

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RWF 421-8 BTV	6139.00	2088.02	-253.96	32412.2800	319665.7600	39.5449521	-107.9127805	Circle (Radius: 50.00)
- plan misses target center by 36.82usft at 7037.02mud Ht (6143.80 TVD, 2064.81 N, -2505.77 E)								
RWF 421-8 PBHL	8961.00	2088.02	-253.96	32412.2800	319665.7600	39.5449521	-107.9127805	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

RWF 12-9 Pad

RWF 421-8 - Slot RWF 421-8 (B7)

OH

Plan: Plan #1 25Sept2019mmsdi

Standard Planning Report

08 October, 2019



Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 421-8 - Slot RWF 421-8 (B7)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5979.6' &RKB 24' @ 6003.60usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5979.6' &RKB 24' @ 6003.60usft
Site:	RWF 12-9 Pad	North Reference:	True
Well:	RWF 421-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		RWF 12-9 Pad, Sec 9 T6S R94W			
Site Position:		Northing:	1,630,302.1330 usft	Latitude:	39.5393436
From:	Map	Easting:	2,322,174.9450 usft	Longitude:	-107.9036880
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.52 °

Well	RWF 421-8 - Slot RWF 421-8 (B7)					
Well Position	+N/-S	-45.00 usft	Northing:	1,630,257.9520 usft	Latitude:	39.5392200
	+E/-W	-30.19 usft	Easting:	2,322,143.5720 usft	Longitude:	-107.9037950
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,979.60 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/25/2019	9.30	65.73	51,444

Design	Plan #1 25Sept2019mmsdi			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	309.49

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,068.34	33.19	309.49	1,016.18	169.85	-206.13	3.50	3.50	0.00	309.49	
5,592.64	33.19	309.49	4,802.30	1,744.94	-2,117.58	0.00	0.00	0.00	0.00	
7,032.17	8.00	309.49	6,139.00	2,064.38	-2,505.25	1.75	-1.75	0.00	180.00	
7,565.51	0.00	0.00	6,670.60	2,088.02	-2,533.94	1.50	-1.50	0.00	180.00	
9,855.90	0.00	0.00	8,961.00	2,088.02	-2,533.94	0.00	0.00	0.00	0.00	RWF 421-8 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 421-8 - Slot RWF 421-8 (B7)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5979.6' &RKB 24' @ 6003.60usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5979.6' &RKB 24' @ 6003.60usft
Site:	RWF 12-9 Pad	North Reference:	True
Well:	RWF 421-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.50									
200.00	2.80	309.49	199.97	1.24	-1.51	1.95	3.50	3.50	0.00
300.00	6.30	309.49	299.64	6.29	-7.63	9.89	3.50	3.50	0.00
400.00	9.80	309.49	398.64	15.19	-18.44	23.89	3.50	3.50	0.00
500.00	13.30	309.49	496.60	27.92	-33.88	43.91	3.50	3.50	0.00
600.00	16.80	309.49	593.15	44.43	-53.92	69.87	3.50	3.50	0.00
700.00	20.30	309.49	687.94	64.66	-78.47	101.68	3.50	3.50	0.00
800.00	23.80	309.49	780.61	88.53	-107.44	139.21	3.50	3.50	0.00
900.00	27.30	309.49	870.82	115.95	-140.72	182.34	3.50	3.50	0.00
1,000.00	30.80	309.49	958.23	146.83	-178.18	230.89	3.50	3.50	0.00
9 5/8" Casing @ 1000' MD									
1,068.34	33.19	309.49	1,016.18	169.85	-206.13	267.09	3.50	3.50	0.00
Start 4524.30 hold at 1068.34 MD									
1,100.00	33.19	309.49	1,042.67	180.88	-219.50	284.43	0.00	0.00	0.00
1,200.00	33.19	309.49	1,126.36	215.69	-261.75	339.17	0.00	0.00	0.00
1,300.00	33.19	309.49	1,210.04	250.50	-304.00	393.91	0.00	0.00	0.00
1,400.00	33.19	309.49	1,293.73	285.32	-346.25	448.66	0.00	0.00	0.00
1,500.00	33.19	309.49	1,377.41	320.13	-388.50	503.40	0.00	0.00	0.00
1,600.00	33.19	309.49	1,461.09	354.95	-430.75	558.15	0.00	0.00	0.00
1,700.00	33.19	309.49	1,544.78	389.76	-473.00	612.89	0.00	0.00	0.00
1,800.00	33.19	309.49	1,628.46	424.57	-515.24	667.64	0.00	0.00	0.00
1,900.00	33.19	309.49	1,712.15	459.39	-557.49	722.38	0.00	0.00	0.00
2,000.00	33.19	309.49	1,795.83	494.20	-599.74	777.13	0.00	0.00	0.00
2,100.00	33.19	309.49	1,879.52	529.01	-641.99	831.87	0.00	0.00	0.00
2,200.00	33.19	309.49	1,963.20	563.83	-684.24	886.61	0.00	0.00	0.00
2,300.00	33.19	309.49	2,046.88	598.64	-726.49	941.36	0.00	0.00	0.00
2,400.00	33.19	309.49	2,130.57	633.46	-768.74	996.10	0.00	0.00	0.00
2,500.00	33.19	309.49	2,214.25	668.27	-810.99	1,050.85	0.00	0.00	0.00
2,600.00	33.19	309.49	2,297.94	703.08	-853.23	1,105.59	0.00	0.00	0.00
2,700.00	33.19	309.49	2,381.62	737.90	-895.48	1,160.34	0.00	0.00	0.00
2,800.00	33.19	309.49	2,465.31	772.71	-937.73	1,215.08	0.00	0.00	0.00
2,900.00	33.19	309.49	2,548.99	807.53	-979.98	1,269.83	0.00	0.00	0.00
2,977.69	33.19	309.49	2,614.00	834.57	-1,012.80	1,312.35	0.00	0.00	0.00
G Sand									
3,000.00	33.19	309.49	2,632.67	842.34	-1,022.23	1,324.57	0.00	0.00	0.00
3,097.18	33.19	309.49	2,714.00	876.17	-1,063.29	1,377.77	0.00	0.00	0.00
Base G Sand									
3,100.00	33.19	309.49	2,716.36	877.15	-1,064.48	1,379.32	0.00	0.00	0.00
3,200.00	33.19	309.49	2,800.04	911.97	-1,106.73	1,434.06	0.00	0.00	0.00
3,300.00	33.19	309.49	2,883.73	946.78	-1,148.98	1,488.80	0.00	0.00	0.00
3,400.00	33.19	309.49	2,967.41	981.59	-1,191.22	1,543.55	0.00	0.00	0.00
3,500.00	33.19	309.49	3,051.09	1,016.41	-1,233.47	1,598.29	0.00	0.00	0.00
3,600.00	33.19	309.49	3,134.78	1,051.22	-1,275.72	1,653.04	0.00	0.00	0.00
3,700.00	33.19	309.49	3,218.46	1,086.04	-1,317.97	1,707.78	0.00	0.00	0.00
3,800.00	33.19	309.49	3,302.15	1,120.85	-1,360.22	1,762.53	0.00	0.00	0.00
3,900.00	33.19	309.49	3,385.83	1,155.66	-1,402.47	1,817.27	0.00	0.00	0.00
4,000.00	33.19	309.49	3,469.52	1,190.48	-1,444.72	1,872.02	0.00	0.00	0.00
4,100.00	33.19	309.49	3,553.20	1,225.29	-1,486.96	1,926.76	0.00	0.00	0.00
4,200.00	33.19	309.49	3,636.88	1,260.10	-1,529.21	1,981.50	0.00	0.00	0.00
4,300.00	33.19	309.49	3,720.57	1,294.92	-1,571.46	2,036.25	0.00	0.00	0.00
4,400.00	33.19	309.49	3,804.25	1,329.73	-1,613.71	2,090.99	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 421-8 - Slot RWF 421-8 (B7)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5979.6' & RKB 24' @ 6003.60usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5979.6' & RKB 24' @ 6003.60usft
Site:	RWF 12-9 Pad	North Reference:	True
Well:	RWF 421-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

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)
4,500.00	33.19	309.49	3,887.94	1,364.55	-1,655.96	2,145.74	0.00	0.00	0.00
4,600.00	33.19	309.49	3,971.62	1,399.36	-1,698.21	2,200.48	0.00	0.00	0.00
4,700.00	33.19	309.49	4,055.30	1,434.17	-1,740.46	2,255.23	0.00	0.00	0.00
4,800.00	33.19	309.49	4,138.99	1,468.99	-1,782.71	2,309.97	0.00	0.00	0.00
4,900.00	33.19	309.49	4,222.67	1,503.80	-1,824.95	2,364.72	0.00	0.00	0.00
5,000.00	33.19	309.49	4,306.36	1,538.62	-1,867.20	2,419.46	0.00	0.00	0.00
5,100.00	33.19	309.49	4,390.04	1,573.43	-1,909.45	2,474.20	0.00	0.00	0.00
5,176.43	33.19	309.49	4,454.00	1,600.04	-1,941.74	2,516.04	0.00	0.00	0.00
Lower Wasatch									
5,200.00	33.19	309.49	4,473.73	1,608.24	-1,951.70	2,528.95	0.00	0.00	0.00
5,300.00	33.19	309.49	4,557.41	1,643.06	-1,993.95	2,583.69	0.00	0.00	0.00
5,400.00	33.19	309.49	4,641.09	1,677.87	-2,036.20	2,638.44	0.00	0.00	0.00
5,500.00	33.19	309.49	4,724.78	1,712.68	-2,078.45	2,693.18	0.00	0.00	0.00
5,592.64	33.19	309.49	4,802.30	1,744.94	-2,117.58	2,743.90	0.00	0.00	0.00
Start Drop -1.75									
5,600.00	33.06	309.49	4,808.47	1,747.49	-2,120.69	2,747.92	1.75	-1.75	0.00
5,700.00	31.31	309.49	4,893.09	1,781.37	-2,161.80	2,801.19	1.75	-1.75	0.00
5,800.00	29.56	309.49	4,979.31	1,813.58	-2,200.89	2,851.85	1.75	-1.75	0.00
5,900.00	27.81	309.49	5,067.03	1,844.11	-2,237.94	2,899.85	1.75	-1.75	0.00
5,952.88	26.89	309.49	5,114.00	1,859.56	-2,256.69	2,924.14	1.75	-1.75	0.00
MVRD									
6,000.00	26.06	309.49	5,156.18	1,872.92	-2,272.90	2,945.15	1.75	-1.75	0.00
6,100.00	24.31	309.49	5,246.66	1,899.98	-2,305.74	2,987.71	1.75	-1.75	0.00
6,200.00	22.56	309.49	5,338.41	1,925.28	-2,336.44	3,027.48	1.75	-1.75	0.00
6,300.00	20.81	309.49	5,431.33	1,948.78	-2,364.96	3,064.43	1.75	-1.75	0.00
6,400.00	19.06	309.49	5,525.33	1,970.46	-2,391.27	3,098.53	1.75	-1.75	0.00
6,500.00	17.31	309.49	5,620.33	1,990.31	-2,415.36	3,129.75	1.75	-1.75	0.00
6,600.00	15.56	309.49	5,716.24	2,008.31	-2,437.20	3,158.04	1.75	-1.75	0.00
6,700.00	13.81	309.49	5,812.97	2,024.43	-2,456.77	3,183.40	1.75	-1.75	0.00
6,800.00	12.06	309.49	5,910.42	2,038.67	-2,474.05	3,205.79	1.75	-1.75	0.00
6,900.00	10.31	309.49	6,008.52	2,051.01	-2,489.02	3,225.19	1.75	-1.75	0.00
7,000.00	8.56	309.49	6,107.16	2,061.43	-2,501.67	3,241.59	1.75	-1.75	0.00
7,032.17	8.00	309.49	6,139.00	2,064.38	-2,505.25	3,246.22	1.75	-1.75	0.00
Start Drop -1.50 - Top Gas									
7,037.02	7.93	309.49	6,143.80	2,064.81	-2,505.77	3,246.89	1.50	-1.50	0.00
RWF 421-8 BTV									
7,100.00	6.98	309.49	6,206.25	2,070.00	-2,512.07	3,255.06	1.50	-1.50	0.00
7,200.00	5.48	309.49	6,305.65	2,076.91	-2,520.45	3,265.92	1.50	-1.50	0.00
7,300.00	3.98	309.49	6,405.31	2,082.15	-2,526.82	3,274.17	1.50	-1.50	0.00
7,400.00	2.48	309.49	6,505.15	2,085.74	-2,531.17	3,279.81	1.50	-1.50	0.00
7,500.00	0.98	309.49	6,605.10	2,087.66	-2,533.50	3,282.83	1.50	-1.50	0.00
7,565.51	0.00	0.00	6,670.60	2,088.02	-2,533.94	3,283.39	1.50	-1.50	0.00
Start 2290.40 hold at 7565.51 MD									
7,600.00	0.00	0.00	6,705.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
7,700.00	0.00	0.00	6,805.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
7,800.00	0.00	0.00	6,905.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
7,900.00	0.00	0.00	7,005.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
8,000.00	0.00	0.00	7,105.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
8,100.00	0.00	0.00	7,205.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
8,200.00	0.00	0.00	7,305.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
8,300.00	0.00	0.00	7,405.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
8,400.00	0.00	0.00	7,505.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
8,500.00	0.00	0.00	7,605.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00

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Project:	Garfield County, CO NAD83	MD Reference:	GL 5979.6' &RKB 24' @ 6003.60usft
Site:	RWF 12-9 Pad	North Reference:	True
Well:	RWF 421-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

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)
8,600.00	0.00	0.00	7,705.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
8,700.00	0.00	0.00	7,805.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
8,800.00	0.00	0.00	7,905.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
8,808.90	0.00	0.00	7,914.00	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
Cameo									
8,900.00	0.00	0.00	8,005.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,000.00	0.00	0.00	8,105.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,100.00	0.00	0.00	8,205.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,200.00	0.00	0.00	8,305.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,300.00	0.00	0.00	8,405.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,400.00	0.00	0.00	8,505.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,500.00	0.00	0.00	8,605.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,600.00	0.00	0.00	8,705.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,700.00	0.00	0.00	8,805.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,705.90	0.00	0.00	8,811.00	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
RLNS									
9,800.00	0.00	0.00	8,905.10	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
9,855.90	0.00	0.00	8,961.00	2,088.02	-2,533.94	3,283.39	0.00	0.00	0.00
TD at 9855.90 - TD - RWF 421-8 PBHL									

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									
RWF 421-8 BTV	0.00	0.00	6,139.00	2,088.02	-2,533.94	1,632,412.2800	2,319,665.7600	39.5449521	-107.9127805
- plan misses target center by 36.82usft at 7037.02usft MD (6143.80 TVD, 2064.81 N, -2505.77 E)									
- Circle (radius 50.00)									
RWF 421-8 PBHL	0.00	0.00	8,961.00	2,088.02	-2,533.94	1,632,412.2800	2,319,665.7600	39.5449521	-107.9127805
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	958.23	9 5/8" Casing @ 1000' MD	9.62	13.50	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 421-8 - Slot RWF 421-8 (B7)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5979.6' &RKB 24' @ 6003.60usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5979.6' &RKB 24' @ 6003.60usft
Site:	RWF 12-9 Pad	North Reference:	True
Well:	RWF 421-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,977.69	2,614.00	G Sand		0.00	0.00	
3,097.18	2,714.00	Base G Sand		0.00	0.00	
5,176.43	4,454.00	Lower Wasatch		0.00	0.00	
5,952.88	5,114.00	MVRD		0.00	0.00	
7,032.17	6,139.00	Top Gas		0.00	0.00	
8,808.90	7,914.00	Cameo		0.00	0.00	
9,705.90	8,811.00	RLNS		0.00	0.00	
9,855.90	8,961.00	TD		0.00	0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.00	Start Build 3.50	
1,068.34	1,016.18	169.85	-206.13	Start 4524.30 hold at 1068.34 MD	
5,592.64	4,802.30	1,744.94	-2,117.58	Start Drop -1.75	
7,032.17	6,139.00	2,064.38	-2,505.25	Start Drop -1.50	
7,565.51	6,670.60	2,088.02	-2,533.94	Start 2290.40 hold at 7565.51 MD	
9,855.90	8,961.00	2,088.02	-2,533.94	TD at 9855.90	