

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 23-26 Pad

PA 411-26 - Slot A7

OH

Plan: Plan #1

Standard Planning Report

10 July, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 411-26 - Slot A7
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 411-26	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 411-26 - Slot A7, A7					
Well Position	+N/-S	-1.8 ft	Northing:	1,614,399.70 ft	Latitude:	39° 29' 39.656 N
	+E/-W	-45.0 ft	Easting:	2,303,936.10 ft	Longitude:	107° 58' 0.551 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	51,543.20473208

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	324.72

Plan Survey Tool Program	Date	7/10/2017			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	9,232.9 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	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,766.6	35.00	324.72	1,695.4	281.9	-199.5	3.00	3.00	0.00	324.72	
4,912.2	35.00	324.72	4,272.1	1,754.7	-1,241.6	0.00	0.00	0.00	0.00	
7,245.5	0.00	0.00	6,463.0	2,318.6	-1,640.6	1.50	-1.50	0.00	180.00	
9,233.5	0.00	0.00	8,451.0	2,318.6	-1,640.6	0.00	0.00	0.00	0.00	PBHL(PA 411-26)

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 411-26	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	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	3.00	324.72	700.0	2.1	-1.5	2.6	3.00	3.00	0.00
800.0	6.00	324.72	799.6	8.5	-6.0	10.5	3.00	3.00	0.00
900.0	9.00	324.72	898.8	19.2	-13.6	23.5	3.00	3.00	0.00
1,000.0	12.00	324.72	997.1	34.1	-24.1	41.7	3.00	3.00	0.00
1,100.0	15.00	324.72	1,094.3	53.1	-37.6	65.1	3.00	3.00	0.00
9 5/8"									
1,200.0	18.00	324.72	1,190.2	76.3	-54.0	93.5	3.00	3.00	0.00
1,300.0	21.00	324.72	1,284.4	103.6	-73.3	126.9	3.00	3.00	0.00
1,400.0	24.00	324.72	1,376.8	134.8	-95.4	165.1	3.00	3.00	0.00
1,500.0	27.00	324.72	1,467.1	169.9	-120.2	208.2	3.00	3.00	0.00
1,600.0	30.00	324.72	1,554.9	208.9	-147.8	255.9	3.00	3.00	0.00
1,700.0	33.00	324.72	1,640.2	251.5	-178.0	308.1	3.00	3.00	0.00
1,766.6	35.00	324.72	1,695.4	281.9	-199.5	345.4	3.00	3.00	0.00
1,800.0	35.00	324.72	1,722.8	297.6	-210.5	364.5	0.00	0.00	0.00
1,900.0	35.00	324.72	1,804.7	344.4	-243.7	421.9	0.00	0.00	0.00
2,000.0	35.00	324.72	1,886.6	391.2	-276.8	479.2	0.00	0.00	0.00
2,100.0	35.00	324.72	1,968.5	438.0	-309.9	536.6	0.00	0.00	0.00
2,200.0	35.00	324.72	2,050.4	484.8	-343.1	593.9	0.00	0.00	0.00
2,300.0	35.00	324.72	2,132.3	531.7	-376.2	651.3	0.00	0.00	0.00
2,400.0	35.00	324.72	2,214.3	578.5	-409.3	708.7	0.00	0.00	0.00
2,500.0	35.00	324.72	2,296.2	625.3	-442.4	766.0	0.00	0.00	0.00
2,600.0	35.00	324.72	2,378.1	672.1	-475.6	823.4	0.00	0.00	0.00
2,700.0	35.00	324.72	2,460.0	719.0	-508.7	880.7	0.00	0.00	0.00
2,734.2	35.00	324.72	2,488.0	735.0	-520.0	900.3	0.00	0.00	0.00
Wasatch G									
2,800.0	35.00	324.72	2,541.9	765.8	-541.8	938.1	0.00	0.00	0.00
2,807.4	35.00	324.72	2,548.0	769.2	-544.3	942.3	0.00	0.00	0.00
Wasatch G base									
2,900.0	35.00	324.72	2,623.8	812.6	-575.0	995.4	0.00	0.00	0.00
3,000.0	35.00	324.72	2,705.8	859.4	-608.1	1,052.8	0.00	0.00	0.00
3,100.0	35.00	324.72	2,787.7	906.2	-641.2	1,110.1	0.00	0.00	0.00
3,200.0	35.00	324.72	2,869.6	953.1	-674.3	1,167.5	0.00	0.00	0.00
3,300.0	35.00	324.72	2,951.5	999.9	-707.5	1,224.9	0.00	0.00	0.00
3,400.0	35.00	324.72	3,033.4	1,046.7	-740.6	1,282.2	0.00	0.00	0.00
3,500.0	35.00	324.72	3,115.3	1,093.5	-773.7	1,339.6	0.00	0.00	0.00
3,600.0	35.00	324.72	3,197.3	1,140.3	-806.9	1,396.9	0.00	0.00	0.00
3,700.0	35.00	324.72	3,279.2	1,187.2	-840.0	1,454.3	0.00	0.00	0.00
3,800.0	35.00	324.72	3,361.1	1,234.0	-873.1	1,511.6	0.00	0.00	0.00
3,900.0	35.00	324.72	3,443.0	1,280.8	-906.2	1,569.0	0.00	0.00	0.00
4,000.0	35.00	324.72	3,524.9	1,327.6	-939.4	1,626.4	0.00	0.00	0.00
4,100.0	35.00	324.72	3,606.8	1,374.5	-972.5	1,683.7	0.00	0.00	0.00
4,200.0	35.00	324.72	3,688.7	1,421.3	-1,005.6	1,741.1	0.00	0.00	0.00
4,300.0	35.00	324.72	3,770.7	1,468.1	-1,038.8	1,798.4	0.00	0.00	0.00
4,400.0	35.00	324.72	3,852.6	1,514.9	-1,071.9	1,855.8	0.00	0.00	0.00
4,500.0	35.00	324.72	3,934.5	1,561.7	-1,105.0	1,913.1	0.00	0.00	0.00
4,600.0	35.00	324.72	4,016.4	1,608.6	-1,138.2	1,970.5	0.00	0.00	0.00

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 411-26	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	35.00	324.72	4,098.3	1,655.4	-1,171.3	2,027.9	0.00	0.00	0.00	
4,800.0	35.00	324.72	4,180.2	1,702.2	-1,204.4	2,085.2	0.00	0.00	0.00	
4,900.0	35.00	324.72	4,262.2	1,749.0	-1,237.5	2,142.6	0.00	0.00	0.00	
4,912.2	35.00	324.72	4,272.1	1,754.7	-1,241.6	2,149.6	0.00	0.00	0.00	
5,000.0	33.68	324.72	4,344.7	1,795.2	-1,270.2	2,199.1	1.50	-1.50	0.00	
5,100.0	32.18	324.72	4,428.6	1,839.5	-1,301.6	2,253.5	1.50	-1.50	0.00	
5,200.0	30.68	324.72	4,513.9	1,882.1	-1,331.7	2,305.6	1.50	-1.50	0.00	
5,300.0	29.18	324.72	4,600.6	1,922.8	-1,360.5	2,355.5	1.50	-1.50	0.00	
5,400.0	27.68	324.72	4,688.5	1,961.7	-1,388.0	2,403.1	1.50	-1.50	0.00	
5,500.0	26.18	324.72	4,777.7	1,998.7	-1,414.2	2,448.4	1.50	-1.50	0.00	
5,533.8	25.68	324.72	4,808.0	2,010.7	-1,422.7	2,463.2	1.50	-1.50	0.00	
Ohio Creek										
5,600.0	24.68	324.72	4,868.0	2,033.7	-1,439.0	2,491.3	1.50	-1.50	0.00	
5,700.0	23.18	324.72	4,959.4	2,066.8	-1,462.4	2,531.9	1.50	-1.50	0.00	
5,731.1	22.72	324.72	4,988.0	2,076.7	-1,469.4	2,544.0	1.50	-1.50	0.00	
Upper MVRD										
5,800.0	21.68	324.72	5,051.8	2,098.0	-1,484.5	2,570.1	1.50	-1.50	0.00	
5,900.0	20.18	324.72	5,145.2	2,127.2	-1,505.1	2,605.8	1.50	-1.50	0.00	
6,000.0	18.68	324.72	5,239.5	2,154.3	-1,524.3	2,639.1	1.50	-1.50	0.00	
6,100.0	17.18	324.72	5,334.6	2,179.4	-1,542.1	2,669.8	1.50	-1.50	0.00	
6,200.0	15.68	324.72	5,430.5	2,202.5	-1,558.4	2,698.1	1.50	-1.50	0.00	
6,300.0	14.18	324.72	5,527.2	2,223.6	-1,573.3	2,723.9	1.50	-1.50	0.00	
6,400.0	12.68	324.72	5,624.4	2,242.5	-1,586.7	2,747.1	1.50	-1.50	0.00	
6,500.0	11.18	324.72	5,722.3	2,259.4	-1,598.7	2,767.8	1.50	-1.50	0.00	
6,600.0	9.68	324.72	5,820.6	2,274.2	-1,609.1	2,785.9	1.50	-1.50	0.00	
6,700.0	8.18	324.72	5,919.4	2,286.9	-1,618.1	2,801.4	1.50	-1.50	0.00	
6,789.4	6.84	324.72	6,008.0	2,296.4	-1,624.8	2,813.1	1.50	-1.50	0.00	
Top of Gas										
6,800.0	6.68	324.72	6,018.6	2,297.4	-1,625.6	2,814.4	1.50	-1.50	0.00	
6,900.0	5.18	324.72	6,118.0	2,305.9	-1,631.5	2,824.7	1.50	-1.50	0.00	
7,000.0	3.68	324.72	6,217.7	2,312.2	-1,636.0	2,832.4	1.50	-1.50	0.00	
7,100.0	2.18	324.72	6,317.6	2,316.3	-1,639.0	2,837.5	1.50	-1.50	0.00	
7,200.0	0.68	324.72	6,417.5	2,318.4	-1,640.4	2,840.0	1.50	-1.50	0.00	
7,245.5	0.00	0.00	6,463.0	2,318.6	-1,640.6	2,840.3	1.50	-1.50	0.00	
7,300.0	0.00	0.00	6,517.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
7,400.0	0.00	0.00	6,617.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
7,500.0	0.00	0.00	6,717.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
7,600.0	0.00	0.00	6,817.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
7,700.0	0.00	0.00	6,917.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,017.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,117.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,217.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,100.0	0.00	0.00	7,317.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,200.0	0.00	0.00	7,417.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,300.0	0.00	0.00	7,517.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,370.5	0.00	0.00	7,588.0	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
Cameo										
8,400.0	0.00	0.00	7,617.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,500.0	0.00	0.00	7,717.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,600.0	0.00	0.00	7,817.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,700.0	0.00	0.00	7,917.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,017.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,117.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,217.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00	

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 411-26 - Slot A7
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 411-26	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)
9,080.5	0.00	0.00	8,298.0	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00
RLNS									
9,100.0	0.00	0.00	8,317.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00
9,200.0	0.00	0.00	8,417.5	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00
9,233.5	0.00	0.00	8,451.0	2,318.6	-1,640.6	2,840.3	0.00	0.00	0.00
PBHL(PA 411-26)									

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 411-26) - plan hits target center - Point	0.00	0.00	8,451.0	2,318.6	-1,640.6	1,616,762.00	2,302,359.10	39° 30' 2.572 N	107° 58' 21.481 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,100.0	1,094.3	9 5/8"		9.625	14.750

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,734.2	2,488.0	Wasatch G		0.00	
2,807.4	2,548.0	Wasatch G base		0.00	
5,533.8	4,808.0	Ohio Creek		0.00	
5,731.1	4,988.0	Upper MVRD		0.00	
6,789.4	6,008.0	Top of Gas		0.00	
8,370.5	7,588.0	Cameo		0.00	
9,080.5	8,298.0	RLNS		0.00	