	710.5	1475.9	1204263.67	2207641.91	39.859455000	-108.322959000	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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1325.2	18.38	64.29	1316.2	36.2	75.3	3.50	64.29	83.5	
4	5989.7	18.38	64.29	5742.8	674.2	1400.6	0.00	0.00	1554.5	
5	6514.9	0.00	0.00	6259.0	710.5	1475.9	3.50	180.00	1638.0	BRB 19N 33C-19-2-97 TGT
6	11318.9	0.00	0.00	11063.0	710.5	1475.9	0.00	0.00	1638.0	

ANNOTATIONS

TVD	MD	Annotation
0.1	0.1	SHL 39.857504770, -108.328216245
800.0	800.0	Start Build 3.50
1316.2	1325.2	Start 4664.5 hold at 1325.2 MD
3500.0	3626.4	Surface Casing
5742.8	5989.7	Start Drop -3.50
6259.0	6514.9	Back to Vertical
6259.0	6514.9	Start 4804.0 hold at 6514.9 MD
11063.0	11318.9	BHL 39.8594550, -108.3229590
11063.0	11318.9	TD at 11318.9

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
927.0	927.1	Mahogany Bench		
984.0	984.4	Dissolution Surface		
2089.0	2139.5	Garden Gulch Mbr		
2257.0	2316.5	Wasatch		
4698.0	4888.8	Ft Union		
6069.0	6324.5	Ohio Creek		
6259.0	6514.9	Top of Gas		
6259.0	6514.9	Williams Fork		
9368.0	9623.9	Cameo		
9913.0	10168.9	Rollins		
10057.0	10312.9	Cozzette		
10391.0	10646.9	Corcoran		

