

TEP Rocky Mountain LLC

Garfield County, CO NAD83

TR 43-32-597 Pad

TR 34-32-597 - Slot B3

OH

Plan: Plan #1

Standard Planning Report

11 May, 2017

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well TR 34-32-597 - Slot B3
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 8165.8ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 8165.8ft (Original Well Elev)
Site:	TR 43-32-597 Pad	North Reference:	True
Well:	TR 34-32-597	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	TR 43-32-597 Pad				
Site Position:	Northing:	1,644,097.47 ft	Latitude:	39° 34' 6.884 N	
From: Map	Easting:	2,212,484.29 ft	Longitude:	108° 17' 38.263 W	
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.76 °

Well	TR 34-32-597 - Slot B3				
Well Position	+N/-S	-42.1 ft	Northing:	1,644,056.78 ft	Latitude: 39° 34' 6.468 N
	+E/-W	-43.9 ft	Easting:	2,212,439.08 ft	Longitude: 108° 17' 38.824 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level: 8,141.8 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/11/2017	9.85	65.59	51,523.87577326

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	243.46

Plan Survey Tool Program	Date	5/11/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,038.6 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	
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.00	0.00	0.00	
916.6	17.00	243.46	908.3	-37.3	-74.6	3.00	3.00	0.00	243.46	
5,604.4	17.00	243.46	5,391.3	-649.7	-1,300.6	0.00	0.00	0.00	0.00	
6,737.6	0.00	0.00	6,508.0	-724.3	-1,449.9	1.50	-1.50	0.00	180.00	
9,038.6	0.00	0.00	8,809.0	-724.3	-1,449.9	0.00	0.00	0.00	0.00	PBHL (TR 34-32-597)

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well TR 34-32-597 - Slot B3
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 8165.8ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 8165.8ft (Original Well Elev)
Site:	TR 43-32-597 Pad	North Reference:	True
Well:	TR 34-32-597	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
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	1.50	243.46	400.0	-0.3	-0.6	0.7	3.00	3.00	0.00
500.0	4.50	243.46	499.8	-2.6	-5.3	5.9	3.00	3.00	0.00
600.0	7.50	243.46	599.3	-7.3	-14.6	16.3	3.00	3.00	0.00
700.0	10.50	243.46	698.0	-14.3	-28.6	32.0	3.00	3.00	0.00
800.0	13.50	243.46	795.8	-23.6	-47.2	52.8	3.00	3.00	0.00
900.0	16.50	243.46	892.4	-35.1	-70.4	78.6	3.00	3.00	0.00
916.6	17.00	243.46	908.3	-37.3	-74.6	83.4	3.00	3.00	0.00
1,000.0	17.00	243.46	988.1	-48.2	-96.4	107.8	0.00	0.00	0.00
1,100.0	17.00	243.46	1,083.7	-61.2	-122.6	137.0	0.00	0.00	0.00
1,200.0	17.00	243.46	1,179.3	-74.3	-148.8	166.3	0.00	0.00	0.00
1,300.0	17.00	243.46	1,275.0	-87.4	-174.9	195.5	0.00	0.00	0.00
1,400.0	17.00	243.46	1,370.6	-100.4	-201.1	224.8	0.00	0.00	0.00
1,500.0	17.00	243.46	1,466.2	-113.5	-227.2	254.0	0.00	0.00	0.00
1,600.0	17.00	243.46	1,561.9	-126.6	-253.4	283.2	0.00	0.00	0.00
1,700.0	17.00	243.46	1,657.5	-139.6	-279.5	312.5	0.00	0.00	0.00
1,800.0	17.00	243.46	1,753.1	-152.7	-305.7	341.7	0.00	0.00	0.00
1,900.0	17.00	243.46	1,848.8	-165.8	-331.8	370.9	0.00	0.00	0.00
2,000.0	17.00	243.46	1,944.4	-178.8	-358.0	400.2	0.00	0.00	0.00
2,100.0	17.00	243.46	2,040.0	-191.9	-384.1	429.4	0.00	0.00	0.00
2,118.8	17.00	243.46	2,058.0	-194.3	-389.0	434.9	0.00	0.00	0.00
Wasatch									
2,200.0	17.00	243.46	2,135.7	-205.0	-410.3	458.6	0.00	0.00	0.00
2,300.0	17.00	243.46	2,231.3	-218.0	-436.4	487.9	0.00	0.00	0.00
2,369.0	17.00	243.46	2,297.3	-227.0	-454.5	508.0	0.00	0.00	0.00
9 5/8"									
2,400.0	17.00	243.46	2,326.9	-231.1	-462.6	517.1	0.00	0.00	0.00
2,500.0	17.00	243.46	2,422.6	-244.2	-488.7	546.3	0.00	0.00	0.00
2,600.0	17.00	243.46	2,518.2	-257.2	-514.9	575.6	0.00	0.00	0.00
2,700.0	17.00	243.46	2,613.8	-270.3	-541.0	604.8	0.00	0.00	0.00
2,800.0	17.00	243.46	2,709.4	-283.3	-567.2	634.0	0.00	0.00	0.00
2,900.0	17.00	243.46	2,805.1	-296.4	-593.3	663.3	0.00	0.00	0.00
3,000.0	17.00	243.46	2,900.7	-309.5	-619.5	692.5	0.00	0.00	0.00
3,100.0	17.00	243.46	2,996.3	-322.5	-645.7	721.7	0.00	0.00	0.00
3,200.0	17.00	243.46	3,092.0	-335.6	-671.8	751.0	0.00	0.00	0.00
3,300.0	17.00	243.46	3,187.6	-348.7	-698.0	780.2	0.00	0.00	0.00
3,400.0	17.00	243.46	3,283.2	-361.7	-724.1	809.4	0.00	0.00	0.00
3,500.0	17.00	243.46	3,378.9	-374.8	-750.3	838.7	0.00	0.00	0.00
3,600.0	17.00	243.46	3,474.5	-387.9	-776.4	867.9	0.00	0.00	0.00
3,700.0	17.00	243.46	3,570.1	-400.9	-802.6	897.1	0.00	0.00	0.00
3,800.0	17.00	243.46	3,665.8	-414.0	-828.7	926.4	0.00	0.00	0.00
3,900.0	17.00	243.46	3,761.4	-427.1	-854.9	955.6	0.00	0.00	0.00
3,922.6	17.00	243.46	3,783.0	-430.0	-860.8	962.2	0.00	0.00	0.00
Top of "G" Sand									
3,956.1	17.00	243.46	3,815.0	-434.4	-869.5	972.0	0.00	0.00	0.00
Base of "G" Sand									
4,000.0	17.00	243.46	3,857.0	-440.1	-881.0	984.8	0.00	0.00	0.00
4,100.0	17.00	243.46	3,952.7	-453.2	-907.2	1,014.1	0.00	0.00	0.00
4,103.5	17.00	243.46	3,956.0	-453.6	-908.1	1,015.1	0.00	0.00	0.00

N/A
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Well:	TR 34-32-597	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)
Fort Union									
4,200.0	17.00	243.46	4,048.3	-466.3	-933.3	1,043.3	0.00	0.00	0.00
4,300.0	17.00	243.46	4,143.9	-479.3	-959.5	1,072.5	0.00	0.00	0.00
4,400.0	17.00	243.46	4,239.5	-492.4	-985.6	1,101.8	0.00	0.00	0.00
4,500.0	17.00	243.46	4,335.2	-505.4	-1,011.8	1,131.0	0.00	0.00	0.00
4,600.0	17.00	243.46	4,430.8	-518.5	-1,037.9	1,160.2	0.00	0.00	0.00
4,700.0	17.00	243.46	4,526.4	-531.6	-1,064.1	1,189.5	0.00	0.00	0.00
4,800.0	17.00	243.46	4,622.1	-544.6	-1,090.2	1,218.7	0.00	0.00	0.00
4,900.0	17.00	243.46	4,717.7	-557.7	-1,116.4	1,247.9	0.00	0.00	0.00
5,000.0	17.00	243.46	4,813.3	-570.8	-1,142.5	1,277.2	0.00	0.00	0.00
5,100.0	17.00	243.46	4,909.0	-583.8	-1,168.7	1,306.4	0.00	0.00	0.00
5,200.0	17.00	243.46	5,004.6	-596.9	-1,194.9	1,335.7	0.00	0.00	0.00
5,229.7	17.00	243.46	5,033.0	-600.8	-1,202.6	1,344.3	0.00	0.00	0.00
Ohio Creek									
5,300.0	17.00	243.46	5,100.2	-610.0	-1,221.0	1,364.9	0.00	0.00	0.00
5,400.0	17.00	243.46	5,195.9	-623.0	-1,247.2	1,394.1	0.00	0.00	0.00
5,500.0	17.00	243.46	5,291.5	-636.1	-1,273.3	1,423.4	0.00	0.00	0.00
5,518.3	17.00	243.46	5,309.0	-638.5	-1,278.1	1,428.7	0.00	0.00	0.00
Mesaverde									
5,600.0	17.00	243.46	5,387.1	-649.2	-1,299.5	1,452.6	0.00	0.00	0.00
5,604.4	17.00	243.46	5,391.3	-649.7	-1,300.6	1,453.9	0.00	0.00	0.00
5,700.0	15.56	243.46	5,483.1	-661.7	-1,324.6	1,480.7	1.50	-1.50	0.00
5,800.0	14.06	243.46	5,579.8	-673.1	-1,347.5	1,506.2	1.50	-1.50	0.00
5,900.0	12.56	243.46	5,677.1	-683.4	-1,368.1	1,529.3	1.50	-1.50	0.00
6,000.0	11.06	243.46	5,775.0	-692.6	-1,386.4	1,549.7	1.50	-1.50	0.00
6,100.0	9.56	243.46	5,873.3	-700.6	-1,402.4	1,567.6	1.50	-1.50	0.00
6,200.0	8.06	243.46	5,972.2	-707.4	-1,416.1	1,583.0	1.50	-1.50	0.00
6,232.1	7.58	243.46	6,004.0	-709.4	-1,420.0	1,587.3	1.50	-1.50	0.00
Approx. Top Gas									
6,300.0	6.56	243.46	6,071.3	-713.1	-1,427.5	1,595.7	1.50	-1.50	0.00
6,400.0	5.06	243.46	6,170.8	-717.6	-1,436.6	1,605.8	1.50	-1.50	0.00
6,500.0	3.56	243.46	6,270.5	-721.0	-1,443.3	1,613.4	1.50	-1.50	0.00
6,600.0	2.06	243.46	6,370.4	-723.2	-1,447.7	1,618.3	1.50	-1.50	0.00
6,700.0	0.56	243.46	6,470.4	-724.2	-1,449.7	1,620.6	1.50	-1.50	0.00
6,737.6	0.00	0.00	6,508.0	-724.3	-1,449.9	1,620.7	1.50	-1.50	0.00
6,800.0	0.00	0.00	6,570.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
6,900.0	0.00	0.00	6,670.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,000.0	0.00	0.00	6,770.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,100.0	0.00	0.00	6,870.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,200.0	0.00	0.00	6,970.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,300.0	0.00	0.00	7,070.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,400.0	0.00	0.00	7,170.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,500.0	0.00	0.00	7,270.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,600.0	0.00	0.00	7,370.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,700.0	0.00	0.00	7,470.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,800.0	0.00	0.00	7,570.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
7,826.6	0.00	0.00	7,597.0	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
Cameo Coals									
7,900.0	0.00	0.00	7,670.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
8,000.0	0.00	0.00	7,770.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
8,100.0	0.00	0.00	7,870.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
8,154.6	0.00	0.00	7,925.0	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00
Rollins SS									

N/A
Planning Report

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Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 8165.8ft (Original Well Elev)
Site:	TR 43-32-597 Pad	North Reference:	True
Well:	TR 34-32-597	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)	
8,200.0	0.00	0.00	7,970.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,070.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
8,334.6	0.00	0.00	8,105.0	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
Cozzette										
8,400.0	0.00	0.00	8,170.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,270.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
8,567.6	0.00	0.00	8,338.0	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
Corcoran										
8,600.0	0.00	0.00	8,370.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,470.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
8,738.6	0.00	0.00	8,509.0	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
Sego										
8,800.0	0.00	0.00	8,570.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,670.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,770.4	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
9,038.6	0.00	0.00	8,809.0	-724.3	-1,449.9	1,620.7	0.00	0.00	0.00	
PBHL (TR 34-32-597)										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL (TR 34-32-597)	0.00	0.00	8,809.0	-724.3	-1,449.9	1,643,377.40	2,210,967.60	39° 33' 59.309 N	108° 17' 57.338 W
- hit/miss target									
- Shape									
- plan hits target center									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,369.0	2,297.3	9 5/8"	9.625	14.750	

N/A
Planning Report

Database:	EDM_PRO	Local Co-ordinate Reference:	Well TR 34-32-597 - Slot B3
Company:	TEP Rocky Mountain LLC	TVD Reference:	WELL @ 8165.8ft (Original Well Elev)
Project:	Garfield County, CO NAD83	MD Reference:	WELL @ 8165.8ft (Original Well Elev)
Site:	TR 43-32-597 Pad	North Reference:	True
Well:	TR 34-32-597	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,118.8	2,058.0	Wasatch		0.00		
3,922.6	3,783.0	Top of "G" Sand		0.00		
3,956.1	3,815.0	Base of "G" Sand		0.00		
4,103.5	3,956.0	Fort Union		0.00		
5,229.7	5,033.0	Ohio Creek		0.00		
5,518.3	5,309.0	Mesaverde		0.00		
6,232.1	6,004.0	Approx. Top Gas		0.00		
7,826.6	7,597.0	Cameo Coals		0.00		
8,154.6	7,925.0	Rollins SS		0.00		
8,334.6	8,105.0	Cozzette		0.00		
8,567.6	8,338.0	Corcoran		0.00		
8,738.6	8,509.0	Sego		0.00		