

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 23-26 Pad

PA 521-26 - Slot A6

OH

Plan: Plan #1

Standard Planning Report

10 July, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 521-26 - Slot A6
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 521-26	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 521-26 - Slot A6, A6					
Well Position	+N/-S	-1.5 ft	Northing:	1,614,399.81 ft	Latitude:	39° 29' 39.659 N
	+E/-W	-37.5 ft	Easting:	2,303,943.60 ft	Longitude:	107° 58' 0.456 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	51,543.20856587

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	353.80

Plan Survey Tool Program	Date	7/10/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	8,891.8 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	
1,133.4	25.00	353.80	1,107.2	177.9	-19.3	3.00	3.00	0.00	353.80	
5,269.4	25.00	353.80	4,855.7	1,915.7	-208.1	0.00	0.00	0.00	0.00	
6,936.1	0.00	0.00	6,470.0	2,271.5	-246.8	1.50	-1.50	0.00	180.00	
8,892.1	0.00	0.00	8,426.0	2,271.5	-246.8	0.00	0.00	0.00	0.00	PBHL(PA 521-26)

N/A
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Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 521-26	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	353.80	400.0	2.6	-0.3	2.6	3.00	3.00	0.00
500.0	6.00	353.80	499.6	10.4	-1.1	10.5	3.00	3.00	0.00
600.0	9.00	353.80	598.8	23.4	-2.5	23.5	3.00	3.00	0.00
700.0	12.00	353.80	697.1	41.5	-4.5	41.7	3.00	3.00	0.00
800.0	15.00	353.80	794.3	64.7	-7.0	65.1	3.00	3.00	0.00
900.0	18.00	353.80	890.2	92.9	-10.1	93.5	3.00	3.00	0.00
1,000.0	21.00	353.80	984.4	126.1	-13.7	126.9	3.00	3.00	0.00
1,100.0	24.00	353.80	1,076.8	164.1	-17.8	165.1	3.00	3.00	0.00
9 5/8"									
1,133.4	25.00	353.80	1,107.2	177.9	-19.3	179.0	3.00	3.00	0.00
1,200.0	25.00	353.80	1,167.6	205.9	-22.4	207.1	0.00	0.00	0.00
1,300.0	25.00	353.80	1,258.2	247.9	-26.9	249.4	0.00	0.00	0.00
1,400.0	25.00	353.80	1,348.8	289.9	-31.5	291.6	0.00	0.00	0.00
1,500.0	25.00	353.80	1,439.5	332.0	-36.1	333.9	0.00	0.00	0.00
1,600.0	25.00	353.80	1,530.1	374.0	-40.6	376.2	0.00	0.00	0.00
1,700.0	25.00	353.80	1,620.7	416.0	-45.2	418.4	0.00	0.00	0.00
1,800.0	25.00	353.80	1,711.3	458.0	-49.8	460.7	0.00	0.00	0.00
1,900.0	25.00	353.80	1,802.0	500.0	-54.3	503.0	0.00	0.00	0.00
2,000.0	25.00	353.80	1,892.6	542.0	-58.9	545.2	0.00	0.00	0.00
2,100.0	25.00	353.80	1,983.2	584.1	-63.4	587.5	0.00	0.00	0.00
2,200.0	25.00	353.80	2,073.9	626.1	-68.0	629.8	0.00	0.00	0.00
2,300.0	25.00	353.80	2,164.5	668.1	-72.6	672.0	0.00	0.00	0.00
2,400.0	25.00	353.80	2,255.1	710.1	-77.1	714.3	0.00	0.00	0.00
2,500.0	25.00	353.80	2,345.8	752.1	-81.7	756.5	0.00	0.00	0.00
2,600.0	25.00	353.80	2,436.4	794.1	-86.3	798.8	0.00	0.00	0.00
2,700.0	25.00	353.80	2,527.0	836.1	-90.8	841.1	0.00	0.00	0.00
2,800.0	25.00	353.80	2,617.6	878.2	-95.4	883.3	0.00	0.00	0.00
2,900.0	25.00	353.80	2,708.3	920.2	-100.0	925.6	0.00	0.00	0.00
2,954.9	25.00	353.80	2,758.0	943.2	-102.5	948.8	0.00	0.00	0.00
Wasatch G									
3,000.0	25.00	353.80	2,798.9	962.2	-104.5	967.9	0.00	0.00	0.00
3,021.1	25.00	353.80	2,818.0	971.1	-105.5	976.8	0.00	0.00	0.00
Wasatch G Base									
3,100.0	25.00	353.80	2,889.5	1,004.2	-109.1	1,010.1	0.00	0.00	0.00
3,200.0	25.00	353.80	2,980.2	1,046.2	-113.7	1,052.4	0.00	0.00	0.00
3,300.0	25.00	353.80	3,070.8	1,088.2	-118.2	1,094.7	0.00	0.00	0.00
3,400.0	25.00	353.80	3,161.4	1,130.3	-122.8	1,136.9	0.00	0.00	0.00
3,500.0	25.00	353.80	3,252.1	1,172.3	-127.3	1,179.2	0.00	0.00	0.00
3,600.0	25.00	353.80	3,342.7	1,214.3	-131.9	1,221.4	0.00	0.00	0.00
3,700.0	25.00	353.80	3,433.3	1,256.3	-136.5	1,263.7	0.00	0.00	0.00
3,800.0	25.00	353.80	3,523.9	1,298.3	-141.0	1,306.0	0.00	0.00	0.00
3,900.0	25.00	353.80	3,614.6	1,340.3	-145.6	1,348.2	0.00	0.00	0.00
4,000.0	25.00	353.80	3,705.2	1,382.4	-150.2	1,390.5	0.00	0.00	0.00
4,100.0	25.00	353.80	3,795.8	1,424.4	-154.7	1,432.8	0.00	0.00	0.00
4,200.0	25.00	353.80	3,886.5	1,466.4	-159.3	1,475.0	0.00	0.00	0.00
4,300.0	25.00	353.80	3,977.1	1,508.4	-163.9	1,517.3	0.00	0.00	0.00
4,400.0	25.00	353.80	4,067.7	1,550.4	-168.4	1,559.5	0.00	0.00	0.00
4,500.0	25.00	353.80	4,158.4	1,592.4	-173.0	1,601.8	0.00	0.00	0.00
4,600.0	25.00	353.80	4,249.0	1,634.5	-177.6	1,644.1	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 521-26	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	25.00	353.80	4,339.6	1,676.5	-182.1	1,686.3	0.00	0.00	0.00
4,800.0	25.00	353.80	4,430.3	1,718.5	-186.7	1,728.6	0.00	0.00	0.00
4,900.0	25.00	353.80	4,520.9	1,760.5	-191.2	1,770.9	0.00	0.00	0.00
5,000.0	25.00	353.80	4,611.5	1,802.5	-195.8	1,813.1	0.00	0.00	0.00
5,100.0	25.00	353.80	4,702.1	1,844.5	-200.4	1,855.4	0.00	0.00	0.00
5,189.2	25.00	353.80	4,783.0	1,882.0	-204.4	1,893.1	0.00	0.00	0.00
Ohio Creek									
5,200.0	25.00	353.80	4,792.8	1,886.6	-204.9	1,897.7	0.00	0.00	0.00
5,269.4	25.00	353.80	4,855.7	1,915.7	-208.1	1,927.0	0.00	0.00	0.00
5,300.0	24.54	353.80	4,883.5	1,928.5	-209.5	1,939.8	1.50	-1.50	0.00
5,387.0	23.24	353.80	4,963.0	1,963.5	-213.3	1,975.0	1.50	-1.50	0.00
Upper MVRD									
5,400.0	23.04	353.80	4,975.0	1,968.6	-213.8	1,980.2	1.50	-1.50	0.00
5,500.0	21.54	353.80	5,067.5	2,006.3	-217.9	2,018.1	1.50	-1.50	0.00
5,600.0	20.04	353.80	5,161.0	2,041.6	-221.8	2,053.6	1.50	-1.50	0.00
5,700.0	18.54	353.80	5,255.3	2,074.4	-225.3	2,086.6	1.50	-1.50	0.00
5,800.0	17.04	353.80	5,350.6	2,104.8	-228.6	2,117.2	1.50	-1.50	0.00
5,900.0	15.54	353.80	5,446.5	2,132.7	-231.7	2,145.2	1.50	-1.50	0.00
6,000.0	14.04	353.80	5,543.2	2,158.1	-234.4	2,170.8	1.50	-1.50	0.00
6,100.0	12.54	353.80	5,640.5	2,180.9	-236.9	2,193.7	1.50	-1.50	0.00
6,200.0	11.04	353.80	5,738.4	2,201.2	-239.1	2,214.2	1.50	-1.50	0.00
6,300.0	9.54	353.80	5,836.8	2,219.0	-241.1	2,232.0	1.50	-1.50	0.00
6,400.0	8.04	353.80	5,935.6	2,234.2	-242.7	2,247.3	1.50	-1.50	0.00
6,447.8	7.32	353.80	5,983.0	2,240.5	-243.4	2,253.7	1.50	-1.50	0.00
Top of Gas									
6,500.0	6.54	353.80	6,034.8	2,246.8	-244.1	2,260.0	1.50	-1.50	0.00
6,600.0	5.04	353.80	6,134.3	2,256.8	-245.2	2,270.1	1.50	-1.50	0.00
6,700.0	3.54	353.80	6,234.0	2,264.3	-246.0	2,277.6	1.50	-1.50	0.00
6,800.0	2.04	353.80	6,333.9	2,269.1	-246.5	2,282.5	1.50	-1.50	0.00
6,900.0	0.54	353.80	6,433.9	2,271.4	-246.7	2,284.7	1.50	-1.50	0.00
6,936.1	0.00	0.00	6,470.0	2,271.5	-246.8	2,284.9	1.50	-1.50	0.00
7,000.0	0.00	0.00	6,533.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
7,100.0	0.00	0.00	6,633.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
7,200.0	0.00	0.00	6,733.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
7,300.0	0.00	0.00	6,833.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
7,400.0	0.00	0.00	6,933.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
7,500.0	0.00	0.00	7,033.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
7,600.0	0.00	0.00	7,133.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
7,700.0	0.00	0.00	7,233.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,333.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
7,900.0	0.00	0.00	7,433.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
8,000.0	0.00	0.00	7,533.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
8,029.1	0.00	0.00	7,563.0	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
Cameo									
8,100.0	0.00	0.00	7,633.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
8,200.0	0.00	0.00	7,733.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
8,300.0	0.00	0.00	7,833.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
8,400.0	0.00	0.00	7,933.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
8,500.0	0.00	0.00	8,033.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
8,600.0	0.00	0.00	8,133.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
8,700.0	0.00	0.00	8,233.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
8,739.1	0.00	0.00	8,273.0	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
RLNS									
8,800.0	0.00	0.00	8,333.9	2,271.5	-246.8	2,284.9	0.00	0.00	0.00

N/A
Planning Report

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Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 521-26	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)
8,892.1	0.00	0.00	8,426.0	2,271.5	-246.8	2,284.9	0.00	0.00	0.00
PBHL(PA 521-26)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(PA 521-26)	0.00	0.00	8,426.0	2,271.5	-246.8	1,616,677.20	2,303,758.60	39° 30' 2.110 N	107° 58' 3.604 W
- plan hits target center									
- Point									

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	13.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,954.9	2,758.0	Wasatch G		0.00		
3,021.1	2,818.0	Wasatch G Base		0.00		
5,189.2	4,783.0	Ohio Creek		0.00		
5,387.0	4,963.0	Upper MVRD		0.00		
6,447.8	5,983.0	Top of Gas		0.00		
8,029.1	7,563.0	Cameo		0.00		
8,739.1	8,273.0	RLNS		0.00		