

TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 44-13

PA 531-13 - Slot A11

OH

Plan: Plan #1

Standard Planning Report

17 July, 2018

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 531-13 - Slot A11
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 531-13	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 531-13 - Slot A11					
Well Position	+N/-S	31.6 ft	Northing:	1,623,813.70 ft	Latitude:	39° 31' 14.614 N
	+E/-W	1.1 ft	Easting:	2,311,233.50 ft	Longitude:	107° 56' 30.723 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	53,064.38385827

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	341.51

Plan Survey Tool Program	Date	7/17/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	10,221.1	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	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,026.6	27.20	341.51	992.9	200.3	-67.0	3.00	3.00	0.00	341.51	
6,607.9	27.20	341.51	5,957.1	2,619.7	-875.8	0.00	0.00	0.00	0.00	
8,421.1	0.00	0.00	7,703.0	3,020.3	-1,009.7	1.50	-1.50	0.00	180.00	
10,221.1	0.00	0.00	9,503.0	3,020.3	-1,009.7	0.00	0.00	0.00	0.00	PA 531-13 TD

N/A
Planning Report

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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 531-13	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
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	2.40	341.51	200.0	1.6	-0.5	1.7	3.00	3.00	0.00
300.0	5.40	341.51	299.7	8.0	-2.7	8.5	3.00	3.00	0.00
400.0	8.40	341.51	399.0	19.4	-6.5	20.5	3.00	3.00	0.00
500.0	11.40	341.51	497.5	35.7	-11.9	37.7	3.00	3.00	0.00
600.0	14.40	341.51	595.0	56.9	-19.0	60.0	3.00	3.00	0.00
700.0	17.40	341.51	691.1	82.9	-27.7	87.4	3.00	3.00	0.00
800.0	20.40	341.51	785.7	113.6	-38.0	119.8	3.00	3.00	0.00
900.0	23.40	341.51	878.5	149.0	-49.8	157.1	3.00	3.00	0.00
1,000.0	26.40	341.51	969.2	188.9	-63.2	199.2	3.00	3.00	0.00
1,026.6	27.20	341.51	992.9	200.3	-67.0	211.2	3.00	3.00	0.00
1,100.0	27.20	341.51	1,058.2	232.1	-77.6	244.7	0.00	0.00	0.00
9 5/8"									
1,200.0	27.20	341.51	1,147.2	275.4	-92.1	290.4	0.00	0.00	0.00
1,300.0	27.20	341.51	1,236.1	318.8	-106.6	336.1	0.00	0.00	0.00
1,400.0	27.20	341.51	1,325.0	362.1	-121.1	381.8	0.00	0.00	0.00
1,500.0	27.20	341.51	1,414.0	405.5	-135.6	427.5	0.00	0.00	0.00
1,600.0	27.20	341.51	1,502.9	448.8	-150.1	473.3	0.00	0.00	0.00
1,700.0	27.20	341.51	1,591.9	492.2	-164.5	519.0	0.00	0.00	0.00
1,800.0	27.20	341.51	1,680.8	535.5	-179.0	564.7	0.00	0.00	0.00
1,900.0	27.20	341.51	1,769.8	578.9	-193.5	610.4	0.00	0.00	0.00
2,000.0	27.20	341.51	1,858.7	622.2	-208.0	656.1	0.00	0.00	0.00
2,100.0	27.20	341.51	1,947.7	665.6	-222.5	701.8	0.00	0.00	0.00
2,200.0	27.20	341.51	2,036.6	708.9	-237.0	747.5	0.00	0.00	0.00
2,300.0	27.20	341.51	2,125.5	752.3	-251.5	793.2	0.00	0.00	0.00
2,400.0	27.20	341.51	2,214.5	795.6	-266.0	838.9	0.00	0.00	0.00
2,500.0	27.20	341.51	2,303.4	839.0	-280.5	884.6	0.00	0.00	0.00
2,600.0	27.20	341.51	2,392.4	882.3	-295.0	930.3	0.00	0.00	0.00
2,700.0	27.20	341.51	2,481.3	925.7	-309.5	976.0	0.00	0.00	0.00
2,800.0	27.20	341.51	2,570.3	969.0	-324.0	1,021.7	0.00	0.00	0.00
2,900.0	27.20	341.51	2,659.2	1,012.4	-338.5	1,067.4	0.00	0.00	0.00
3,000.0	27.20	341.51	2,748.1	1,055.7	-353.0	1,113.2	0.00	0.00	0.00
3,100.0	27.20	341.51	2,837.1	1,099.1	-367.4	1,158.9	0.00	0.00	0.00
3,200.0	27.20	341.51	2,926.0	1,142.4	-381.9	1,204.6	0.00	0.00	0.00
3,300.0	27.20	341.51	3,015.0	1,185.8	-396.4	1,250.3	0.00	0.00	0.00
3,400.0	27.20	341.51	3,103.9	1,229.1	-410.9	1,296.0	0.00	0.00	0.00
3,500.0	27.20	341.51	3,192.9	1,272.5	-425.4	1,341.7	0.00	0.00	0.00
3,600.0	27.20	341.51	3,281.8	1,315.8	-439.9	1,387.4	0.00	0.00	0.00
3,700.0	27.20	341.51	3,370.7	1,359.2	-454.4	1,433.1	0.00	0.00	0.00
3,740.8	27.20	341.51	3,407.0	1,376.8	-460.3	1,451.7	0.00	0.00	0.00
G SAND									
3,800.0	27.20	341.51	3,459.7	1,402.5	-468.9	1,478.8	0.00	0.00	0.00
3,845.3	27.20	341.51	3,500.0	1,422.2	-475.5	1,499.5	0.00	0.00	0.00
G SAND BASE									
3,900.0	27.20	341.51	3,548.6	1,445.9	-483.4	1,524.5	0.00	0.00	0.00
4,000.0	27.20	341.51	3,637.6	1,489.2	-497.9	1,570.2	0.00	0.00	0.00
4,100.0	27.20	341.51	3,726.5	1,532.6	-512.4	1,615.9	0.00	0.00	0.00
4,200.0	27.20	341.51	3,815.5	1,575.9	-526.9	1,661.6	0.00	0.00	0.00
4,300.0	27.20	341.51	3,904.4	1,619.3	-541.4	1,707.4	0.00	0.00	0.00
4,400.0	27.20	341.51	3,993.3	1,662.6	-555.8	1,753.1	0.00	0.00	0.00
4,500.0	27.20	341.51	4,082.3	1,706.0	-570.3	1,798.8	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 531-13	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	27.20	341.51	4,171.2	1,749.3	-584.8	1,844.5	0.00	0.00	0.00
4,700.0	27.20	341.51	4,260.2	1,792.6	-599.3	1,890.2	0.00	0.00	0.00
4,800.0	27.20	341.51	4,349.1	1,836.0	-613.8	1,935.9	0.00	0.00	0.00
4,900.0	27.20	341.51	4,438.1	1,879.3	-628.3	1,981.6	0.00	0.00	0.00
5,000.0	27.20	341.51	4,527.0	1,922.7	-642.8	2,027.3	0.00	0.00	0.00
5,100.0	27.20	341.51	4,615.9	1,966.0	-657.3	2,073.0	0.00	0.00	0.00
5,200.0	27.20	341.51	4,704.9	2,009.4	-671.8	2,118.7	0.00	0.00	0.00
5,300.0	27.20	341.51	4,793.8	2,052.7	-686.3	2,164.4	0.00	0.00	0.00
5,400.0	27.20	341.51	4,882.8	2,096.1	-700.8	2,210.1	0.00	0.00	0.00
5,500.0	27.20	341.51	4,971.7	2,139.4	-715.3	2,255.8	0.00	0.00	0.00
5,600.0	27.20	341.51	5,060.7	2,182.8	-729.8	2,301.5	0.00	0.00	0.00
5,700.0	27.20	341.51	5,149.6	2,226.1	-744.2	2,347.3	0.00	0.00	0.00
5,800.0	27.20	341.51	5,238.5	2,269.5	-758.7	2,393.0	0.00	0.00	0.00
5,900.0	27.20	341.51	5,327.5	2,312.8	-773.2	2,438.7	0.00	0.00	0.00
6,000.0	27.20	341.51	5,416.4	2,356.2	-787.7	2,484.4	0.00	0.00	0.00
6,100.0	27.20	341.51	5,505.4	2,399.5	-802.2	2,530.1	0.00	0.00	0.00
6,200.0	27.20	341.51	5,594.3	2,442.9	-816.7	2,575.8	0.00	0.00	0.00
6,300.0	27.20	341.51	5,683.3	2,486.2	-831.2	2,621.5	0.00	0.00	0.00
6,400.0	27.20	341.51	5,772.2	2,529.6	-845.7	2,667.2	0.00	0.00	0.00
6,456.0	27.20	341.51	5,822.0	2,553.8	-853.8	2,692.8	0.00	0.00	0.00
MVRD									
6,500.0	27.20	341.51	5,861.2	2,572.9	-860.2	2,712.9	0.00	0.00	0.00
6,519.0	27.20	341.51	5,878.0	2,581.1	-862.9	2,721.6	0.00	0.00	0.00
WFRK/UMVRD									
6,600.0	27.20	341.51	5,950.1	2,616.3	-874.7	2,758.6	0.00	0.00	0.00
6,607.9	27.20	341.51	5,957.1	2,619.7	-875.8	2,762.2	0.00	0.00	0.00
6,700.0	25.82	341.51	6,039.5	2,658.7	-888.9	2,803.3	1.50	-1.50	0.00
6,800.0	24.32	341.51	6,130.1	2,698.9	-902.3	2,845.7	1.50	-1.50	0.00
6,900.0	22.82	341.51	6,221.8	2,736.8	-915.0	2,885.7	1.50	-1.50	0.00
7,000.0	21.32	341.51	6,314.4	2,772.4	-926.9	2,923.2	1.50	-1.50	0.00
7,100.0	19.82	341.51	6,408.1	2,805.7	-938.0	2,958.4	1.50	-1.50	0.00
7,200.0	18.32	341.51	6,502.6	2,836.7	-948.4	2,991.0	1.50	-1.50	0.00
7,300.0	16.82	341.51	6,597.9	2,865.3	-957.9	3,021.2	1.50	-1.50	0.00
7,400.0	15.32	341.51	6,694.0	2,891.6	-966.7	3,048.9	1.50	-1.50	0.00
7,500.0	13.82	341.51	6,790.8	2,915.4	-974.7	3,074.0	1.50	-1.50	0.00
7,600.0	12.32	341.51	6,888.2	2,936.9	-981.9	3,096.7	1.50	-1.50	0.00
7,700.0	10.82	341.51	6,986.2	2,955.9	-988.2	3,116.7	1.50	-1.50	0.00
7,707.0	10.71	341.51	6,993.0	2,957.1	-988.6	3,118.0	1.50	-1.50	0.00
TOP GAS									
7,800.0	9.32	341.51	7,084.6	2,972.5	-993.8	3,134.2	1.50	-1.50	0.00
7,900.0	7.82	341.51	7,183.5	2,986.6	-998.5	3,149.1	1.50	-1.50	0.00
8,000.0	6.32	341.51	7,282.7	2,998.3	-1,002.4	3,161.4	1.50	-1.50	0.00
8,100.0	4.82	341.51	7,382.3	3,007.5	-1,005.5	3,171.1	1.50	-1.50	0.00
8,200.0	3.32	341.51	7,482.0	3,014.2	-1,007.7	3,178.2	1.50	-1.50	0.00
8,300.0	1.82	341.51	7,581.9	3,018.4	-1,009.1	3,182.7	1.50	-1.50	0.00
8,400.0	0.32	341.51	7,681.9	3,020.2	-1,009.7	3,184.5	1.50	-1.50	0.00
8,421.1	0.00	0.00	7,703.0	3,020.3	-1,009.7	3,184.6	1.50	-1.50	0.00
8,500.0	0.00	0.00	7,781.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00
8,600.0	0.00	0.00	7,881.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00
8,700.0	0.00	0.00	7,981.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00
8,800.0	0.00	0.00	8,081.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00
8,900.0	0.00	0.00	8,181.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00
9,000.0	0.00	0.00	8,281.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00

N/A
Planning Report

Database:	EDM_PROD	Local Co-ordinate Reference:	Well PA 531-13 - Slot A11
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 531-13	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)	
9,100.0	0.00	0.00	8,381.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
9,175.1	0.00	0.00	8,457.0	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
CMEO										
9,200.0	0.00	0.00	8,481.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
9,300.0	0.00	0.00	8,581.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
9,400.0	0.00	0.00	8,681.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
9,500.0	0.00	0.00	8,781.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
9,600.0	0.00	0.00	8,881.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
9,700.0	0.00	0.00	8,981.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,081.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,181.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,281.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
10,071.1	0.00	0.00	9,353.0	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
RLNS										
10,100.0	0.00	0.00	9,381.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
10,200.0	0.00	0.00	9,481.9	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
10,221.1	0.00	0.00	9,503.0	3,020.3	-1,009.7	3,184.6	0.00	0.00	0.00	
PA 531-13 TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
PA 531-13 TD	0.00	0.00	9,503.0	3,020.3	-1,009.7	1,626,860.00	2,310,305.30	39° 31' 44.465 N	107° 56' 43.610 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	1,058.2	9 5/8"	9.625	13.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,740.8	3,407.0	G SAND		0.00		
3,845.3	3,500.0	G SAND BASE		0.00		
6,456.0	5,822.0	MVRD		0.00		
6,519.0	5,878.0	WFRK/UMVRD		0.00		
7,707.0	6,993.0	TOP GAS		0.00		
9,175.1	8,457.0	CMEO		0.00		
10,071.1	9,353.0	RLNS		0.00		