

Name	TVD	+N/-S	+E/-W	Northing	Eastng	Latitude	Longitude	Shape
RWF 414-4 BTV	6215.00	3748.14	1094.46	3407.44	23339.8600	39.5495971	-107.8999059	Circle (Radius: 50.00)
- plan misses target center by 27.61usft at 7466.03usft MD (6218.66 TVD, 3721.89 N, 1086.67 E)								
RWF 414-4 PBHL	9109.00	3748.14	1094.46	3407.44	23339.8600	39.5495971	-107.8999059	Point
- plan misses target center by 0.01usft at 10357.63usft MD (9109.00 TVD, 3748.14 N, 1094.41 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

RWF 12-9 Pad

RWF 414-4 - Slot RWF 414-4 (A3)

OH

Plan: Plan #1 25Sept2019mmsdi

Standard Planning Report

08 October, 2019



www.scientificdrilling.com



Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 414-4 - Slot RWF 414-4 (A3)
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 414-4	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 414-4 - Slot RWF 414-4 (A3)					
Well Position	+N/-S	-13.31 usft	Northing:	1,630,289.5710 usft	Latitude:	39.5393070
	+E/-W	-27.94 usft	Easting:	2,322,146.6650 usft	Longitude:	-107.9037870
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	16.28

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	
205.71	3.00	357.00	205.68	2.24	-0.12	3.50	3.50	0.00	357.00	
280.71	3.00	357.00	280.57	6.16	-0.32	0.00	0.00	0.00	0.00	
1,172.89	38.50	16.43	1,101.86	305.61	79.59	4.00	3.98	2.18	20.79	
5,937.11	38.50	16.43	4,830.16	3,150.64	918.30	0.00	0.00	0.00	0.00	
7,462.33	8.00	16.41	6,215.00	3,721.40	1,086.53	2.00	-2.00	0.00	-180.00	
7,862.33	0.00	0.00	6,613.70	3,748.14	1,094.41	2.00	-2.00	0.00	180.00	
10,357.63	0.00	0.00	9,109.00	3,748.14	1,094.41	0.00	0.00	0.00	0.00	RWF 414-4 PBHL

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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 414-4	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	357.00	199.97	1.95	-0.10	1.84	3.50	3.50	0.00
205.71	3.00	357.00	205.68	2.24	-0.12	2.12	3.50	3.50	0.00
Start 75.00 hold at 205.71 MD									
280.71	3.00	357.00	280.57	6.16	-0.32	5.82	0.00	0.00	0.00
Start DLS 4.00 TFO 20.79									
300.00	3.73	1.21	299.82	7.29	-0.34	6.91	4.00	3.79	21.84
400.00	7.65	9.81	399.31	17.11	0.87	16.67	4.00	3.92	8.60
500.00	11.62	12.58	497.88	33.51	4.20	33.34	4.00	3.97	2.77
600.00	15.61	13.95	595.05	56.41	9.64	56.85	4.00	3.99	1.37
700.00	19.60	14.77	690.35	85.70	17.16	87.08	4.00	3.99	0.82
800.00	23.60	15.33	783.31	121.24	26.74	123.87	4.00	3.99	0.55
900.00	27.60	15.73	873.47	162.86	38.31	167.07	4.00	4.00	0.40
1,000.00	31.59	16.03	960.41	210.34	51.83	216.44	4.00	4.00	0.31
9 5/8" Casing @ 1000' MD									
1,100.00	35.59	16.28	1,043.69	263.47	67.22	271.76	4.00	4.00	0.24
1,172.89	38.50	16.43	1,101.86	305.61	79.59	315.66	4.00	4.00	0.20
Start 4764.22 hold at 1172.89 MD									
1,200.00	38.50	16.43	1,123.08	321.80	84.36	332.54	0.00	0.00	0.00
1,300.00	38.50	16.43	1,201.34	381.51	101.96	394.80	0.00	0.00	0.00
1,400.00	38.50	16.43	1,279.59	441.23	119.57	457.06	0.00	0.00	0.00
1,500.00	38.50	16.43	1,357.85	500.95	137.17	519.31	0.00	0.00	0.00
1,600.00	38.50	16.43	1,436.10	560.66	154.78	581.57	0.00	0.00	0.00
1,700.00	38.50	16.43	1,514.36	620.38	172.38	643.83	0.00	0.00	0.00
1,800.00	38.50	16.43	1,592.62	680.10	189.99	706.09	0.00	0.00	0.00
1,900.00	38.50	16.43	1,670.87	739.81	207.59	768.34	0.00	0.00	0.00
2,000.00	38.50	16.43	1,749.13	799.53	225.19	830.60	0.00	0.00	0.00
2,100.00	38.50	16.43	1,827.38	859.25	242.80	892.86	0.00	0.00	0.00
2,200.00	38.50	16.43	1,905.64	918.96	260.40	955.12	0.00	0.00	0.00
2,300.00	38.50	16.43	1,983.90	978.68	278.01	1,017.37	0.00	0.00	0.00
2,400.00	38.50	16.43	2,062.15	1,038.40	295.61	1,079.63	0.00	0.00	0.00
2,500.00	38.50	16.43	2,140.41	1,098.11	313.22	1,141.89	0.00	0.00	0.00
2,600.00	38.50	16.43	2,218.66	1,157.83	330.82	1,204.14	0.00	0.00	0.00
2,700.00	38.50	16.43	2,296.92	1,217.55	348.43	1,266.40	0.00	0.00	0.00
2,800.00	38.50	16.43	2,375.18	1,277.26	366.03	1,328.66	0.00	0.00	0.00
2,900.00	38.50	16.43	2,453.43	1,336.98	383.63	1,390.92	0.00	0.00	0.00
3,000.00	38.50	16.43	2,531.69	1,396.70	401.24	1,453.17	0.00	0.00	0.00
3,100.00	38.50	16.43	2,609.95	1,456.41	418.84	1,515.43	0.00	0.00	0.00
3,200.00	38.50	16.43	2,688.20	1,516.13	436.45	1,577.69	0.00	0.00	0.00
3,202.30	38.50	16.43	2,690.00	1,517.50	436.85	1,579.12	0.00	0.00	0.00
G Sand									
3,300.00	38.50	16.43	2,766.46	1,575.85	454.05	1,639.94	0.00	0.00	0.00
3,330.08	38.50	16.43	2,790.00	1,593.81	459.35	1,658.67	0.00	0.00	0.00
G Sand Base									
3,400.00	38.50	16.43	2,844.71	1,635.56	471.66	1,702.20	0.00	0.00	0.00
3,500.00	38.50	16.43	2,922.97	1,695.28	489.26	1,764.46	0.00	0.00	0.00
3,600.00	38.50	16.43	3,001.23	1,754.99	506.87	1,826.72	0.00	0.00	0.00
3,700.00	38.50	16.43	3,079.48	1,814.71	524.47	1,888.97	0.00	0.00	0.00
3,800.00	38.50	16.43	3,157.74	1,874.43	542.07	1,951.23	0.00	0.00	0.00
3,900.00	38.50	16.43	3,235.99	1,934.14	559.68	2,013.49	0.00	0.00	0.00

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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 414-4	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)
4,000.00	38.50	16.43	3,314.25	1,993.86	577.28	2,075.74	0.00	0.00	0.00
4,100.00	38.50	16.43	3,392.51	2,053.58	594.89	2,138.00	0.00	0.00	0.00
4,200.00	38.50	16.43	3,470.76	2,113.29	612.49	2,200.26	0.00	0.00	0.00
4,300.00	38.50	16.43	3,549.02	2,173.01	630.10	2,262.52	0.00	0.00	0.00
4,400.00	38.50	16.43	3,627.27	2,232.73	647.70	2,324.77	0.00	0.00	0.00
4,500.00	38.50	16.43	3,705.53	2,292.44	665.31	2,387.03	0.00	0.00	0.00
4,600.00	38.50	16.43	3,783.79	2,352.16	682.91	2,449.29	0.00	0.00	0.00
4,700.00	38.50	16.43	3,862.04	2,411.88	700.51	2,511.55	0.00	0.00	0.00
4,800.00	38.50	16.43	3,940.30	2,471.59	718.12	2,573.80	0.00	0.00	0.00
4,900.00	38.50	16.43	4,018.55	2,531.31	735.72	2,636.06	0.00	0.00	0.00
5,000.00	38.50	16.43	4,096.81	2,591.03	753.33	2,698.32	0.00	0.00	0.00
5,100.00	38.50	16.43	4,175.07	2,650.74	770.93	2,760.57	0.00	0.00	0.00
5,200.00	38.50	16.43	4,253.32	2,710.46	788.54	2,822.83	0.00	0.00	0.00
5,300.00	38.50	16.43	4,331.58	2,770.18	806.14	2,885.09	0.00	0.00	0.00
5,400.00	38.50	16.43	4,409.83	2,829.89	823.75	2,947.35	0.00	0.00	0.00
5,500.00	38.50	16.43	4,488.09	2,889.61	841.35	3,009.60	0.00	0.00	0.00
5,553.55	38.50	16.43	4,530.00	2,921.59	850.78	3,042.94	0.00	0.00	0.00
Lower Wasatch									
5,600.00	38.50	16.43	4,566.35	2,949.33	858.95	3,071.86	0.00	0.00	0.00
5,700.00	38.50	16.43	4,644.60	3,009.04	876.56	3,134.12	0.00	0.00	0.00
5,800.00	38.50	16.43	4,722.86	3,068.76	894.16	3,196.37	0.00	0.00	0.00
5,900.00	38.50	16.43	4,801.12	3,128.48	911.77	3,258.63	0.00	0.00	0.00
5,937.11	38.50	16.43	4,830.16	3,150.64	918.30	3,281.74	0.00	0.00	0.00
Start DLS 2.00 TFO -180.00									
6,000.00	37.25	16.43	4,879.80	3,187.67	929.22	3,320.35	2.00	-2.00	0.00
6,100.00	35.25	16.43	4,960.44	3,244.38	945.94	3,379.47	2.00	-2.00	0.00
6,200.00	33.25	16.42	5,043.10	3,298.36	961.85	3,435.74	2.00	-2.00	0.00
6,300.00	31.25	16.42	5,127.67	3,349.54	976.93	3,489.09	2.00	-2.00	0.00
6,372.36	29.80	16.42	5,190.00	3,384.78	987.32	3,525.84	2.00	-2.00	0.00
MVRD									
6,400.00	29.25	16.42	5,214.05	3,397.85	991.18	3,539.46	2.00	-2.00	0.00
6,500.00	27.25	16.42	5,302.14	3,443.24	1,004.56	3,586.79	2.00	-2.00	0.00
6,600.00	25.25	16.42	5,391.83	3,485.66	1,017.06	3,631.01	2.00	-2.00	0.00
6,700.00	23.25	16.42	5,483.00	3,525.05	1,028.67	3,672.07	2.00	-2.00	0.00
6,800.00	21.25	16.42	5,575.55	3,561.36	1,039.37	3,709.93	2.00	-2.00	0.00
6,900.00	19.25	16.42	5,669.37	3,594.55	1,049.15	3,744.54	2.00	-2.00	0.00
7,000.00	17.25	16.42	5,764.33	3,624.59	1,058.01	3,775.84	2.00	-2.00	0.00
7,100.00	15.25	16.42	5,860.34	3,651.42	1,065.91	3,803.82	2.00	-2.00	0.00
7,200.00	13.25	16.42	5,957.26	3,675.03	1,072.87	3,828.43	2.00	-2.00	0.00
7,300.00	11.25	16.42	6,054.98	3,695.37	1,078.86	3,849.64	2.00	-2.00	0.00
7,400.00	9.25	16.41	6,153.38	3,712.44	1,083.89	3,867.43	2.00	-2.00	0.00
7,462.33	8.00	16.41	6,215.00	3,721.40	1,086.53	3,876.77	2.00	-2.00	0.00
Start Drop -2.00 - Top Gas									
7,466.03	7.93	16.41	6,218.66	3,721.89	1,086.67	3,877.28	2.00	-2.00	0.00
RWF 414-4 BTW									
7,500.00	7.25	16.41	6,252.34	3,726.19	1,087.94	3,881.77	2.00	-2.00	0.00
7,600.00	5.25	16.41	6,351.74	3,736.63	1,091.02	3,892.65	2.00	-2.00	0.00
7,700.00	3.25	16.41	6,451.46	3,743.73	1,093.11	3,900.05	2.00	-2.00	0.00
7,800.00	1.25	16.41	6,551.38	3,747.49	1,094.21	3,903.97	2.00	-2.00	0.00
7,862.33	0.00	0.00	6,613.70	3,748.14	1,094.41	3,904.65	2.00	-2.00	0.00
Start 2495.30 hold at 7862.33 MD									
7,900.00	0.00	0.00	6,651.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00
8,000.00	0.00	0.00	6,751.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00

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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)	
8,100.00	0.00	0.00	6,851.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
8,200.00	0.00	0.00	6,951.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
8,300.00	0.00	0.00	7,051.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
8,400.00	0.00	0.00	7,151.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
8,500.00	0.00	0.00	7,251.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
8,600.00	0.00	0.00	7,351.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
8,700.00	0.00	0.00	7,451.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
8,800.00	0.00	0.00	7,551.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
8,900.00	0.00	0.00	7,651.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,000.00	0.00	0.00	7,751.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,100.00	0.00	0.00	7,851.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,200.00	0.00	0.00	7,951.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,300.00	0.00	0.00	8,051.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,310.63	0.00	0.00	8,062.00	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
Cameo										
9,400.00	0.00	0.00	8,151.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,500.00	0.00	0.00	8,251.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,600.00	0.00	0.00	8,351.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,700.00	0.00	0.00	8,451.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,800.00	0.00	0.00	8,551.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
9,900.00	0.00	0.00	8,651.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
10,000.00	0.00	0.00	8,751.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
10,100.00	0.00	0.00	8,851.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
10,200.00	0.00	0.00	8,951.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
10,207.63	0.00	0.00	8,959.00	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
RLNS										
10,300.00	0.00	0.00	9,051.37	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
10,357.63	0.00	0.00	9,109.00	3,748.14	1,094.41	3,904.65	0.00	0.00	0.00	
TD at 10357.63 - RWF 414-4 PBHL										

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting		
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	Latitude	Longitude
RWF 414-4 BTV	0.00	0.00	6,215.00	3,748.14	1,094.41	1,634,007.4400	2,323,339.8600	39.5495971	-107.8999059
- plan misses target center by 27.61usft at 7466.03usft MD (6218.66 TVD, 3721.89 N, 1086.67 E)									
- Circle (radius 50.00)									
RWF 414-4 PBHL	0.00	0.00	9,109.00	3,748.14	1,094.41	1,634,007.4400	2,323,339.8600	39.5495971	-107.8999059
- plan misses target center by 0.01usft at 10357.63usft MD (9109.00 TVD, 3748.14 N, 1094.41 E)									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,000.00	960.41	9 5/8" Casing @ 1000' MD		9.62	13.50

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 414-4 - Slot RWF 414-4 (A3)
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 414-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,202.30	2,690.00	G Sand		0.00	0.00	
3,330.08	2,790.00	G Sand Base		0.00	0.00	
5,553.55	4,530.00	Lower Wasatch		0.00	0.00	
6,372.36	5,190.00	MVRD		0.00	0.00	
7,462.33	6,215.00	Top Gas		0.00	0.00	
9,310.63	8,062.00	Cameo		0.00	0.00	
10,207.63	8,959.00	RLNS		0.00	0.00	
10,357.63	9,109.00	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	
205.71	205.68	2.24	-0.12	Start 75.00 hold at 205.71 MD	
280.71	280.57	6.16	-0.32	Start DLS 4.00 TFO 20.79	
1,172.89	1,101.86	305.61	79.59	Start 4764.22 hold at 1172.89 MD	
5,937.11	4,830.16	3,150.64	918.30	Start DLS 2.00 TFO -180.00	
7,462.33	6,215.00	3,721.40	1,086.53	Start Drop -2.00	
7,862.33	6,613.70	3,748.14	1,094.41	Start 2495.30 hold at 7862.33 MD	
10,357.63	9,109.00	3,748.14	1,094.41	TD at 10357.63	