



Ursa Operating Company, LLC

Rio Blanco County, Colorado

Boies Ranch B-19N Pad

Boies Ranch B-19N FED 12B-19-2-97

Wellbore #1

Plan: APD

Standard Planning Report

24 September, 2018

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Boies Ranch B-19N FED 12B-19-2-97
Company:	Ursa Operating Company, LLC	TVD Reference:	Boies Ranch B-19N FED 12B-19-2-97 @ 6325.8usft (EST KB)
Project:	Rio Blanco County, Colorado	MD Reference:	Boies Ranch B-19N FED 12B-19-2-97 @ 6325.8usft (EST KB)
Site:	Boies Ranch B-19N Pad	North Reference:	True
Well:	Boies Ranch B-19N FED 12B-19-2-97	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD		

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 FED 12B-19-2-97, SHL: Lat 39.857574346 Long -108.328393669		
Well Position	+N/-S	-12.8 usft	Northing: 1,203,627.56 usft
	+E/-W	95.3 usft	Easting: 2,206,095.16 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	7/17/2018	9.78	65.80	51,557

Design	APD				
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	332.78	

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	
1,654.1	29.89	332.78	1,615.9	193.7	-99.6	3.50	3.50	0.00	332.78	
5,930.3	29.89	332.78	5,323.1	2,088.9	-1,074.5	0.00	0.00	0.00	0.00	
6,784.4	0.00	0.00	6,139.0	2,282.6	-1,174.1	3.50	-3.50	0.00	180.00	12B-19-2-97 TGT
11,718.4	0.00	0.00	11,073.0	2,282.6	-1,174.1	0.00	0.00	0.00	0.00	

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Well:	Boies Ranch B-19N FED 12B-19-2-97	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD		

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 39.857574346, -108.328393669										
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										
807.0	0.25	332.78	807.0	0.0	0.0	0.0	3.50	3.50	0.00	
Mahogany Bench										
864.0	2.24	332.78	864.0	1.1	-0.6	1.3	3.50	3.50	0.00	
Dissolution Surface										
900.0	3.50	332.78	899.9	2.7	-1.4	3.1	3.50	3.50	0.00	
1,000.0	7.00	332.78	999.5	10.9	-5.6	12.2	3.50	3.50	0.00	
1,100.0	10.50	332.78	1,098.3	24.4	-12.5	27.4	3.50	3.50	0.00	
1,200.0	14.00	332.78	1,196.0	43.2	-22.2	48.6	3.50	3.50	0.00	
1,300.0	17.50	332.78	1,292.3	67.4	-34.7	75.8	3.50	3.50	0.00	
1,400.0	21.00	332.78	1,386.7	96.7	-49.7	108.7	3.50	3.50	0.00	
1,500.0	24.50	332.78	1,478.9	131.1	-67.4	147.4	3.50	3.50	0.00	
1,600.0	28.00	332.78	1,568.5	170.4	-87.6	191.6	3.50	3.50	0.00	
1,654.1	29.89	332.78	1,615.9	193.7	-99.6	217.8	3.50	3.50	0.00	
Start 4276.2 hold at 1654.1 MD										
1,700.0	29.89	332.78	1,655.7	214.0	-110.1	240.7	0.00	0.00	0.00	
1,800.0	29.89	332.78	1,742.4	258.3	-132.9	290.5	0.00	0.00	0.00	
1,900.0	29.89	332.78	1,829.1	302.7	-155.7	340.4	0.00	0.00	0.00	
2,000.0	29.89	332.78	1,915.8	347.0	-178.5	390.2	0.00	0.00	0.00	
2,061.4	29.89	332.78	1,969.0	374.2	-192.5	420.8	0.00	0.00	0.00	
Garden Gulch Mbr										
2,100.0	29.89	332.78	2,002.4	391.3	-201.3	440.0	0.00	0.00	0.00	
2,200.0	29.89	332.78	2,089.1	435.6	-224.1	489.9	0.00	0.00	0.00	
2,255.2	29.89	332.78	2,137.0	460.1	-236.7	517.4	0.00	0.00	0.00	
Wasatch										
2,300.0	29.89	332.78	2,175.8	480.0	-246.9	539.7	0.00	0.00	0.00	
2,400.0	29.89	332.78	2,262.5	524.3	-269.7	589.6	0.00	0.00	0.00	
2,500.0	29.89	332.78	2,349.2	568.6	-292.5	639.4	0.00	0.00	0.00	
2,600.0	29.89	332.78	2,435.9	612.9	-315.3	689.2	0.00	0.00	0.00	
2,700.0	29.89	332.78	2,522.6	657.2	-338.1	739.1	0.00	0.00	0.00	
2,800.0	29.89	332.78	2,609.3	701.6	-360.9	788.9	0.00	0.00	0.00	
2,900.0	29.89	332.78	2,696.0	745.9	-383.7	838.8	0.00	0.00	0.00	
3,000.0	29.89	332.78	2,782.7	790.2	-406.5	888.6	0.00	0.00	0.00	
3,100.0	29.89	332.78	2,869.4	834.5	-429.2	938.4	0.00	0.00	0.00	
3,200.0	29.89	332.78	2,956.1	878.8	-452.0	988.3	0.00	0.00	0.00	
3,300.0	29.89	332.78	3,042.8	923.2	-474.8	1,038.1	0.00	0.00	0.00	
3,400.0	29.89	332.78	3,129.5	967.5	-497.6	1,088.0	0.00	0.00	0.00	
3,500.0	29.89	332.78	3,216.2	1,011.8	-520.4	1,137.8	0.00	0.00	0.00	
3,600.0	29.89	332.78	3,302.9	1,056.1	-543.2	1,187.7	0.00	0.00	0.00	
3,700.0	29.89	332.78	3,389.6	1,100.5	-566.0	1,237.5	0.00	0.00	0.00	
3,800.0	29.89	332.78	3,476.2	1,144.8	-588.8	1,287.3	0.00	0.00	0.00	

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Wellbore:	Wellbore #1		
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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)
3,827.4	29.89	332.78	3,500.0	1,156.9	-595.1	1,301.0	0.00	0.00	0.00
Surface Casing									
3,900.0	29.89	332.78	3,562.9	1,189.1	-611.6	1,337.2	0.00	0.00	0.00
4,000.0	29.89	332.78	3,649.6	1,233.4	-634.4	1,387.0	0.00	0.00	0.00
4,100.0	29.89	332.78	3,736.3	1,277.7	-657.2	1,436.9	0.00	0.00	0.00
4,200.0	29.89	332.78	3,823.0	1,322.1	-680.0	1,486.7	0.00	0.00	0.00
4,300.0	29.89	332.78	3,909.7	1,366.4	-702.8	1,536.5	0.00	0.00	0.00
4,400.0	29.89	332.78	3,996.4	1,410.7	-725.6	1,586.4	0.00	0.00	0.00
4,500.0	29.89	332.78	4,083.1	1,455.0	-748.4	1,636.2	0.00	0.00	0.00
4,600.0	29.89	332.78	4,169.8	1,499.3	-771.2	1,686.1	0.00	0.00	0.00
4,700.0	29.89	332.78	4,256.5	1,543.7	-794.0	1,735.9	0.00	0.00	0.00
4,800.0	29.89	332.78	4,343.2	1,588.0	-816.8	1,785.7	0.00	0.00	0.00
4,900.0	29.89	332.78	4,429.9	1,632.3	-839.6	1,835.6	0.00	0.00	0.00
5,000.0	29.89	332.78	4,516.6	1,676.6	-862.4	1,885.4	0.00	0.00	0.00
5,070.8	29.89	332.78	4,578.0	1,708.0	-878.6	1,920.7	0.00	0.00	0.00
Ft Union									
5,100.0	29.89	332.78	4,603.3	1,720.9	-885.2	1,935.3	0.00	0.00	0.00
5,200.0	29.89	332.78	4,690.0	1,765.3	-908.0	1,985.1	0.00	0.00	0.00
5,300.0	29.89	332.78	4,776.7	1,809.6	-930.8	2,034.9	0.00	0.00	0.00
5,400.0	29.89	332.78	4,863.4	1,853.9	-953.6	2,084.8	0.00	0.00	0.00
5,500.0	29.89	332.78	4,950.1	1,898.2	-976.4	2,134.6	0.00	0.00	0.00
5,600.0	29.89	332.78	5,036.7	1,942.6	-999.2	2,184.5	0.00	0.00	0.00
5,700.0	29.89	332.78	5,123.4	1,986.9	-1,022.0	2,234.3	0.00	0.00	0.00
5,800.0	29.89	332.78	5,210.1	2,031.2	-1,044.8	2,284.1	0.00	0.00	0.00
5,900.0	29.89	332.78	5,296.8	2,075.5	-1,067.6	2,334.0	0.00	0.00	0.00
5,930.3	29.89	332.78	5,323.1	2,088.9	-1,074.5	2,349.1	0.00	0.00	0.00
Start Drop -3.50									
6,000.0	27.46	332.78	5,384.2	2,118.7	-1,089.8	2,382.5	3.50	-3.50	0.00
6,100.0	23.96	332.78	5,474.3	2,157.3	-1,109.6	2,425.9	3.50	-3.50	0.00
6,200.0	20.46	332.78	5,566.9	2,190.9	-1,126.9	2,463.7	3.50	-3.50	0.00
6,300.0	16.96	332.78	5,661.6	2,219.4	-1,141.6	2,495.8	3.50	-3.50	0.00
6,400.0	13.46	332.78	5,758.1	2,242.7	-1,153.6	2,522.0	3.50	-3.50	0.00
6,500.0	9.96	332.78	5,856.0	2,260.7	-1,162.8	2,542.3	3.50	-3.50	0.00
6,594.0	6.67	332.78	5,949.0	2,272.8	-1,169.1	2,555.8	3.50	-3.50	0.00
Ohio Creek									
6,600.0	6.46	332.78	5,955.0	2,273.4	-1,169.4	2,556.5	3.50	-3.50	0.00
6,700.0	2.96	332.78	6,054.6	2,280.7	-1,173.1	2,564.7	3.50	-3.50	0.00
6,784.4	0.00	0.00	6,139.0	2,282.6	-1,174.1	2,566.9	3.50	-3.50	0.00
Start 4934.0 hold at 6784.4 MD - Back to Vertical - Williams Fork - Top of Gas - 12B-19-2-97 TGT									
6,800.0	0.00	0.00	6,154.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
6,900.0	0.00	0.00	6,254.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,354.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,100.0	0.00	0.00	6,454.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,200.0	0.00	0.00	6,554.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,300.0	0.00	0.00	6,654.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,400.0	0.00	0.00	6,754.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,500.0	0.00	0.00	6,854.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,600.0	0.00	0.00	6,954.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,700.0	0.00	0.00	7,054.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,154.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00
7,900.0	0.00	0.00	7,254.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00

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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)	
8,000.0	0.00	0.00	7,354.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
8,100.0	0.00	0.00	7,454.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
8,200.0	0.00	0.00	7,554.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
8,300.0	0.00	0.00	7,654.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
8,400.0	0.00	0.00	7,754.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
8,500.0	0.00	0.00	7,854.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
8,600.0	0.00	0.00	7,954.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,054.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,154.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,254.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,354.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,100.0	0.00	0.00	8,454.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,200.0	0.00	0.00	8,554.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,300.0	0.00	0.00	8,654.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,400.0	0.00	0.00	8,754.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,500.0	0.00	0.00	8,854.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,600.0	0.00	0.00	8,954.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,054.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,154.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
9,893.4	0.00	0.00	9,248.0	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
Cameo										
9,900.0	0.00	0.00	9,254.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,354.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,100.0	0.00	0.00	9,454.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,200.0	0.00	0.00	9,554.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,300.0	0.00	0.00	9,654.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,400.0	0.00	0.00	9,754.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,438.4	0.00	0.00	9,793.0	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
Rollins										
10,500.0	0.00	0.00	9,854.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,582.4	0.00	0.00	9,937.0	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
Cozzette										
10,600.0	0.00	0.00	9,954.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,700.0	0.00	0.00	10,054.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,800.0	0.00	0.00	10,154.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,900.0	0.00	0.00	10,254.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
10,916.4	0.00	0.00	10,271.0	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
Corcoran										
11,000.0	0.00	0.00	10,354.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
11,100.0	0.00	0.00	10,454.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
11,100.4	0.00	0.00	10,455.0	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
Upper Sego										
11,200.0	0.00	0.00	10,554.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
11,300.0	0.00	0.00	10,654.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
11,400.0	0.00	0.00	10,754.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
11,500.0	0.00	0.00	10,854.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
11,600.0	0.00	0.00	10,954.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
11,700.0	0.00	0.00	11,054.6	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
11,718.4	0.00	0.00	11,073.0	2,282.6	-1,174.1	2,566.9	0.00	0.00	0.00	
TD at 11718.4										

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Boies Ranch B-19N FED 12B-19-2-97
Company:	Ursa Operating Company, LLC	TVD Reference:	Boies Ranch B-19N FED 12B-19-2-97 @ 6325.8usft (EST KB)
Project:	Rio Blanco County, Colorado	MD Reference:	Boies Ranch B-19N FED 12B-19-2-97 @ 6325.8usft (EST KB)
Site:	Boies Ranch B-19N Pad	North Reference:	True
Well:	Boies Ranch B-19N FED 12B-19-2-97	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD		

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									
12B-19-2-97 TGT	0.00	0.00	6,139.0	2,282.6	-1,174.1	1,205,946.44	2,204,994.46	39.863840500	-108.332576200
- plan hits target center									
- Rectangle (sides W100.0 H40.0 D4,934.0)									

Formations

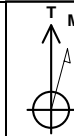
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
807.0	807.0	Mahogany Bench		0.00	
864.0	864.0	Dissolution Surface		0.00	
2,061.4	1,969.0	Garden Gulch Mbr		0.00	
2,255.2	2,137.0	Wasatch		0.00	
5,070.8	4,578.0	Ft Union		0.00	
6,594.0	5,949.0	Ohio Creek		0.00	
6,784.4	6,139.0	Williams Fork		0.00	
6,784.4	6,139.0	Top of Gas		0.00	
9,893.4	9,248.0	Cameo		0.00	
10,438.4	9,793.0	Rollins		0.00	
10,582.4	9,937.0	Cozzette		0.00	
10,916.4	10,271.0	Corcoran		0.00	
11,100.4	10,455.0	Upper Sego		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
0.1	0.1	0.0	0.0	SHL 39.857574346, -108.328393669	
800.0	800.0	0.0	0.0	Start Build 3.50	
1,654.1	1,615.9	193.7	-99.6	Start 4276.2 hold at 1654.1 MD	
3,827.4	3,500.0	1,156.9	-595.1	Surface Casing	
5,930.3	5,323.1	2,088.9	-1,074.5	Start Drop -3.50	
6,784.4	6,139.0	2,282.6	-1,174.1	Start 4934.0 hold at 6784.4 MD	
6,784.4	6,139.0	2,282.6	-1,174.1	Back to Vertical	
11,718.4	11,073.0	2,282.6	-1,174.1	TD at 11718.4	
11,718.4	11,073.0	2,282.6	-1,174.1	BHL 39.8638405, -108.3325762	



Well Name:Boies Ranch B-19N FED 12B-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 1203627.56 2206095.16 39.857574346 -108.328393669
EST KB Boies Ranch B-19N FED 12B-19-2-97 @ 6325.8usft (EST KB)



Azimuths to True North
Magnetic North: 9.78°
Magnetic Field
Strength: 51556.9nT
Dip Angle: 65.80°
Date: 7/17/2018
Model: IGRF2015

Boies Ranch B-19N Pad
Boies Ranch B-19N FED 12B-19-2-97
APD
11:15, September 24 2018

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
12B-19-2-97 TGT	6139.0	2282.6	-1174.1	1205946.44	2204994.46	39.863840500	-108.332576200	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	1654.1	29.89	332.78	1615.9	193.7	-99.6	3.50	332.78	217.8	
4	5930.3	29.89	332.78	5323.1	2088.9	-1074.5	0.00	0.00	2349.1	
5	6784.4	0.00	0.00	6139.0	2282.6	-1174.1	3.50	180.00	2566.9	12B-19-2-97 TGT
6	11718.4	0.00	0.00	11073.0	2282.6	-1174.1	0.00	0.00	2566.9	

ANNOTATIONS

TVD	MD	Annotation
0.1	0.1	SHL 39.857574346, -108.328393669
800.0	800.0	Start Build 3.50
1615.9	1654.1	Start 4276.2 hold at 1654.1 MD
3500.0	3827.4	Surface Casing
5323.1	5930.3	Start Drop -3.50
6139.0	6784.4	Start 4934.0 hold at 6784.4 MD
6139.0	6784.4	Back to Vertical
11073.0	11718.4	TD at 11718.4
11073.0	11718.4	BHL 39.8638405, -108.3325762

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
807.0	807.0	Mahogany Bench	0.00	
864.0	864.0	Dissolution Surface	0.00	
1969.0	2061.4	Garden Gulch Mbr	0.00	
2137.0	2255.2	Wasatch	0.00	
4578.0	5070.8	Ft Union	0.00	
5949.0	6594.0	Ohio Creek	0.00	
6139.0	6784.4	Top of Gas	0.00	
6139.0	6784.4	Williams Fork	0.00	
9248.0	9893.4	Cameo	0.00	
9793.0	10438.4	Rollins	0.00	
9937.0	10582.4	Cozzette	0.00	
10271.0	10916.4	Corcoran	0.00	
10455.0	11100.4	Upper Sego	0.00	

