

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 23-26 Pad

PA 422-26 - Slot A11

OH

Plan: Plan #1

Standard Planning Report

10 July, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 422-26 - Slot A11
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 422-26	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 422-26 - Slot A11, A11					
Well Position	+N/-S	-3.0 ft	Northing:	1,614,399.36 ft	Latitude:	39° 29' 39.645 N
	+E/-W	-74.9 ft	Easting:	2,303,906.10 ft	Longitude:	107° 58' 0.934 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)
	IGRF2000	12/31/2004	11.44	65.99	53,054.05521598

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	354.00

Plan Survey Tool Program	Date	7/10/2017			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	8,586.0 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	
833.2	16.00	354.00	826.3	73.6	-7.7	3.00	3.00	0.00	354.00	
5,594.6	16.00	354.00	5,403.3	1,378.5	-145.0	0.00	0.00	0.00	0.00	
6,661.1	0.00	0.00	6,456.0	1,525.6	-160.5	1.50	-1.50	0.00	180.00	
8,586.1	0.00	0.00	8,381.0	1,525.6	-160.5	0.00	0.00	0.00	0.00	PBHL(PA 422-26)

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 422-26	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	354.00	400.0	2.6	-0.3	2.6	3.00	3.00	0.00
500.0	6.00	354.00	499.6	10.4	-1.1	10.5	3.00	3.00	0.00
600.0	9.00	354.00	598.8	23.4	-2.5	23.5	3.00	3.00	0.00
700.0	12.00	354.00	697.1	41.5	-4.4	41.7	3.00	3.00	0.00
800.0	15.00	354.00	794.3	64.7	-6.8	65.1	3.00	3.00	0.00
833.2	16.00	354.00	826.3	73.6	-7.7	74.0	3.00	3.00	0.00
900.0	16.00	354.00	890.5	91.9	-9.7	92.4	0.00	0.00	0.00
1,000.0	16.00	354.00	986.6	119.3	-12.5	119.9	0.00	0.00	0.00
1,100.0	16.00	354.00	1,082.8	146.7	-15.4	147.5	0.00	0.00	0.00
9 5/8"									
1,200.0	16.00	354.00	1,178.9	174.1	-18.3	175.0	0.00	0.00	0.00
1,300.0	16.00	354.00	1,275.0	201.5	-21.2	202.6	0.00	0.00	0.00
1,400.0	16.00	354.00	1,371.2	228.9	-24.1	230.2	0.00	0.00	0.00
1,500.0	16.00	354.00	1,467.3	256.3	-27.0	257.7	0.00	0.00	0.00
1,600.0	16.00	354.00	1,563.4	283.7	-29.8	285.3	0.00	0.00	0.00
1,700.0	16.00	354.00	1,659.5	311.1	-32.7	312.8	0.00	0.00	0.00
1,800.0	16.00	354.00	1,755.7	338.5	-35.6	340.4	0.00	0.00	0.00
1,900.0	16.00	354.00	1,851.8	365.9	-38.5	367.9	0.00	0.00	0.00
2,000.0	16.00	354.00	1,947.9	393.3	-41.4	395.5	0.00	0.00	0.00
2,100.0	16.00	354.00	2,044.0	420.7	-44.3	423.1	0.00	0.00	0.00
2,200.0	16.00	354.00	2,140.2	448.2	-47.1	450.6	0.00	0.00	0.00
2,300.0	16.00	354.00	2,236.3	475.6	-50.0	478.2	0.00	0.00	0.00
2,400.0	16.00	354.00	2,332.4	503.0	-52.9	505.7	0.00	0.00	0.00
2,500.0	16.00	354.00	2,428.6	530.4	-55.8	533.3	0.00	0.00	0.00
2,600.0	16.00	354.00	2,524.7	557.8	-58.7	560.9	0.00	0.00	0.00
2,700.0	16.00	354.00	2,620.8	585.2	-61.6	588.4	0.00	0.00	0.00
2,738.7	16.00	354.00	2,658.0	595.8	-62.7	599.1	0.00	0.00	0.00
Wasatch G									
2,800.0	16.00	354.00	2,716.9	612.6	-64.4	616.0	0.00	0.00	0.00
2,801.1	16.00	354.00	2,718.0	612.9	-64.5	616.3	0.00	0.00	0.00
Wasatch G Base									
2,900.0	16.00	354.00	2,813.1	640.0	-67.3	643.5	0.00	0.00	0.00
3,000.0	16.00	354.00	2,909.2	667.4	-70.2	671.1	0.00	0.00	0.00
3,100.0	16.00	354.00	3,005.3	694.8	-73.1	698.7	0.00	0.00	0.00
3,200.0	16.00	354.00	3,101.5	722.2	-76.0	726.2	0.00	0.00	0.00
3,300.0	16.00	354.00	3,197.6	749.6	-78.9	753.8	0.00	0.00	0.00
3,400.0	16.00	354.00	3,293.7	777.0	-81.7	781.3	0.00	0.00	0.00
3,500.0	16.00	354.00	3,389.8	804.5	-84.6	808.9	0.00	0.00	0.00
3,600.0	16.00	354.00	3,486.0	831.9	-87.5	836.5	0.00	0.00	0.00
3,700.0	16.00	354.00	3,582.1	859.3	-90.4	864.0	0.00	0.00	0.00
3,800.0	16.00	354.00	3,678.2	886.7	-93.3	891.6	0.00	0.00	0.00
3,900.0	16.00	354.00	3,774.3	914.1	-96.2	919.1	0.00	0.00	0.00
4,000.0	16.00	354.00	3,870.5	941.5	-99.0	946.7	0.00	0.00	0.00
4,100.0	16.00	354.00	3,966.6	968.9	-101.9	974.2	0.00	0.00	0.00
4,200.0	16.00	354.00	4,062.7	996.3	-104.8	1,001.8	0.00	0.00	0.00
4,300.0	16.00	354.00	4,158.9	1,023.7	-107.7	1,029.4	0.00	0.00	0.00
4,400.0	16.00	354.00	4,255.0	1,051.1	-110.6	1,056.9	0.00	0.00	0.00
4,500.0	16.00	354.00	4,351.1	1,078.5	-113.5	1,084.5	0.00	0.00	0.00
4,600.0	16.00	354.00	4,447.2	1,105.9	-116.3	1,112.0	0.00	0.00	0.00

N/A
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Site:	PA 23-26 Pad	North Reference:	True
Well:	PA 422-26	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	16.00	354.00	4,543.4	1,133.3	-119.2	1,139.6	0.00	0.00	0.00
4,800.0	16.00	354.00	4,639.5	1,160.8	-122.1	1,167.2	0.00	0.00	0.00
4,900.0	16.00	354.00	4,735.6	1,188.2	-125.0	1,194.7	0.00	0.00	0.00
4,902.5	16.00	354.00	4,738.0	1,188.8	-125.1	1,195.4	0.00	0.00	0.00
Ohio Creek									
5,000.0	16.00	354.00	4,831.8	1,215.6	-127.9	1,222.3	0.00	0.00	0.00
5,089.7	16.00	354.00	4,918.0	1,240.2	-130.5	1,247.0	0.00	0.00	0.00
Upper MVRD									
5,100.0	16.00	354.00	4,927.9	1,243.0	-130.7	1,249.8	0.00	0.00	0.00
5,200.0	16.00	354.00	5,024.0	1,270.4	-133.6	1,277.4	0.00	0.00	0.00
5,300.0	16.00	354.00	5,120.1	1,297.8	-136.5	1,305.0	0.00	0.00	0.00
5,400.0	16.00	354.00	5,216.3	1,325.2	-139.4	1,332.5	0.00	0.00	0.00
5,500.0	16.00	354.00	5,312.4	1,352.6	-142.3	1,360.1	0.00	0.00	0.00
5,594.6	16.00	354.00	5,403.3	1,378.5	-145.0	1,386.1	0.00	0.00	0.00
5,600.0	15.92	354.00	5,408.5	1,380.0	-145.2	1,387.6	1.50	-1.50	0.00
5,700.0	14.42	354.00	5,505.0	1,406.0	-147.9	1,413.8	1.50	-1.50	0.00
5,800.0	12.92	354.00	5,602.2	1,429.5	-150.4	1,437.4	1.50	-1.50	0.00
5,900.0	11.42	354.00	5,700.0	1,450.5	-152.6	1,458.5	1.50	-1.50	0.00
6,000.0	9.92	354.00	5,798.2	1,468.9	-154.5	1,477.0	1.50	-1.50	0.00
6,100.0	8.42	354.00	5,896.9	1,484.7	-156.2	1,492.9	1.50	-1.50	0.00
6,141.5	7.79	354.00	5,938.0	1,490.6	-156.8	1,498.8	1.50	-1.50	0.00
Top of Gas									
6,200.0	6.92	354.00	5,996.0	1,498.0	-157.6	1,506.3	1.50	-1.50	0.00
6,300.0	5.42	354.00	6,095.5	1,508.7	-158.7	1,517.0	1.50	-1.50	0.00
6,400.0	3.92	354.00	6,195.1	1,516.8	-159.5	1,525.1	1.50	-1.50	0.00
6,500.0	2.42	354.00	6,295.0	1,522.3	-160.1	1,530.7	1.50	-1.50	0.00
6,600.0	0.92	354.00	6,394.9	1,525.2	-160.4	1,533.6	1.50	-1.50	0.00
6,661.1	0.00	0.00	6,456.0	1,525.6	-160.5	1,534.1	1.50	-1.50	0.00
6,700.0	0.00	0.00	6,494.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,594.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
6,900.0	0.00	0.00	6,694.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,000.0	0.00	0.00	6,794.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,100.0	0.00	0.00	6,894.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,200.0	0.00	0.00	6,994.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,300.0	0.00	0.00	7,094.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,400.0	0.00	0.00	7,194.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,500.0	0.00	0.00	7,294.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,600.0	0.00	0.00	7,394.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,700.0	0.00	0.00	7,494.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,723.1	0.00	0.00	7,518.0	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
Cameo									
7,800.0	0.00	0.00	7,594.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
7,900.0	0.00	0.00	7,694.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
8,000.0	0.00	0.00	7,794.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
8,100.0	0.00	0.00	7,894.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
8,200.0	0.00	0.00	7,994.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
8,300.0	0.00	0.00	8,094.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
8,400.0	0.00	0.00	8,194.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
8,433.1	0.00	0.00	8,228.0	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
RLNS									
8,500.0	0.00	0.00	8,294.9	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
8,586.1	0.00	0.00	8,381.0	1,525.6	-160.5	1,534.1	0.00	0.00	0.00
PBHL(PA 422-26)									

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well PA 422-26 - Slot A11
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 422-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
PBHL(PA 422-26)	0.00	0.00	8,381.0	1,525.6	-160.5	1,615,928.80	2,303,787.10	39° 29' 54.723 N	107° 58' 2.981 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
1,100.0	1,082.8	9 5/8"		9.625	14.750

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
2,738.7	2,658.0	Wasatch G			0.00	
2,801.1	2,718.0	Wasatch G Base			0.00	
4,902.5	4,738.0	Ohio Creek			0.00	
5,089.7	4,918.0	Upper MVRD			0.00	
6,141.5	5,938.0	Top of Gas			0.00	
7,723.1	7,518.0	Cameo			0.00	
8,433.1	8,228.0	RLNS			0.00	