



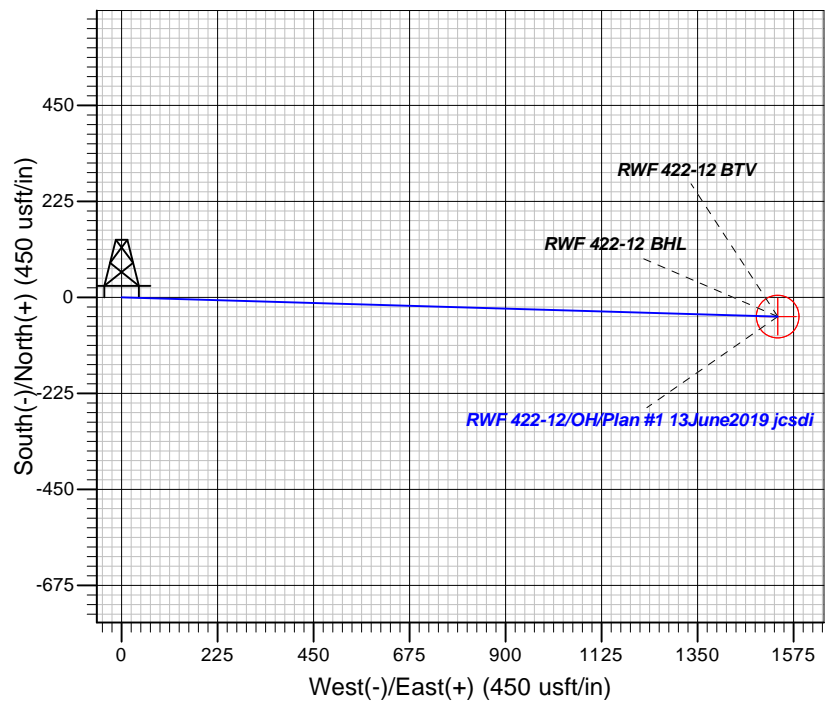
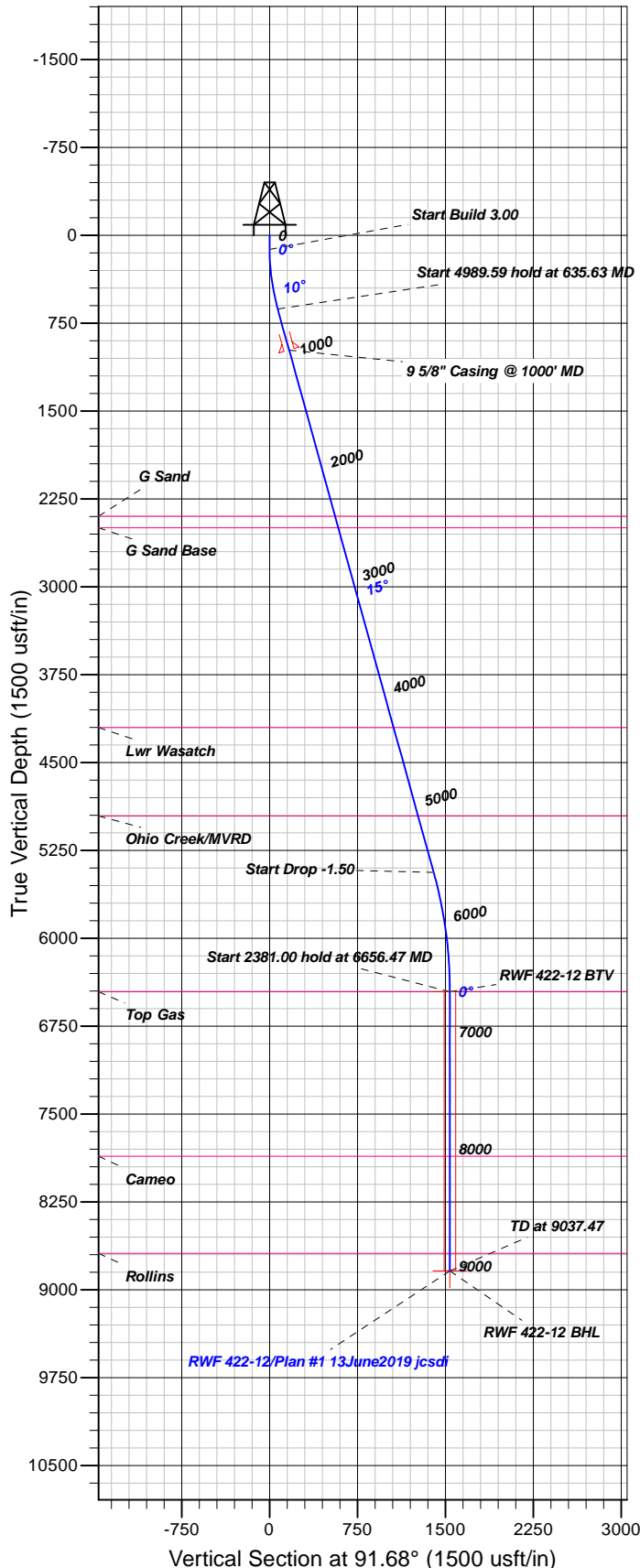
Azimuths to True North  
Magnetic North: 9.37°

Magnetic Field  
Strength: 51377.5nT  
Dip Angle: 65.62°  
Date: 6/13/2019  
Model: BGGM2016

## Well Details: RWF 422-12

GL 5466.8' & RKB 24' @ 5490.80usft (H&P 318)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1630810.60	2339705.30	39.5419958	-107.8415966	



## FORMATION TOP DETAILS

TVDPth	MDPath	Formation
2397.00	2469.68	G Sand
2497.00	2573.44	G Sand Base
4202.00	4342.52	Lwr Wasatch
4957.00	5125.90	Ohio Creek/MVRD
6457.00	6656.47	Top Gas
7861.00	8060.47	Cameo
8688.00	8887.47	Rollins

Plan: Plan #1 13June2019 jcsdi

15:47, June 18 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

TVD	MD	Name	Size
980.56	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	635.63	15.47	91.68	629.39	-2.03	69.15	3.00	91.68	69.18	
4	5625.21	15.47	91.68	5438.23	-41.12	1399.37	0.00	0.001399.97		
5	6656.47	0.00	0.00	6457.00	-45.19	1537.68	1.50	180.001538.34		RWF 422-12 BTV
6	9037.47	0.00	0.00	8838.00	-45.19	1537.68	0.00	0.001538.34		RWF 422-12 BHL

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RWF 422-12 BTV	6457.00	-45.19	1537.68	1630725.80	2341241.30	39.5418716	-107.8361441	Circle (Radius: 50.00)
- plan hits target center								
RWF 422-12 BHL	8838.00	-45.19	1537.68	1630725.80	2341241.30	39.5418716	-107.8361441	Point
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**RWF 12-12 Pad**

**RWF 422-12**

**OH**

**Plan: Plan #1 13June2019 jcsdi**

## **Standard Planning Report**

**18 June, 2019**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well RWF 422-12
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5466.8' & RKB 24' @ 5490.80usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5466.8' & RKB 24' @ 5490.80usft (H&P 318)
<b>Site:</b>	RWF 12-12 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 422-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 13June2019 jcsdi		

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

Site		RWF 12-12 Pad			
Site Position:		Northing:	1,630,797.20 usft	Latitude:	39.5419586
From:	Map	Easting:	2,339,698.60 usft	Longitude:	-107.8416191
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.48 °

Well	RWF 422-12					
Well Position	+N-S	13.57 usft	Northing:	1,630,810.60 usft	Latitude:	39.5419958
	+E-W	6.35 usft	Easting:	2,339,705.30 usft	Longitude:	-107.8415966
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,466.80 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2016	6/13/2019	9.37	65.62	51,378

<b>Design</b>	Plan #1 13June2019 jcsdi			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	91.68

<b>Plan Sections</b>										
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	
635.63	15.47	91.68	629.39	-2.03	69.15	3.00	3.00	0.00	91.68	
5,625.21	15.47	91.68	5,438.23	-41.12	1,399.37	0.00	0.00	0.00	0.00	
6,656.47	0.00	0.00	6,457.00	-45.19	1,537.68	1.50	-1.50	0.00	180.00	RWF 422-12 BTV
9,037.47	0.00	0.00	8,838.00	-45.19	1,537.68	0.00	0.00	0.00	0.00	RWF 422-12 BHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well RWF 422-12
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5466.8' & RKB 24' @ 5490.80usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5466.8' & RKB 24' @ 5490.80usft (H&P 318)
<b>Site:</b>	RWF 12-12 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 422-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 13June2019 jcsdi		

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 3.00										
200.00	2.40	91.68	199.98	-0.05	1.67	1.68	3.00	3.00	0.00	
300.00	5.40	91.68	299.73	-0.25	8.47	8.48	3.00	3.00	0.00	
400.00	8.40	91.68	399.00	-0.60	20.48	20.49	3.00	3.00	0.00	
500.00	11.40	91.68	497.50	-1.11	37.66	37.68	3.00	3.00	0.00	
600.00	14.40	91.68	594.96	-1.76	59.98	60.00	3.00	3.00	0.00	
635.63	15.47	91.68	629.39	-2.03	69.15	69.18	3.00	3.00	0.00	
Start 4989.59 hold at 635.63 MD										
700.00	15.47	91.68	691.43	-2.54	86.32	86.35	0.00	0.00	0.00	
800.00	15.47	91.68	787.80	-3.32	112.97	113.02	0.00	0.00	0.00	
900.00	15.47	91.68	884.18	-4.10	139.63	139.69	0.00	0.00	0.00	
1,000.00	15.47	91.68	980.56	-4.89	166.29	166.37	0.00	0.00	0.00	
9 5/8" Casing @ 1000' MD										
1,100.00	15.47	91.68	1,076.94	-5.67	192.95	193.04	0.00	0.00	0.00	
1,200.00	15.47	91.68	1,173.31	-6.45	219.61	219.71	0.00	0.00	0.00	
1,300.00	15.47	91.68	1,269.69	-7.24	246.27	246.38	0.00	0.00	0.00	
1,400.00	15.47	91.68	1,366.07	-8.02	272.93	273.05	0.00	0.00	0.00	
1,500.00	15.47	91.68	1,462.45	-8.80	299.59	299.72	0.00	0.00	0.00	
1,600.00	15.47	91.68	1,558.83	-9.59	326.25	326.39	0.00	0.00	0.00	
1,700.00	15.47	91.68	1,655.20	-10.37	352.91	353.07	0.00	0.00	0.00	
1,800.00	15.47	91.68	1,751.58	-11.15	379.57	379.74	0.00	0.00	0.00	
1,900.00	15.47	91.68	1,847.96	-11.94	406.23	406.41	0.00	0.00	0.00	
2,000.00	15.47	91.68	1,944.34	-12.72	432.89	433.08	0.00	0.00	0.00	
2,100.00	15.47	91.68	2,040.71	-13.50	459.55	459.75	0.00	0.00	0.00	
2,200.00	15.47	91.68	2,137.09	-14.29	486.21	486.42	0.00	0.00	0.00	
2,300.00	15.47	91.68	2,233.47	-15.07	512.87	513.09	0.00	0.00	0.00	
2,400.00	15.47	91.68	2,329.85	-15.85	539.53	539.77	0.00	0.00	0.00	
2,469.68	15.47	91.68	2,397.00	-16.40	558.11	558.35	0.00	0.00	0.00	
G Sand										
2,500.00	15.47	91.68	2,426.22	-16.64	566.19	566.44	0.00	0.00	0.00	
2,573.44	15.47	91.68	2,497.00	-17.21	585.77	586.02	0.00	0.00	0.00	
G Sand Base										
2,600.00	15.47	91.68	2,522.60	-17.42	592.85	593.11	0.00	0.00	0.00	
2,700.00	15.47	91.68	2,618.98	-18.20	619.51	619.78	0.00	0.00	0.00	
2,800.00	15.47	91.68	2,715.36	-18.99	646.17	646.45	0.00	0.00	0.00	
2,900.00	15.47	91.68	2,811.73	-19.77	672.83	673.12	0.00	0.00	0.00	
3,000.00	15.47	91.68	2,908.11	-20.55	699.49	699.79	0.00	0.00	0.00	
3,100.00	15.47	91.68	3,004.49	-21.34	726.15	726.46	0.00	0.00	0.00	
3,200.00	15.47	91.68	3,100.87	-22.12	752.81	753.14	0.00	0.00	0.00	
3,300.00	15.47	91.68	3,197.24	-22.91	779.47	779.81	0.00	0.00	0.00	
3,400.00	15.47	91.68	3,293.62	-23.69	806.13	806.48	0.00	0.00	0.00	
3,500.00	15.47	91.68	3,390.00	-24.47	832.79	833.15	0.00	0.00	0.00	
3,600.00	15.47	91.68	3,486.38	-25.26	859.45	859.82	0.00	0.00	0.00	
3,700.00	15.47	91.68	3,582.75	-26.04	886.11	886.49	0.00	0.00	0.00	
3,800.00	15.47	91.68	3,679.13	-26.82	912.77	913.16	0.00	0.00	0.00	
3,900.00	15.47	91.68	3,775.51	-27.61	939.43	939.84	0.00	0.00	0.00	
4,000.00	15.47	91.68	3,871.89	-28.39	966.09	966.51	0.00	0.00	0.00	
4,100.00	15.47	91.68	3,968.26	-29.17	992.75	993.18	0.00	0.00	0.00	

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well RWF 422-12
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<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5466.8' & RKB 24' @ 5490.80usft (H&P 318)
<b>Site:</b>	RWF 12-12 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 422-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 13June2019 jcsdi		

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)	
4,200.00	15.47	91.68	4,064.64	-29.96	1,019.41	1,019.85	0.00	0.00	0.00	
4,300.00	15.47	91.68	4,161.02	-30.74	1,046.07	1,046.52	0.00	0.00	0.00	
4,342.52	15.47	91.68	4,202.00	-31.07	1,057.40	1,057.86	0.00	0.00	0.00	
<b>Lwr Wasatch</b>										
4,400.00	15.47	91.68	4,257.40	-31.52	1,072.73	1,073.19	0.00	0.00	0.00	
4,500.00	15.47	91.68	4,353.78	-32.31	1,099.39	1,099.86	0.00	0.00	0.00	
4,600.00	15.47	91.68	4,450.15	-33.09	1,126.05	1,126.53	0.00	0.00	0.00	
4,700.00	15.47	91.68	4,546.53	-33.87	1,152.71	1,153.21	0.00	0.00	0.00	
4,800.00	15.47	91.68	4,642.91	-34.66	1,179.37	1,179.88	0.00	0.00	0.00	
4,900.00	15.47	91.68	4,739.29	-35.44	1,206.03	1,206.55	0.00	0.00	0.00	
5,000.00	15.47	91.68	4,835.66	-36.22	1,232.69	1,233.22	0.00	0.00	0.00	
5,100.00	15.47	91.68	4,932.04	-37.01	1,259.35	1,259.89	0.00	0.00	0.00	
5,125.90	15.47	91.68	4,957.00	-37.21	1,266.25	1,266.80	0.00	0.00	0.00	
<b>Ohio Creek/MVRD</b>										
5,200.00	15.47	91.68	5,028.42	-37.79	1,286.01	1,286.56	0.00	0.00	0.00	
5,300.00	15.47	91.68	5,124.80	-38.57	1,312.67	1,313.23	0.00	0.00	0.00	
5,400.00	15.47	91.68	5,221.17	-39.36	1,339.33	1,339.91	0.00	0.00	0.00	
5,500.00	15.47	91.68	5,317.55	-40.14	1,365.99	1,366.58	0.00	0.00	0.00	
5,600.00	15.47	91.68	5,413.93	-40.92	1,392.65	1,393.25	0.00	0.00	0.00	
5,625.21	15.47	91.68	5,438.23	-41.12	1,399.37	1,399.97	0.00	0.00	0.00	
<b>Start Drop -1.50</b>										
5,700.00	14.35	91.68	5,510.50	-41.69	1,418.60	1,419.21	1.50	-1.50	0.00	
5,800.00	12.85	91.68	5,607.69	-42.38	1,442.10	1,442.72	1.50	-1.50	0.00	
5,900.00	11.35	91.68	5,705.47	-42.99	1,463.05	1,463.68	1.50	-1.50	0.00	
6,000.00	9.85	91.68	5,803.76	-43.53	1,481.43	1,482.07	1.50	-1.50	0.00	
6,100.00	8.35	91.68	5,902.50	-44.00	1,497.23	1,497.88	1.50	-1.50	0.00	
6,200.00	6.85	91.68	6,001.62	-44.39	1,510.44	1,511.10	1.50	-1.50	0.00	
6,300.00	5.35	91.68	6,101.05	-44.70	1,521.06	1,521.72	1.50	-1.50	0.00	
6,400.00	3.85	91.68	6,200.73	-44.93	1,529.07	1,529.73	1.50	-1.50	0.00	
6,500.00	2.35	91.68	6,300.58	-45.09	1,534.47	1,535.13	1.50	-1.50	0.00	
6,600.00	0.85	91.68	6,400.54	-45.17	1,537.26	1,537.92	1.50	-1.50	0.00	
6,656.47	0.00	0.00	6,457.00	-45.19	1,537.68	1,538.34	1.50	-1.50	0.00	
<b>Start 2381.00 hold at 6656.47 MD - Top Gas - RWF 422-12 BTV</b>										
6,700.00	0.00	0.00	6,500.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,600.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,700.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,800.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,900.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,000.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,100.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,200.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,300.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,400.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,500.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,600.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,700.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,800.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
8,060.47	0.00	0.00	7,861.00	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
<b>Cameo</b>										
8,100.00	0.00	0.00	7,900.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,000.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well RWF 422-12
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<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5466.8' & RKB 24' @ 5490.80usft (H&P 318)
<b>Site:</b>	RWF 12-12 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 422-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 13June2019 jcsdi		

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)	
8,300.00	0.00	0.00	8,100.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,200.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,300.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,400.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,500.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,600.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
8,887.47	0.00	0.00	8,688.00	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
Rollins										
8,900.00	0.00	0.00	8,700.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,800.53	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
9,037.47	0.00	0.00	8,838.00	-45.19	1,537.68	1,538.34	0.00	0.00	0.00	
TD at 9037.47 - RWF 422-12 BHL										

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 422-12 BTV - plan hits target center - Circle (radius 50.00)	0.00	0.00	6,457.00	-45.19	1,537.68	1,630,725.80	2,341,241.30	39.5418717	-107.8361442
RWF 422-12 BHL - plan hits target center - Point	0.00	0.00	8,838.00	-45.19	1,537.68	1,630,725.80	2,341,241.30	39.5418717	-107.8361442

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	980.56	9 5/8" Casing @ 1000' MD	9.62	12.25

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,469.68	2,397.00	G Sand		0.00	0.00
2,573.44	2,497.00	G Sand Base		0.00	0.00
4,342.52	4,202.00	Lwr Wasatch		0.00	0.00
5,125.90	4,957.00	Ohio Creek/MVRD		0.00	0.00
6,656.47	6,457.00	Top Gas		0.00	0.00
8,060.47	7,861.00	Cameo		0.00	0.00
8,887.47	8,688.00	Rollins		0.00	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well RWF 422-12
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5466.8' & RKB 24' @ 5490.80usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5466.8' & RKB 24' @ 5490.80usft (H&P 318)
<b>Site:</b>	RWF 12-12 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 422-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 13June2019 jcsdi		

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 3.00
635.63	629.39	-2.03	69.15	Start 4989.59 hold at 635.63 MD
5,625.21	5,438.23	-41.12	1,399.37	Start Drop -1.50
6,656.47	6,457.00	-45.19	1,537.68	Start 2381.00 hold at 6656.47 MD
9,037.47	8,838.00	-45.19	1,537.68	TD at 9037.47