

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 23-26 Pad

PA 12-26 - Slot A12

OH

Plan: Plan #1

Standard Planning Report

10 July, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 12-26 - Slot A12
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 5658.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 12-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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		PA 23-26 Pad			
Site Position:		Northing:	1,614,400.30 ft	Latitude:	39° 29' 39.674 N
From:	Map	Easting:	2,303,981.10 ft	Longitude:	107° 57' 59.978 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.56 °

Well	PA 12-26 - Slot A12, A12					
Well Position	+N/-S	-3.4 ft	Northing:	1,614,399.16 ft	Latitude:	39° 29' 39.640 N
	+E/-W	-83.1 ft	Easting:	2,303,897.93 ft	Longitude:	107° 58' 1.038 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	5,637.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/19/2017	9.70	65.59	51,543.18521916

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	314.07

Plan Survey Tool Program	Date	7/10/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	8,900.8 Plan #1 (OH)	SDI MWD	
			SDI MWD - Standard ver 1.0.1	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.1	27.00	314.07	1,167.1	144.8	-149.6	3.00	3.00	0.00	314.07	
4,927.0	27.00	314.07	4,487.8	1,321.8	-1,365.2	0.00	0.00	0.00	0.00	
6,727.1	0.00	0.00	6,222.0	1,611.4	-1,664.4	1.50	-1.50	0.00	180.00	
8,901.1	0.00	0.00	8,396.0	1,611.4	-1,664.4	0.00	0.00	0.00	0.00	PBHL(PA 12-26)

N/A
Planning Report

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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 12-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
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	3.00	314.07	400.0	1.8	-1.9	2.6	3.00	3.00	0.00
500.0	6.00	314.07	499.6	7.3	-7.5	10.5	3.00	3.00	0.00
600.0	9.00	314.07	598.8	16.4	-16.9	23.5	3.00	3.00	0.00
700.0	12.00	314.07	697.1	29.0	-30.0	41.7	3.00	3.00	0.00
800.0	15.00	314.07	794.3	45.3	-46.8	65.1	3.00	3.00	0.00
900.0	18.00	314.07	890.2	65.0	-67.2	93.5	3.00	3.00	0.00
1,000.0	21.00	314.07	984.4	88.2	-91.1	126.9	3.00	3.00	0.00
1,100.0	24.00	314.07	1,076.8	114.9	-118.6	165.1	3.00	3.00	0.00
9 5/8"									
1,200.0	27.00	314.07	1,167.1	144.8	-149.6	208.2	3.00	3.00	0.00
1,200.1	27.00	314.07	1,167.1	144.8	-149.6	208.2	3.00	3.00	0.00
1,300.0	27.00	314.07	1,256.2	176.4	-182.2	253.6	0.00	0.00	0.00
1,400.0	27.00	314.07	1,345.3	208.0	-214.8	299.0	0.00	0.00	0.00
1,500.0	27.00	314.07	1,434.4	239.5	-247.4	344.4	0.00	0.00	0.00
1,600.0	27.00	314.07	1,523.5	271.1	-280.0	389.8	0.00	0.00	0.00
1,700.0	27.00	314.07	1,612.6	302.7	-312.6	435.2	0.00	0.00	0.00
1,800.0	27.00	314.07	1,701.7	334.3	-345.3	480.6	0.00	0.00	0.00
1,900.0	27.00	314.07	1,790.8	365.9	-377.9	526.0	0.00	0.00	0.00
2,000.0	27.00	314.07	1,879.9	397.4	-410.5	571.4	0.00	0.00	0.00
2,100.0	27.00	314.07	1,969.0	429.0	-443.1	616.8	0.00	0.00	0.00
2,200.0	27.00	314.07	2,058.1	460.6	-475.7	662.2	0.00	0.00	0.00
2,300.0	27.00	314.07	2,147.2	492.2	-508.4	707.6	0.00	0.00	0.00
2,400.0	27.00	314.07	2,236.3	523.8	-541.0	753.0	0.00	0.00	0.00
2,500.0	27.00	314.07	2,325.4	555.3	-573.6	798.4	0.00	0.00	0.00
2,600.0	27.00	314.07	2,414.5	586.9	-606.2	843.8	0.00	0.00	0.00
2,700.0	27.00	314.07	2,503.6	618.5	-638.8	889.2	0.00	0.00	0.00
2,761.1	27.00	314.07	2,558.0	637.8	-658.8	916.9	0.00	0.00	0.00
Wasatch G									
2,800.0	27.00	314.07	2,592.7	650.1	-671.5	934.6	0.00	0.00	0.00
2,828.5	27.00	314.07	2,618.0	659.1	-680.7	947.5	0.00	0.00	0.00
Wasatch G Base									
2,900.0	27.00	314.07	2,681.7	681.7	-704.1	980.0	0.00	0.00	0.00
3,000.0	27.00	314.07	2,770.8	713.3	-736.7	1,025.4	0.00	0.00	0.00
3,100.0	27.00	314.07	2,859.9	744.8	-769.3	1,070.8	0.00	0.00	0.00
3,200.0	27.00	314.07	2,949.0	776.4	-801.9	1,116.2	0.00	0.00	0.00
3,300.0	27.00	314.07	3,038.1	808.0	-834.5	1,161.6	0.00	0.00	0.00
3,400.0	27.00	314.07	3,127.2	839.6	-867.2	1,207.0	0.00	0.00	0.00
3,500.0	27.00	314.07	3,216.3	871.2	-899.8	1,252.4	0.00	0.00	0.00
3,600.0	27.00	314.07	3,305.4	902.7	-932.4	1,297.8	0.00	0.00	0.00
3,700.0	27.00	314.07	3,394.5	934.3	-965.0	1,343.2	0.00	0.00	0.00
3,800.0	27.00	314.07	3,483.6	965.9	-997.6	1,388.6	0.00	0.00	0.00
3,900.0	27.00	314.07	3,572.7	997.5	-1,030.3	1,434.0	0.00	0.00	0.00
4,000.0	27.00	314.07	3,661.8	1,029.1	-1,062.9	1,479.4	0.00	0.00	0.00
4,100.0	27.00	314.07	3,750.9	1,060.6	-1,095.5	1,524.8	0.00	0.00	0.00
4,200.0	27.00	314.07	3,840.0	1,092.2	-1,128.1	1,570.2	0.00	0.00	0.00
4,300.0	27.00	314.07	3,929.1	1,123.8	-1,160.7	1,615.6	0.00	0.00	0.00
4,400.0	27.00	314.07	4,018.2	1,155.4	-1,193.4	1,661.0	0.00	0.00	0.00
4,500.0	27.00	314.07	4,107.3	1,187.0	-1,226.0	1,706.4	0.00	0.00	0.00
4,600.0	27.00	314.07	4,196.4	1,218.5	-1,258.6	1,751.8	0.00	0.00	0.00

N/A
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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
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Well:	PA 12-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.0	27.00	314.07	4,285.5	1,250.1	-1,291.2	1,797.2	0.00	0.00	0.00
4,800.0	27.00	314.07	4,374.6	1,281.7	-1,323.8	1,842.6	0.00	0.00	0.00
4,900.0	27.00	314.07	4,463.7	1,313.3	-1,356.5	1,888.0	0.00	0.00	0.00
4,927.0	27.00	314.07	4,487.8	1,321.8	-1,365.2	1,900.3	0.00	0.00	0.00
5,000.0	25.91	314.07	4,553.1	1,344.4	-1,388.6	1,932.8	1.50	-1.50	0.00
5,100.0	24.41	314.07	4,643.7	1,374.0	-1,419.2	1,975.3	1.50	-1.50	0.00
5,200.0	22.91	314.07	4,735.3	1,401.9	-1,448.0	2,015.4	1.50	-1.50	0.00
5,219.3	22.62	314.07	4,753.0	1,407.1	-1,453.3	2,022.9	1.50	-1.50	0.00
Ohio Creek									
5,300.0	21.41	314.07	4,827.9	1,428.1	-1,475.1	2,053.2	1.50	-1.50	0.00
5,400.0	19.91	314.07	4,921.4	1,452.7	-1,500.4	2,088.4	1.50	-1.50	0.00
5,412.3	19.72	314.07	4,933.0	1,455.6	-1,503.4	2,092.6	1.50	-1.50	0.00
Upper MVRD									
5,500.0	18.41	314.07	5,015.9	1,475.5	-1,524.0	2,121.3	1.50	-1.50	0.00
5,600.0	16.91	314.07	5,111.2	1,496.6	-1,545.8	2,151.6	1.50	-1.50	0.00
5,700.0	15.41	314.07	5,207.2	1,516.0	-1,565.8	2,179.4	1.50	-1.50	0.00
5,800.0	13.91	314.07	5,304.0	1,533.6	-1,584.0	2,204.7	1.50	-1.50	0.00
5,900.0	12.41	314.07	5,401.3	1,549.4	-1,600.3	2,227.5	1.50	-1.50	0.00
6,000.0	10.91	314.07	5,499.3	1,563.4	-1,614.8	2,247.7	1.50	-1.50	0.00
6,100.0	9.41	314.07	5,597.7	1,575.7	-1,627.5	2,265.3	1.50	-1.50	0.00
6,200.0	7.91	314.07	5,696.6	1,586.2	-1,638.3	2,280.4	1.50	-1.50	0.00
6,300.0	6.41	314.07	5,795.8	1,594.8	-1,647.3	2,292.8	1.50	-1.50	0.00
6,400.0	4.91	314.07	5,895.3	1,601.7	-1,654.3	2,302.7	1.50	-1.50	0.00
6,457.9	4.04	314.07	5,953.0	1,604.8	-1,657.6	2,307.2	1.50	-1.50	0.00
Top of Gas									
6,500.0	3.41	314.07	5,995.0	1,606.7	-1,659.5	2,309.9	1.50	-1.50	0.00
6,600.0	1.91	314.07	6,094.9	1,610.0	-1,662.9	2,314.6	1.50	-1.50	0.00
6,700.0	0.41	314.07	6,194.9	1,611.4	-1,664.3	2,316.6	1.50	-1.50	0.00
6,727.1	0.00	0.00	6,222.0	1,611.4	-1,664.4	2,316.7	1.50	-1.50	0.00
6,800.0	0.00	0.00	6,294.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
6,900.0	0.00	0.00	6,394.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,000.0	0.00	0.00	6,494.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,100.0	0.00	0.00	6,594.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,200.0	0.00	0.00	6,694.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,300.0	0.00	0.00	6,794.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,400.0	0.00	0.00	6,894.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,500.0	0.00	0.00	6,994.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,600.0	0.00	0.00	7,094.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,700.0	0.00	0.00	7,194.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,800.0	0.00	0.00	7,294.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
7,900.0	0.00	0.00	7,394.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,000.0	0.00	0.00	7,494.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,038.1	0.00	0.00	7,533.0	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
Cameo									
8,100.0	0.00	0.00	7,594.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,200.0	0.00	0.00	7,694.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,300.0	0.00	0.00	7,794.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,400.0	0.00	0.00	7,894.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,500.0	0.00	0.00	7,994.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,600.0	0.00	0.00	8,094.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,700.0	0.00	0.00	8,194.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,748.1	0.00	0.00	8,243.0	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
RLNS									
8,800.0	0.00	0.00	8,294.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00

N/A
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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 5658.0ft (Original Well Elev)
Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 12-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,900.0	0.00	0.00	8,394.9	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
8,901.1	0.00	0.00	8,396.0	1,611.4	-1,664.4	2,316.7	0.00	0.00	0.00
PBHL(PA 12-26)									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL(PA 12-26) - plan hits target center - Point	0.00	0.00	8,396.0	1,611.4	-1,664.4	1,616,055.20	2,302,277.90	39° 29' 55.567 N	107° 58' 22.271 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.0	1,076.8	9 5/8"	9.625	14.750	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,761.1	2,558.0	Wasatch G		0.00	
2,828.5	2,618.0	Wasatch G Base		0.00	
5,219.3	4,753.0	Ohio Creek		0.00	
5,412.3	4,933.0	Upper MVRD		0.00	
6,457.9	5,953.0	Top of Gas		0.00	
8,038.1	7,533.0	Cameo		0.00	
8,748.1	8,243.0	RLNS		0.00	