

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 44-13

PA 34-13 - Slot B7

OH

Plan: Plan #1

Standard Planning Report

17 July, 2018

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 34-13 - Slot B7
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 6594.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 6594.0ft (Original Well Elev)
Site:	PA 44-13	North Reference:	True
Well:	PA 34-13	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 44-13			
Site Position:		Northing:	1,623,782.10 ft	Latitude:	39° 31' 14.301 N
From:	Map	Easting:	2,311,231.60 ft	Longitude:	107° 56' 30.736 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.54 °

Well	PA 34-13 - Slot B7					
Well Position	+N/-S	0.0 ft	Northing:	1,623,782.10 ft	Latitude:	39° 31' 14.301 N
	+E/-W	0.0 ft	Easting:	2,311,231.60 ft	Longitude:	107° 56' 30.736 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	6,570.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	11.43	66.02	53,064.33583239

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	289.45

Plan Survey Tool Program	Date	7/17/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,543.2 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	
180.0	0.00	0.00	180.0	0.0	0.0	0.00	0.00	0.00	0.00	
495.1	9.45	289.45	493.7	8.6	-24.5	3.00	3.00	0.00	289.45	
6,452.9	9.45	289.45	6,370.6	334.5	-947.2	0.00	0.00	0.00	0.00	
7,083.2	0.00	0.00	6,998.0	351.8	-996.1	1.50	-1.50	0.00	180.00	
9,543.2	0.00	0.00	9,458.0	351.8	-996.1	0.00	0.00	0.00	0.00	PA 34-13 TD

N/A
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Site:	PA 44-13	North Reference:	True
Well:	PA 34-13	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
180.0	0.00	0.00	180.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.60	289.45	200.0	0.0	-0.1	0.1	3.00	3.00	0.00
300.0	3.60	289.45	299.9	1.3	-3.6	3.8	3.00	3.00	0.00
400.0	6.60	289.45	399.5	4.2	-11.9	12.7	3.00	3.00	0.00
495.1	9.45	289.45	493.7	8.6	-24.5	25.9	3.00	3.00	0.00
500.0	9.45	289.45	498.5	8.9	-25.2	26.7	0.00	0.00	0.00
600.0	9.45	289.45	597.1	14.4	-40.7	43.2	0.00	0.00	0.00
700.0	9.45	289.45	695.8	19.8	-56.2	59.6	0.00	0.00	0.00
800.0	9.45	289.45	794.4	25.3	-71.7	76.0	0.00	0.00	0.00
900.0	9.45	289.45	893.1	30.8	-87.2	92.4	0.00	0.00	0.00
1,000.0	9.45	289.45	991.7	36.2	-102.7	108.9	0.00	0.00	0.00
1,100.0	9.45	289.45	1,090.4	41.7	-118.1	125.3	0.00	0.00	0.00
9 5/8"									
1,200.0	9.45	289.45	1,189.0	47.2	-133.6	141.7	0.00	0.00	0.00
1,300.0	9.45	289.45	1,287.6	52.7	-149.1	158.1	0.00	0.00	0.00
1,400.0	9.45	289.45	1,386.3	58.1	-164.6	174.6	0.00	0.00	0.00
1,500.0	9.45	289.45	1,484.9	63.6	-180.1	191.0	0.00	0.00	0.00
1,600.0	9.45	289.45	1,583.6	69.1	-195.6	207.4	0.00	0.00	0.00
1,700.0	9.45	289.45	1,682.2	74.5	-211.1	223.8	0.00	0.00	0.00
1,800.0	9.45	289.45	1,780.9	80.0	-226.6	240.3	0.00	0.00	0.00
1,900.0	9.45	289.45	1,879.5	85.5	-242.0	256.7	0.00	0.00	0.00
2,000.0	9.45	289.45	1,978.1	90.9	-257.5	273.1	0.00	0.00	0.00
2,100.0	9.45	289.45	2,076.8	96.4	-273.0	289.5	0.00	0.00	0.00
2,200.0	9.45	289.45	2,175.4	101.9	-288.5	306.0	0.00	0.00	0.00
2,300.0	9.45	289.45	2,274.1	107.3	-304.0	322.4	0.00	0.00	0.00
2,400.0	9.45	289.45	2,372.7	112.8	-319.5	338.8	0.00	0.00	0.00
2,500.0	9.45	289.45	2,471.3	118.3	-335.0	355.2	0.00	0.00	0.00
2,600.0	9.45	289.45	2,570.0	123.8	-350.5	371.7	0.00	0.00	0.00
2,700.0	9.45	289.45	2,668.6	129.2	-365.9	388.1	0.00	0.00	0.00
2,800.0	9.45	289.45	2,767.3	134.7	-381.4	404.5	0.00	0.00	0.00
2,900.0	9.45	289.45	2,865.9	140.2	-396.9	420.9	0.00	0.00	0.00
3,000.0	9.45	289.45	2,964.6	145.6	-412.4	437.4	0.00	0.00	0.00
3,100.0	9.45	289.45	3,063.2	151.1	-427.9	453.8	0.00	0.00	0.00
3,200.0	9.45	289.45	3,161.8	156.6	-443.4	470.2	0.00	0.00	0.00
3,300.0	9.45	289.45	3,260.5	162.0	-458.9	486.6	0.00	0.00	0.00
3,400.0	9.45	289.45	3,359.1	167.5	-474.4	503.1	0.00	0.00	0.00
3,402.9	9.45	289.45	3,362.0	167.7	-474.8	503.5	0.00	0.00	0.00
G SAND									
3,497.2	9.45	289.45	3,455.0	172.8	-489.4	519.0	0.00	0.00	0.00
G SAND BASE									
3,500.0	9.45	289.45	3,457.8	173.0	-489.8	519.5	0.00	0.00	0.00
3,600.0	9.45	289.45	3,556.4	178.4	-505.3	535.9	0.00	0.00	0.00
3,700.0	9.45	289.45	3,655.1	183.9	-520.8	552.3	0.00	0.00	0.00
3,800.0	9.45	289.45	3,753.7	189.4	-536.3	568.8	0.00	0.00	0.00
3,900.0	9.45	289.45	3,852.3	194.9	-551.8	585.2	0.00	0.00	0.00
4,000.0	9.45	289.45	3,951.0	200.3	-567.3	601.6	0.00	0.00	0.00
4,100.0	9.45	289.45	4,049.6	205.8	-582.8	618.0	0.00	0.00	0.00
4,200.0	9.45	289.45	4,148.3	211.3	-598.3	634.5	0.00	0.00	0.00
4,300.0	9.45	289.45	4,246.9	216.7	-613.8	650.9	0.00	0.00	0.00
4,400.0	9.45	289.45	4,345.5	222.2	-629.2	667.3	0.00	0.00	0.00
4,500.0	9.45	289.45	4,444.2	227.7	-644.7	683.7	0.00	0.00	0.00

N/A
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Well:	PA 34-13	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)
4,600.0	9.45	289.45	4,542.8	233.1	-660.2	700.2	0.00	0.00	0.00
4,700.0	9.45	289.45	4,641.5	238.6	-675.7	716.6	0.00	0.00	0.00
4,800.0	9.45	289.45	4,740.1	244.1	-691.2	733.0	0.00	0.00	0.00
4,900.0	9.45	289.45	4,838.8	249.5	-706.7	749.4	0.00	0.00	0.00
5,000.0	9.45	289.45	4,937.4	255.0	-722.2	765.9	0.00	0.00	0.00
5,100.0	9.45	289.45	5,036.0	260.5	-737.7	782.3	0.00	0.00	0.00
5,200.0	9.45	289.45	5,134.7	266.0	-753.1	798.7	0.00	0.00	0.00
5,300.0	9.45	289.45	5,233.3	271.4	-768.6	815.1	0.00	0.00	0.00
5,400.0	9.45	289.45	5,332.0	276.9	-784.1	831.6	0.00	0.00	0.00
5,500.0	9.45	289.45	5,430.6	282.4	-799.6	848.0	0.00	0.00	0.00
5,600.0	9.45	289.45	5,529.3	287.8	-815.1	864.4	0.00	0.00	0.00
5,700.0	9.45	289.45	5,627.9	293.3	-830.6	880.8	0.00	0.00	0.00
5,800.0	9.45	289.45	5,726.5	298.8	-846.1	897.3	0.00	0.00	0.00
5,851.2	9.45	289.45	5,777.0	301.6	-854.0	905.7	0.00	0.00	0.00
MVRD									
5,900.0	9.45	289.45	5,825.2	304.2	-861.6	913.7	0.00	0.00	0.00
5,907.9	9.45	289.45	5,833.0	304.7	-862.8	915.0	0.00	0.00	0.00
WFRK/UMVRD									
6,000.0	9.45	289.45	5,923.8	309.7	-877.0	930.1	0.00	0.00	0.00
6,100.0	9.45	289.45	6,022.5	315.2	-892.5	946.5	0.00	0.00	0.00
6,200.0	9.45	289.45	6,121.1	320.6	-908.0	963.0	0.00	0.00	0.00
6,300.0	9.45	289.45	6,219.7	326.1	-923.5	979.4	0.00	0.00	0.00
6,400.0	9.45	289.45	6,318.4	331.6	-939.0	995.8	0.00	0.00	0.00
6,452.9	9.45	289.45	6,370.6	334.5	-947.2	1,004.5	0.00	0.00	0.00
6,500.0	8.75	289.45	6,417.1	337.0	-954.2	1,012.0	1.50	-1.50	0.00
6,600.0	7.25	289.45	6,516.1	341.6	-967.3	1,025.9	1.50	-1.50	0.00
6,700.0	5.75	289.45	6,615.5	345.4	-978.0	1,037.2	1.50	-1.50	0.00
6,800.0	4.25	289.45	6,715.1	348.3	-986.2	1,045.9	1.50	-1.50	0.00
6,900.0	2.75	289.45	6,814.9	350.3	-992.0	1,052.0	1.50	-1.50	0.00
7,000.0	1.25	289.45	6,914.8	351.5	-995.3	1,055.5	1.50	-1.50	0.00
7,033.2	0.75	289.45	6,948.0	351.6	-995.8	1,056.1	1.50	-1.50	0.00
TOP GAS									
7,083.2	0.00	0.00	6,998.0	351.8	-996.1	1,056.4	1.50	-1.50	0.00
7,100.0	0.00	0.00	7,014.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
7,200.0	0.00	0.00	7,114.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
7,300.0	0.00	0.00	7,214.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
7,400.0	0.00	0.00	7,314.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
7,500.0	0.00	0.00	7,414.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
7,600.0	0.00	0.00	7,514.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
7,700.0	0.00	0.00	7,614.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
7,800.0	0.00	0.00	7,714.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
7,900.0	0.00	0.00	7,814.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,000.0	0.00	0.00	7,914.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,100.0	0.00	0.00	8,014.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,200.0	0.00	0.00	8,114.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,300.0	0.00	0.00	8,214.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,400.0	0.00	0.00	8,314.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,497.2	0.00	0.00	8,412.0	351.8	-996.1	1,056.4	0.00	0.00	0.00
CMEQ									
8,500.0	0.00	0.00	8,414.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,600.0	0.00	0.00	8,514.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,700.0	0.00	0.00	8,614.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,800.0	0.00	0.00	8,714.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
8,900.0	0.00	0.00	8,814.8	351.8	-996.1	1,056.4	0.00	0.00	0.00

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 34-13 - Slot B7
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 6594.0ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 6594.0ft (Original Well Elev)
Site:	PA 44-13	North Reference:	True
Well:	PA 34-13	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)
9,000.0	0.00	0.00	8,914.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
9,100.0	0.00	0.00	9,014.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
9,200.0	0.00	0.00	9,114.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
9,300.0	0.00	0.00	9,214.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
9,393.2	0.00	0.00	9,308.0	351.8	-996.1	1,056.4	0.00	0.00	0.00
RLNS									
9,400.0	0.00	0.00	9,314.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
9,500.0	0.00	0.00	9,414.8	351.8	-996.1	1,056.4	0.00	0.00	0.00
9,543.2	0.00	0.00	9,458.0	351.8	-996.1	1,056.4	0.00	0.00	0.00
PA 34-13 TD									

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
PA 34-13 TD - plan hits target center - Point	0.00	0.00	9,458.0	351.8	-996.1	1,624,160.50	2,310,245.30	39° 31' 17.778 N	107° 56' 43.448 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.0	1,090.4	9 5/8"	9.625	13.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,402.9	3,362.0	G SAND		0.00	
3,497.2	3,455.0	G SAND BASE		0.00	
5,851.2	5,777.0	MVRD		0.00	
5,907.9	5,833.0	WFRK/UMVRD		0.00	
7,033.2	6,948.0	TOP GAS		0.00	
8,497.2	8,412.0	CMEO		0.00	
9,393.2	9,308.0	RLNS		0.00	