

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 44-13

PA 33-13 - Slot B9

OH

Plan: Plan #1

Standard Planning Report

17 July, 2018

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 33-13 - Slot B9
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 33-13	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 33-13 - Slot B9			
Well Position	+N/-S	14.4 ft	Northing:	1,623,796.60 ft
	+E/-W	-4.2 ft	Easting:	2,311,227.80 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	Latitude: 39° 31' 14.444 N
				Longitude: 107° 56' 30.790 W
				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	53,064.35531815

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	327.12

Plan Survey Tool Program	Date	7/17/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,733.3 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	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.00	0.00	
714.9	16.95	327.12	706.7	69.6	-45.0	3.00	3.00	0.00	327.12	
6,143.6	16.95	327.12	5,899.6	1,398.4	-904.1	0.00	0.00	0.00	0.00	
7,273.3	0.00	0.00	7,013.0	1,537.7	-994.2	1.50	-1.50	0.00	180.00	
9,733.3	0.00	0.00	9,473.0	1,537.7	-994.2	0.00	0.00	0.00	0.00	PA 33-13 TD

N/A
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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 6594.0ft (Original Well Elev)
Site:	PA 44-13	North Reference:	True
Well:	PA 33-13	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
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	1.50	327.12	200.0	0.5	-0.4	0.7	3.00	3.00	0.00
300.0	4.50	327.12	299.8	4.9	-3.2	5.9	3.00	3.00	0.00
400.0	7.50	327.12	399.3	13.7	-8.9	16.3	3.00	3.00	0.00
500.0	10.50	327.12	498.0	26.9	-17.4	32.0	3.00	3.00	0.00
600.0	13.50	327.12	595.8	44.3	-28.7	52.8	3.00	3.00	0.00
700.0	16.50	327.12	692.4	66.0	-42.7	78.6	3.00	3.00	0.00
714.9	16.95	327.12	706.7	69.6	-45.0	82.9	3.00	3.00	0.00
800.0	16.95	327.12	788.1	90.5	-58.5	107.7	0.00	0.00	0.00
900.0	16.95	327.12	883.8	115.0	-74.3	136.9	0.00	0.00	0.00
1,000.0	16.95	327.12	979.4	139.4	-90.1	166.0	0.00	0.00	0.00
1,100.0	16.95	327.12	1,075.1	163.9	-106.0	195.2	0.00	0.00	0.00
9 5/8"									
1,200.0	16.95	327.12	1,170.7	188.4	-121.8	224.3	0.00	0.00	0.00
1,300.0	16.95	327.12	1,266.4	212.9	-137.6	253.5	0.00	0.00	0.00
1,400.0	16.95	327.12	1,362.1	237.3	-153.4	282.6	0.00	0.00	0.00
1,500.0	16.95	327.12	1,457.7	261.8	-169.3	311.8	0.00	0.00	0.00
1,600.0	16.95	327.12	1,553.4	286.3	-185.1	340.9	0.00	0.00	0.00
1,700.0	16.95	327.12	1,649.0	310.8	-200.9	370.1	0.00	0.00	0.00
1,800.0	16.95	327.12	1,744.7	335.3	-216.8	399.2	0.00	0.00	0.00
1,900.0	16.95	327.12	1,840.3	359.7	-232.6	428.4	0.00	0.00	0.00
2,000.0	16.95	327.12	1,936.0	384.2	-248.4	457.5	0.00	0.00	0.00
2,100.0	16.95	327.12	2,031.7	408.7	-264.2	486.7	0.00	0.00	0.00
2,200.0	16.95	327.12	2,127.3	433.2	-280.1	515.8	0.00	0.00	0.00
2,300.0	16.95	327.12	2,223.0	457.6	-295.9	545.0	0.00	0.00	0.00
2,400.0	16.95	327.12	2,318.6	482.1	-311.7	574.1	0.00	0.00	0.00
2,500.0	16.95	327.12	2,414.3	506.6	-327.5	603.3	0.00	0.00	0.00
2,600.0	16.95	327.12	2,509.9	531.1	-343.4	632.4	0.00	0.00	0.00
2,700.0	16.95	327.12	2,605.6	555.6	-359.2	661.5	0.00	0.00	0.00
2,800.0	16.95	327.12	2,701.3	580.0	-375.0	690.7	0.00	0.00	0.00
2,900.0	16.95	327.12	2,796.9	604.5	-390.8	719.8	0.00	0.00	0.00
3,000.0	16.95	327.12	2,892.6	629.0	-406.7	749.0	0.00	0.00	0.00
3,100.0	16.95	327.12	2,988.2	653.5	-422.5	778.1	0.00	0.00	0.00
3,200.0	16.95	327.12	3,083.9	677.9	-438.3	807.3	0.00	0.00	0.00
3,300.0	16.95	327.12	3,179.6	702.4	-454.1	836.4	0.00	0.00	0.00
3,400.0	16.95	327.12	3,275.2	726.9	-470.0	865.6	0.00	0.00	0.00
3,500.0	16.95	327.12	3,370.9	751.4	-485.8	894.7	0.00	0.00	0.00
3,506.4	16.95	327.12	3,377.0	752.9	-486.8	896.6	0.00	0.00	0.00
G SAND									
3,600.0	16.95	327.12	3,466.5	775.9	-501.6	923.9	0.00	0.00	0.00
3,603.6	16.95	327.12	3,470.0	776.7	-502.2	924.9	0.00	0.00	0.00
G SAND BASE									
3,700.0	16.95	327.12	3,562.2	800.3	-517.4	953.0	0.00	0.00	0.00
3,800.0	16.95	327.12	3,657.8	824.8	-533.3	982.2	0.00	0.00	0.00
3,900.0	16.95	327.12	3,753.5	849.3	-549.1	1,011.3	0.00	0.00	0.00
4,000.0	16.95	327.12	3,849.2	873.8	-564.9	1,040.5	0.00	0.00	0.00
4,100.0	16.95	327.12	3,944.8	898.2	-580.7	1,069.6	0.00	0.00	0.00
4,200.0	16.95	327.12	4,040.5	922.7	-596.6	1,098.8	0.00	0.00	0.00
4,300.0	16.95	327.12	4,136.1	947.2	-612.4	1,127.9	0.00	0.00	0.00
4,400.0	16.95	327.12	4,231.8	971.7	-628.2	1,157.1	0.00	0.00	0.00
4,500.0	16.95	327.12	4,327.4	996.1	-644.0	1,186.2	0.00	0.00	0.00

N/A
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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 6594.0ft (Original Well Elev)
Site:	PA 44-13	North Reference:	True
Well:	PA 33-13	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	16.95	327.12	4,423.1	1,020.6	-659.9	1,215.4	0.00	0.00	0.00
4,700.0	16.95	327.12	4,518.8	1,045.1	-675.7	1,244.5	0.00	0.00	0.00
4,800.0	16.95	327.12	4,614.4	1,069.6	-691.5	1,273.7	0.00	0.00	0.00
4,900.0	16.95	327.12	4,710.1	1,094.1	-707.3	1,302.8	0.00	0.00	0.00
5,000.0	16.95	327.12	4,805.7	1,118.5	-723.2	1,331.9	0.00	0.00	0.00
5,100.0	16.95	327.12	4,901.4	1,143.0	-739.0	1,361.1	0.00	0.00	0.00
5,200.0	16.95	327.12	4,997.1	1,167.5	-754.8	1,390.2	0.00	0.00	0.00
5,300.0	16.95	327.12	5,092.7	1,192.0	-770.6	1,419.4	0.00	0.00	0.00
5,400.0	16.95	327.12	5,188.4	1,216.4	-786.5	1,448.5	0.00	0.00	0.00
5,500.0	16.95	327.12	5,284.0	1,240.9	-802.3	1,477.7	0.00	0.00	0.00
5,600.0	16.95	327.12	5,379.7	1,265.4	-818.1	1,506.8	0.00	0.00	0.00
5,700.0	16.95	327.12	5,475.3	1,289.9	-833.9	1,536.0	0.00	0.00	0.00
5,800.0	16.95	327.12	5,571.0	1,314.4	-849.8	1,565.1	0.00	0.00	0.00
5,900.0	16.95	327.12	5,666.7	1,338.8	-865.6	1,594.3	0.00	0.00	0.00
6,000.0	16.95	327.12	5,762.3	1,363.3	-881.4	1,623.4	0.00	0.00	0.00
6,031.0	16.95	327.12	5,792.0	1,370.9	-886.3	1,632.5	0.00	0.00	0.00
MVRD									
6,089.6	16.95	327.12	5,848.0	1,385.2	-895.6	1,649.5	0.00	0.00	0.00
WFRK/UMVRD									
6,100.0	16.95	327.12	5,858.0	1,387.8	-897.2	1,652.6	0.00	0.00	0.00
6,143.6	16.95	327.12	5,899.6	1,398.4	-904.1	1,665.3	0.00	0.00	0.00
6,200.0	16.10	327.12	5,953.8	1,411.9	-912.9	1,681.3	1.50	-1.50	0.00
6,300.0	14.60	327.12	6,050.2	1,434.2	-927.2	1,707.8	1.50	-1.50	0.00
6,400.0	13.10	327.12	6,147.3	1,454.3	-940.2	1,731.7	1.50	-1.50	0.00
6,500.0	11.60	327.12	6,245.0	1,472.2	-951.8	1,753.1	1.50	-1.50	0.00
6,600.0	10.10	327.12	6,343.2	1,488.0	-962.1	1,771.9	1.50	-1.50	0.00
6,700.0	8.60	327.12	6,441.8	1,501.7	-970.9	1,788.2	1.50	-1.50	0.00
6,800.0	7.10	327.12	6,540.9	1,513.1	-978.3	1,801.8	1.50	-1.50	0.00
6,900.0	5.60	327.12	6,640.3	1,522.4	-984.3	1,812.9	1.50	-1.50	0.00
7,000.0	4.10	327.12	6,739.9	1,529.5	-988.9	1,821.4	1.50	-1.50	0.00
7,100.0	2.60	327.12	6,839.7	1,534.4	-992.1	1,827.2	1.50	-1.50	0.00
7,200.0	1.10	327.12	6,939.7	1,537.1	-993.8	1,830.4	1.50	-1.50	0.00
7,223.3	0.75	327.12	6,963.0	1,537.5	-994.0	1,830.8	1.50	-1.50	0.00
TOP GAS									
7,273.3	0.00	0.00	7,013.0	1,537.7	-994.2	1,831.1	1.50	-1.50	0.00
7,300.0	0.00	0.00	7,039.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
7,400.0	0.00	0.00	7,139.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
7,500.0	0.00	0.00	7,239.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
7,600.0	0.00	0.00	7,339.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
7,700.0	0.00	0.00	7,439.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
7,800.0	0.00	0.00	7,539.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
7,900.0	0.00	0.00	7,639.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,000.0	0.00	0.00	7,739.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,100.0	0.00	0.00	7,839.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,200.0	0.00	0.00	7,939.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,300.0	0.00	0.00	8,039.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,400.0	0.00	0.00	8,139.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,500.0	0.00	0.00	8,239.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,600.0	0.00	0.00	8,339.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,687.3	0.00	0.00	8,427.0	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
CMEO									
8,700.0	0.00	0.00	8,439.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,800.0	0.00	0.00	8,539.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
8,900.0	0.00	0.00	8,639.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 33-13 - Slot B9
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 33-13	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	8,739.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
9,100.0	0.00	0.00	8,839.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
9,200.0	0.00	0.00	8,939.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
9,300.0	0.00	0.00	9,039.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
9,400.0	0.00	0.00	9,139.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
9,500.0	0.00	0.00	9,239.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
9,583.3	0.00	0.00	9,323.0	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
RLNS									
9,600.0	0.00	0.00	9,339.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
9,700.0	0.00	0.00	9,439.7	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
9,733.3	0.00	0.00	9,473.0	1,537.7	-994.2	1,831.1	0.00	0.00	0.00
PA 33-13 TD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PA 33-13 TD	0.00	0.00	9,473.0	1,537.7	-994.2	1,625,360.50	2,310,275.30	39° 31' 29.642 N	107° 56' 43.478 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,100.0	1,075.1	9 5/8"	9.625	13.500

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,506.4	3,377.0	G SAND		0.00	
3,603.6	3,470.0	G SAND BASE		0.00	
6,031.0	5,792.0	MVRD		0.00	
6,089.6	5,848.0	WFRK/UMVRD		0.00	
7,223.3	6,963.0	TOP GAS		0.00	
8,687.3	8,427.0	CME0		0.00	
9,583.3	9,323.0	RLNS		0.00	