



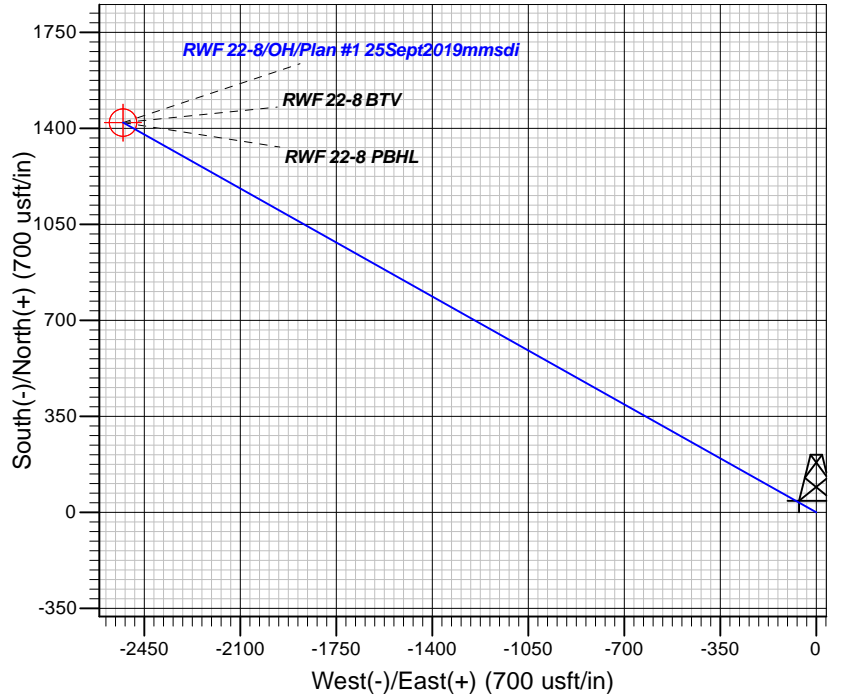
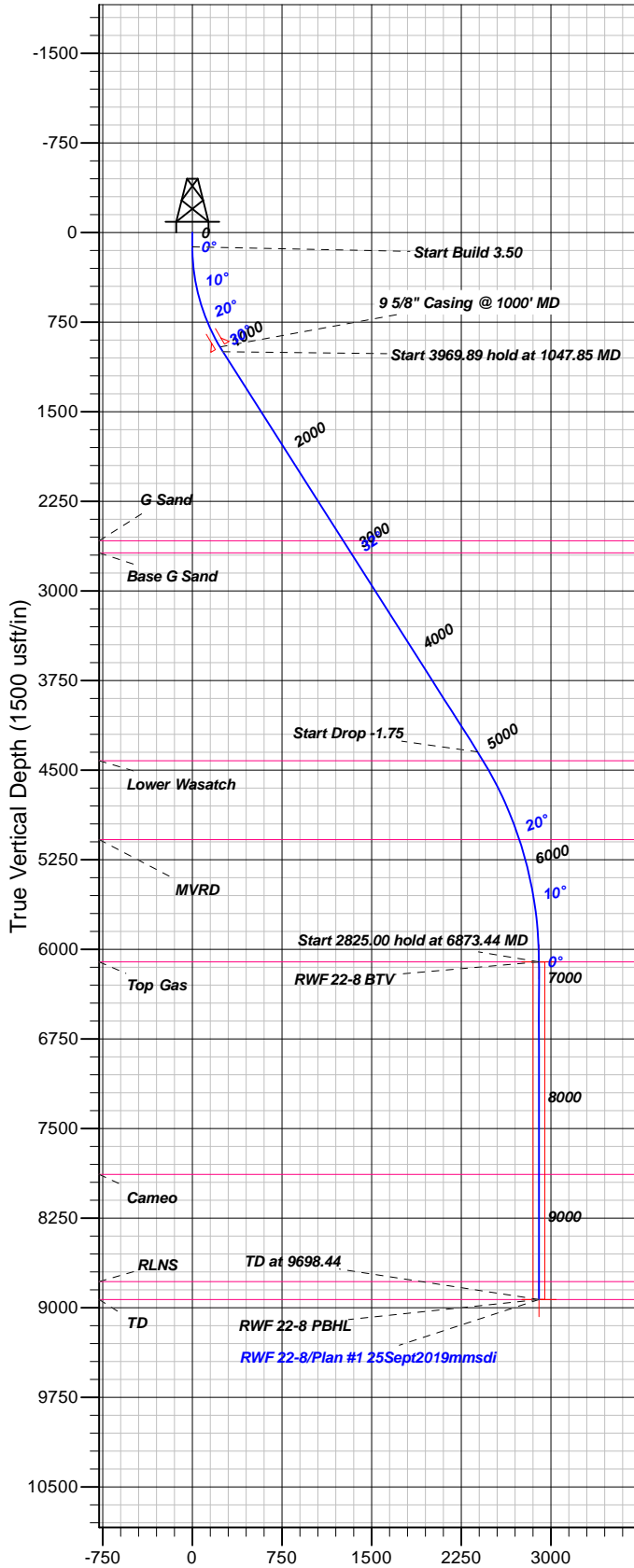
Azimuths to True North
Magnetic North: 9.30°

Magnetic Field
Strength: 51443.5nT
Dip Angle: 65.73°
Date: 9/25/2019
Model: HDGM

Well Details: RWF 22-8

GL 5979.6' & RKB 24' @ 6003.60usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1630255.3600	2322131.3720	39.5392120	-107.9038380	RWF 22-8 (A8)



FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
2581.00	2923.13	G Sand
2681.00	3041.66	Base G Sand
4421.00	5103.48	Lower Wasatch
5081.00	5830.91	MVRD
6106.00	6873.44	Top Gas
7884.00	8651.44	Cameo
8781.00	9548.44	RLNS
8931.00	9698.44	TD

Plan: Plan #1 25Sept2019mmsdi

17:46, October 07 2019
Created By: Mel Mireles

PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone

System Datum: Mean Sea Level

CASING DETAILS

TVDPATH	MDPATH	NAME	SIZE
958.23	1000.00	5/8" Casing @ 1000' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	
3	1047.85	32.47	299.34	998.96	125.45	-223.14	3.50	299.34	255.98	
4	5017.74	32.47	299.34	4348.08	1170.04	-2081.18	0.00	0.002387.53		
5	6873.44	0.00	0.00	6106.00	1420.94	-2527.45	1.75	180.002899.50		RWF 22-8 BTV
6	9698.44	0.00	0.00	8931.00	1420.94	-2527.45	0.00	0.002899.50		RWF 22-8 PBHL

DESIGN TARGET DETAILS

Name	TVDPATH	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RWF 22-8 BTV	6106.00	1420.94	-2527.45	1742.6700	19642.4000	39.5431127	-107.9128002	Circle (Radius: 50.00)
- plan hits target center								
RWF 22-8 PBHL	8931.00	1420.94	-2527.45	1742.6700	19642.4000	39.5431127	-107.9128002	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

RWF 12-9 Pad

RWF 22-8 - Slot RWF 22-8 (A8)

OH

Plan: Plan #1 25Sept2019mmsdi

Standard Planning Report

07 October, 2019



www.scientificdrilling.com



Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 22-8 - Slot RWF 22-8 (A8)
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 22-8	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 22-8 - Slot RWF 22-8 (A8)					
Well Position	+N/-S	-47.91 usft	Northing:	1,630,255.3600 usft	Latitude:	39.5392120
	+E/-W	-42.32 usft	Easting:	2,322,131.3720 usft	Longitude:	-107.9038380
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	299.34

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	
1,047.85	32.47	299.34	998.96	125.45	-223.14	3.50	3.50	0.00	299.34	
5,017.74	32.47	299.34	4,348.08	1,170.04	-2,081.18	0.00	0.00	0.00	0.00	
6,873.44	0.00	0.00	6,106.00	1,420.94	-2,527.45	1.75	-1.75	0.00	180.00	RWF 22-8 BTW
9,698.44	0.00	0.00	8,931.00	1,420.94	-2,527.45	0.00	0.00	0.00	0.00	RWF 22-8 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 22-8 - Slot RWF 22-8 (A8)
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 22-8	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	299.34	199.97	0.96	-1.70	1.95	3.50	3.50	0.00
300.00	6.30	299.34	299.64	4.84	-8.62	9.89	3.50	3.50	0.00
400.00	9.80	299.34	398.64	11.71	-20.82	23.89	3.50	3.50	0.00
500.00	13.30	299.34	496.60	21.52	-38.27	43.91	3.50	3.50	0.00
600.00	16.80	299.34	593.15	34.24	-60.90	69.87	3.50	3.50	0.00
700.00	20.30	299.34	687.94	49.83	-88.63	101.68	3.50	3.50	0.00
800.00	23.80	299.34	780.61	68.22	-121.35	139.21	3.50	3.50	0.00
900.00	27.30	299.34	870.82	89.36	-158.94	182.34	3.50	3.50	0.00
1,000.00	30.80	299.34	958.23	113.15	-201.26	230.89	3.50	3.50	0.00
9 5/8" Casing @ 1000' MD									
1,047.85	32.47	299.34	998.96	125.45	-223.14	255.98	3.50	3.50	0.00
Start 3969.89 hold at 1047.85 MD									
1,100.00	32.47	299.34	1,042.96	139.17	-247.55	283.98	0.00	0.00	0.00
1,200.00	32.47	299.34	1,127.32	165.48	-294.35	337.68	0.00	0.00	0.00
1,300.00	32.47	299.34	1,211.68	191.80	-341.15	391.37	0.00	0.00	0.00
1,400.00	32.47	299.34	1,296.05	218.11	-387.96	445.06	0.00	0.00	0.00
1,500.00	32.47	299.34	1,380.41	244.42	-434.76	498.76	0.00	0.00	0.00
1,600.00	32.47	299.34	1,464.77	270.74	-481.56	552.45	0.00	0.00	0.00
1,700.00	32.47	299.34	1,549.14	297.05	-528.37	606.14	0.00	0.00	0.00
1,800.00	32.47	299.34	1,633.50	323.36	-575.17	659.83	0.00	0.00	0.00
1,900.00	32.47	299.34	1,717.86	349.67	-621.97	713.53	0.00	0.00	0.00
2,000.00	32.47	299.34	1,802.22	375.99	-668.78	767.22	0.00	0.00	0.00
2,100.00	32.47	299.34	1,886.59	402.30	-715.58	820.91	0.00	0.00	0.00
2,200.00	32.47	299.34	1,970.95	428.61	-762.38	874.61	0.00	0.00	0.00
2,300.00	32.47	299.34	2,055.31	454.93	-809.18	928.30	0.00	0.00	0.00
2,400.00	32.47	299.34	2,139.68	481.24	-855.99	981.99	0.00	0.00	0.00
2,500.00	32.47	299.34	2,224.04	507.55	-902.79	1,035.68	0.00	0.00	0.00
2,600.00	32.47	299.34	2,308.40	533.86	-949.59	1,089.38	0.00	0.00	0.00
2,700.00	32.47	299.34	2,392.76	560.18	-996.40	1,143.07	0.00	0.00	0.00
2,800.00	32.47	299.34	2,477.13	586.49	-1,043.20	1,196.76	0.00	0.00	0.00
2,900.00	32.47	299.34	2,561.49	612.80	-1,090.00	1,250.45	0.00	0.00	0.00
2,923.13	32.47	299.34	2,581.00	618.89	-1,100.83	1,262.87	0.00	0.00	0.00
G Sand									
3,000.00	32.47	299.34	2,645.85	639.12	-1,136.81	1,304.15	0.00	0.00	0.00
3,041.66	32.47	299.34	2,681.00	650.08	-1,156.31	1,326.52	0.00	0.00	0.00
Base G Sand									
3,100.00	32.47	299.34	2,730.21	665.43	-1,183.61	1,357.84	0.00	0.00	0.00
3,200.00	32.47	299.34	2,814.58	691.74	-1,230.41	1,411.53	0.00	0.00	0.00
3,300.00	32.47	299.34	2,898.94	718.05	-1,277.22	1,465.23	0.00	0.00	0.00
3,400.00	32.47	299.34	2,983.30	744.37	-1,324.02	1,518.92	0.00	0.00	0.00
3,500.00	32.47	299.34	3,067.67	770.68	-1,370.82	1,572.61	0.00	0.00	0.00
3,600.00	32.47	299.34	3,152.03	796.99	-1,417.63	1,626.30	0.00	0.00	0.00
3,700.00	32.47	299.34	3,236.39	823.31	-1,464.43	1,680.00	0.00	0.00	0.00
3,800.00	32.47	299.34	3,320.75	849.62	-1,511.23	1,733.69	0.00	0.00	0.00
3,900.00	32.47	299.34	3,405.12	875.93	-1,558.04	1,787.38	0.00	0.00	0.00
4,000.00	32.47	299.34	3,489.48	902.24	-1,604.84	1,841.07	0.00	0.00	0.00
4,100.00	32.47	299.34	3,573.84	928.56	-1,651.64	1,894.77	0.00	0.00	0.00
4,200.00	32.47	299.34	3,658.21	954.87	-1,698.45	1,948.46	0.00	0.00	0.00
4,300.00	32.47	299.34	3,742.57	981.18	-1,745.25	2,002.15	0.00	0.00	0.00
4,400.00	32.47	299.34	3,826.93	1,007.50	-1,792.05	2,055.85	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 22-8	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	32.47	299.34	3,911.29	1,033.81	-1,838.86	2,109.54	0.00	0.00	0.00
4,600.00	32.47	299.34	3,995.66	1,060.12	-1,885.66	2,163.23	0.00	0.00	0.00
4,700.00	32.47	299.34	4,080.02	1,086.43	-1,932.46	2,216.92	0.00	0.00	0.00
4,800.00	32.47	299.34	4,164.38	1,112.75	-1,979.27	2,270.62	0.00	0.00	0.00
4,900.00	32.47	299.34	4,248.75	1,139.06	-2,026.07	2,324.31	0.00	0.00	0.00
5,000.00	32.47	299.34	4,333.11	1,165.37	-2,072.87	2,378.00	0.00	0.00	0.00
5,017.74	32.47	299.34	4,348.08	1,170.04	-2,081.18	2,387.53	0.00	0.00	0.00
Start Drop -1.75									
5,100.00	31.04	299.34	4,418.02	1,191.26	-2,118.91	2,430.82	1.75	-1.75	0.00
5,103.48	30.97	299.34	4,421.00	1,192.13	-2,120.47	2,432.61	1.75	-1.75	0.00
Lower Wasatch									
5,200.00	29.29	299.34	4,504.48	1,215.88	-2,162.71	2,481.06	1.75	-1.75	0.00
5,300.00	27.54	299.34	4,592.43	1,239.19	-2,204.18	2,528.63	1.75	-1.75	0.00
5,400.00	25.79	299.34	4,681.80	1,261.18	-2,243.29	2,573.50	1.75	-1.75	0.00
5,500.00	24.04	299.34	4,772.49	1,281.82	-2,280.00	2,615.62	1.75	-1.75	0.00
5,600.00	22.29	299.34	4,864.43	1,301.09	-2,314.28	2,654.95	1.75	-1.75	0.00
5,700.00	20.54	299.34	4,957.52	1,318.98	-2,346.10	2,691.45	1.75	-1.75	0.00
5,800.00	18.79	299.34	5,051.69	1,335.47	-2,375.43	2,725.10	1.75	-1.75	0.00
5,830.91	18.24	299.34	5,081.00	1,340.28	-2,383.99	2,734.91	1.75	-1.75	0.00
MVRD									
5,900.00	17.04	299.34	5,146.84	1,350.54	-2,402.23	2,755.85	1.75	-1.75	0.00
6,000.00	15.29	299.34	5,242.88	1,364.18	-2,426.49	2,783.68	1.75	-1.75	0.00
6,100.00	13.54	299.34	5,339.73	1,376.38	-2,448.19	2,808.56	1.75	-1.75	0.00
6,200.00	11.79	299.34	5,437.30	1,387.12	-2,467.29	2,830.48	1.75	-1.75	0.00
6,300.00	10.04	299.34	5,535.49	1,396.39	-2,483.79	2,849.41	1.75	-1.75	0.00
6,400.00	8.29	299.34	5,634.21	1,404.19	-2,497.66	2,865.32	1.75	-1.75	0.00
6,500.00	6.54	299.34	5,733.37	1,410.51	-2,508.91	2,878.22	1.75	-1.75	0.00
6,600.00	4.79	299.34	5,832.88	1,415.35	-2,517.50	2,888.08	1.75	-1.75	0.00
6,700.00	3.04	299.34	5,932.64	1,418.69	-2,523.45	2,894.90	1.75	-1.75	0.00
6,800.00	1.29	299.34	6,032.57	1,420.53	-2,526.73	2,898.67	1.75	-1.75	0.00
6,873.44	0.00	0.00	6,106.00	1,420.94	-2,527.45	2,899.50	1.75	-1.75	0.00
Start 2825.00 hold at 6873.44 MD - Top Gas - RWF 22-8 BTV									
6,900.00	0.00	0.00	6,132.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,000.00	0.00	0.00	6,232.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,100.00	0.00	0.00	6,332.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,200.00	0.00	0.00	6,432.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,300.00	0.00	0.00	6,532.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,400.00	0.00	0.00	6,632.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,500.00	0.00	0.00	6,732.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,600.00	0.00	0.00	6,832.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,700.00	0.00	0.00	6,932.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,800.00	0.00	0.00	7,032.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
7,900.00	0.00	0.00	7,132.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
8,000.00	0.00	0.00	7,232.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
8,100.00	0.00	0.00	7,332.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
8,200.00	0.00	0.00	7,432.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
8,300.00	0.00	0.00	7,532.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
8,400.00	0.00	0.00	7,632.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
8,500.00	0.00	0.00	7,732.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
8,600.00	0.00	0.00	7,832.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
8,651.44	0.00	0.00	7,884.00	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
Cameo									
8,700.00	0.00	0.00	7,932.56	1,420.94	-2,527.45	2,899.50	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 22-8	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)
8,800.00	0.00	0.00	8,032.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
8,900.00	0.00	0.00	8,132.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
9,000.00	0.00	0.00	8,232.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
9,100.00	0.00	0.00	8,332.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
9,200.00	0.00	0.00	8,432.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
9,300.00	0.00	0.00	8,532.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
9,400.00	0.00	0.00	8,632.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
9,500.00	0.00	0.00	8,732.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
9,548.44	0.00	0.00	8,781.00	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
RLNS									
9,600.00	0.00	0.00	8,832.56	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
9,698.44	0.00	0.00	8,931.00	1,420.94	-2,527.45	2,899.50	0.00	0.00	0.00
TD at 9698.44 - TD - RWF 22-8 PBHL									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RWF 22-8 BTV - plan hits target center - Circle (radius 50.00)	0.00	0.00	6,106.00	1,420.94	-2,527.45	1,631,742.6700	2,319,642.4000	39.5431127	-107.9128003
RWF 22-8 PBHL - plan hits target center - Point	0.00	0.00	8,931.00	1,420.94	-2,527.45	1,631,742.6700	2,319,642.4000	39.5431127	-107.9128003

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	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,923.13	2,581.00	G Sand		0.00	0.00
3,041.66	2,681.00	Base G Sand		0.00	0.00
5,103.48	4,421.00	Lower Wasatch		0.00	0.00
5,830.91	5,081.00	MVRD		0.00	0.00
6,873.44	6,106.00	Top Gas		0.00	0.00
8,651.44	7,884.00	Cameo		0.00	0.00
9,548.44	8,781.00	RLNS		0.00	0.00
9,698.44	8,931.00	TD		0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 22-8 - Slot RWF 22-8 (A8)
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 22-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 25Sept2019mmsdi		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.00	120.00	0.00	0.00	Start Build 3.50
1,047.85	998.96	125.45	-223.14	Start 3969.89 hold at 1047.85 MD
5,017.74	4,348.08	1,170.04	-2,081.18	Start Drop -1.75
6,873.44	6,106.00	1,420.94	-2,527.45	Start 2825.00 hold at 6873.44 MD
9,698.44	8,931.00	1,420.94	-2,527.45	TD at 9698.44