

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PA 423-23 KMV	5792.00	2935.68	-748.39	1619413.50	2304067.90	39.5081279	-107.9668193	Circle (Radius: 50.00)
- plan misses target center by 36.81usft at 6624.72usft MD (5796.74 TVD, 2900.30 N, -739.38 E)								
PA 423-23 PBHL	8426.00	2935.68	-748.39	1619413.50	2304067.90	39.5081279	-107.9668193	Point
- plan misses target center by 0.01usft at 9255.66usft MD (8426.00 TVD, 2935.68 N, -748.40 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 31-26 Pad

PA 423-23 - Slot PA 423-23 (B1)

OH

Plan: Plan #3 19Jun2019mmsdi

Standard Planning Report

25 June, 2019



Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 423-23 - Slot PA 423-23 (B1)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 423-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

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 31-26 Pad			
Site Position:		Northing:	1,616,455.80 usft	Latitude:	39.5000599
From:	Map	Easting:	2,304,726.80 usft	Longitude:	-107.9642007
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.55 °

Well	PA 423-23 - Slot PA 423-23 (B1)					
Well Position	+N/-S	3.06 usft	Northing:	1,616,458.60 usft	Latitude:	39.5000683
	+E/-W	9.52 usft	Easting:	2,304,736.40 usft	Longitude:	-107.9641669
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,486.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/26/2018	9.40	65.77	51,650

Design	Plan #3 19Jun2019mmsdi			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	345.70

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,265.04	34.35	345.70	1,197.67	322.77	-82.28	3.00	3.00	0.00	345.70	
4,863.18	34.35	345.70	4,168.27	2,290.15	-583.84	0.00	0.00	0.00	0.00	
6,619.93	8.00	345.70	5,792.00	2,899.66	-739.22	1.50	-1.50	0.00	180.00	
7,153.27	0.00	0.00	6,323.60	2,935.68	-748.40	1.50	-1.50	0.00	180.00	
9,255.66	0.00	0.00	8,426.00	2,935.68	-748.40	0.00	0.00	0.00	0.00	PA 423-23 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 423-23 - Slot PA 423-23 (B1)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 423-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
200.00	2.40	345.70	199.98	1.62	-0.41	1.68	3.00	3.00	0.00
300.00	5.40	345.70	299.73	8.21	-2.09	8.48	3.00	3.00	0.00
400.00	8.40	345.70	399.00	19.85	-5.06	20.49	3.00	3.00	0.00
500.00	11.40	345.70	497.50	36.51	-9.31	37.68	3.00	3.00	0.00
600.00	14.40	345.70	594.96	58.14	-14.82	60.00	3.00	3.00	0.00
700.00	17.40	345.70	691.13	84.69	-21.59	87.39	3.00	3.00	0.00
800.00	20.40	345.70	785.72	116.07	-29.59	119.78	3.00	3.00	0.00
900.00	23.40	345.70	878.50	152.21	-38.80	157.08	3.00	3.00	0.00
1,000.00	26.40	345.70	969.19	193.00	-49.20	199.18	3.00	3.00	0.00
1,100.00	29.40	345.70	1,057.56	238.34	-60.76	245.96	3.00	3.00	0.00
9 5/8" Casing @ 1100' MD									
1,200.00	32.40	345.70	1,143.35	288.10	-73.45	297.31	3.00	3.00	0.00
1,265.04	34.35	345.70	1,197.67	322.77	-82.28	333.09	3.00	3.00	0.00
Start 3598.14 hold at 1265.04 MD									
1,300.00	34.35	345.70	1,226.53	341.88	-87.16	352.82	0.00	0.00	0.00
1,400.00	34.35	345.70	1,309.09	396.56	-101.10	409.24	0.00	0.00	0.00
1,500.00	34.35	345.70	1,391.65	451.24	-115.04	465.67	0.00	0.00	0.00
1,600.00	34.35	345.70	1,474.21	505.92	-128.97	522.10	0.00	0.00	0.00
1,700.00	34.35	345.70	1,556.77	560.59	-142.91	578.52	0.00	0.00	0.00
1,800.00	34.35	345.70	1,639.32	615.27	-156.85	634.95	0.00	0.00	0.00
1,900.00	34.35	345.70	1,721.88	669.95	-170.79	691.38	0.00	0.00	0.00
2,000.00	34.35	345.70	1,804.44	724.63	-184.73	747.80	0.00	0.00	0.00
2,100.00	34.35	345.70	1,887.00	779.30	-198.67	804.23	0.00	0.00	0.00
2,200.00	34.35	345.70	1,969.56	833.98	-212.61	860.66	0.00	0.00	0.00
2,300.00	34.35	345.70	2,052.12	888.66	-226.55	917.08	0.00	0.00	0.00
2,400.00	34.35	345.70	2,134.68	943.34	-240.49	973.51	0.00	0.00	0.00
2,500.00	34.35	345.70	2,217.24	998.01	-254.43	1,029.93	0.00	0.00	0.00
2,600.00	34.35	345.70	2,299.80	1,052.69	-268.37	1,086.36	0.00	0.00	0.00
2,700.00	34.35	345.70	2,382.36	1,107.37	-282.31	1,142.79	0.00	0.00	0.00
2,700.78	34.35	345.70	2,383.00	1,107.79	-282.41	1,143.23	0.00	0.00	0.00
G SAND TOP									
2,785.56	34.35	345.70	2,453.00	1,154.15	-294.23	1,191.07	0.00	0.00	0.00
G SAND BASE									
2,800.00	34.35	345.70	2,464.92	1,162.05	-296.24	1,199.21	0.00	0.00	0.00
2,900.00	34.35	345.70	2,547.48	1,216.72	-310.18	1,255.64	0.00	0.00	0.00
3,000.00	34.35	345.70	2,630.04	1,271.40	-324.12	1,312.07	0.00	0.00	0.00
3,100.00	34.35	345.70	2,712.60	1,326.08	-338.06	1,368.49	0.00	0.00	0.00
3,200.00	34.35	345.70	2,795.16	1,380.76	-352.00	1,424.92	0.00	0.00	0.00
3,300.00	34.35	345.70	2,877.72	1,435.44	-365.94	1,481.35	0.00	0.00	0.00
3,400.00	34.35	345.70	2,960.28	1,490.11	-379.88	1,537.77	0.00	0.00	0.00
3,500.00	34.35	345.70	3,042.83	1,544.79	-393.82	1,594.20	0.00	0.00	0.00
3,600.00	34.35	345.70	3,125.39	1,599.47	-407.76	1,650.63	0.00	0.00	0.00
3,700.00	34.35	345.70	3,207.95	1,654.15	-421.70	1,707.05	0.00	0.00	0.00
3,800.00	34.35	345.70	3,290.51	1,708.82	-435.64	1,763.48	0.00	0.00	0.00
3,900.00	34.35	345.70	3,373.07	1,763.50	-449.58	1,819.90	0.00	0.00	0.00
4,000.00	34.35	345.70	3,455.63	1,818.18	-463.51	1,876.33	0.00	0.00	0.00
4,100.00	34.35	345.70	3,538.19	1,872.86	-477.45	1,932.76	0.00	0.00	0.00
4,200.00	34.35	345.70	3,620.75	1,927.53	-491.39	1,989.18	0.00	0.00	0.00
4,300.00	34.35	345.70	3,703.31	1,982.21	-505.33	2,045.61	0.00	0.00	0.00
4,400.00	34.35	345.70	3,785.87	2,036.89	-519.27	2,102.04	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 423-23 - Slot PA 423-23 (B1)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 423-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.00	34.35	345.70	3,868.43	2,091.57	-533.21	2,158.46	0.00	0.00	0.00
4,600.00	34.35	345.70	3,950.99	2,146.24	-547.15	2,214.89	0.00	0.00	0.00
4,607.28	34.35	345.70	3,957.00	2,150.23	-548.16	2,219.00	0.00	0.00	0.00
LOWER WSTC									
4,700.00	34.35	345.70	4,033.55	2,200.92	-561.09	2,271.32	0.00	0.00	0.00
4,800.00	34.35	345.70	4,116.11	2,255.60	-575.03	2,327.74	0.00	0.00	0.00
4,863.18	34.35	345.70	4,168.27	2,290.15	-583.84	2,363.39	0.00	0.00	0.00
Start Drop -1.50									
4,900.00	33.80	345.70	4,198.77	2,310.14	-588.93	2,384.02	1.50	-1.50	0.00
5,000.00	32.30	345.70	4,282.58	2,362.98	-602.40	2,438.56	1.50	-1.50	0.00
5,100.00	30.80	345.70	4,367.80	2,413.68	-615.33	2,490.88	1.50	-1.50	0.00
5,200.00	29.30	345.70	4,454.36	2,462.20	-627.70	2,540.95	1.50	-1.50	0.00
5,300.00	27.80	345.70	4,542.20	2,508.51	-639.50	2,588.74	1.50	-1.50	0.00
5,400.00	26.30	345.70	4,631.26	2,552.57	-650.74	2,634.21	1.50	-1.50	0.00
5,424.22	25.94	345.70	4,653.00	2,562.90	-653.37	2,644.87	1.50	-1.50	0.00
OCRK - WRFK/UMVRD									
5,500.00	24.80	345.70	4,721.47	2,594.36	-661.39	2,677.34	1.50	-1.50	0.00
5,600.00	23.30	345.70	4,812.79	2,633.85	-671.46	2,718.09	1.50	-1.50	0.00
5,700.00	21.80	345.70	4,905.14	2,671.01	-680.93	2,756.44	1.50	-1.50	0.00
5,800.00	20.30	345.70	4,998.47	2,705.81	-689.80	2,792.35	1.50	-1.50	0.00
5,900.00	18.80	345.70	5,092.70	2,738.23	-698.07	2,825.81	1.50	-1.50	0.00
6,000.00	17.30	345.70	5,187.78	2,768.26	-705.72	2,856.80	1.50	-1.50	0.00
6,100.00	15.80	345.70	5,283.63	2,795.86	-712.76	2,885.28	1.50	-1.50	0.00
6,200.00	14.30	345.70	5,380.20	2,821.01	-719.17	2,911.24	1.50	-1.50	0.00
6,300.00	12.80	345.70	5,477.42	2,843.72	-724.96	2,934.67	1.50	-1.50	0.00
6,400.00	11.30	345.70	5,575.21	2,863.94	-730.11	2,955.54	1.50	-1.50	0.00
6,500.00	9.80	345.70	5,673.52	2,881.68	-734.64	2,973.85	1.50	-1.50	0.00
6,600.00	8.30	345.70	5,772.27	2,896.92	-738.52	2,989.58	1.50	-1.50	0.00
6,619.93	8.00	345.70	5,792.00	2,899.66	-739.22	2,992.40	1.50	-1.50	0.00
Start Drop -1.50 - KMGAS									
6,624.72	7.93	345.70	5,796.74	2,900.30	-739.38	2,993.07	1.50	-1.50	0.00
PA 423-23 KMV									
6,700.00	6.80	345.70	5,871.40	2,909.65	-741.77	3,002.72	1.50	-1.50	0.00
6,800.00	5.30	345.70	5,970.84	2,919.86	-744.37	3,013.25	1.50	-1.50	0.00
6,900.00	3.80	345.70	6,070.52	2,927.55	-746.33	3,021.18	1.50	-1.50	0.00
7,000.00	2.30	345.70	6,170.38	2,932.70	-747.64	3,026.50	1.50	-1.50	0.00
7,100.00	0.80	345.70	6,270.34	2,935.32	-748.31	3,029.21	1.50	-1.50	0.00
7,153.27	0.00	0.00	6,323.60	2,935.68	-748.40	3,029.58	1.50	-1.50	26.85
Start 2102.40 hold at 7153.27 MD									
7,200.00	0.00	0.00	6,370.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
7,300.00	0.00	0.00	6,470.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
7,400.00	0.00	0.00	6,570.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
7,500.00	0.00	0.00	6,670.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
7,600.00	0.00	0.00	6,770.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
7,700.00	0.00	0.00	6,870.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
7,800.00	0.00	0.00	6,970.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
7,900.00	0.00	0.00	7,070.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
8,000.00	0.00	0.00	7,170.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
8,100.00	0.00	0.00	7,270.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
8,200.00	0.00	0.00	7,370.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
8,300.00	0.00	0.00	7,470.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
8,400.00	0.00	0.00	7,570.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00
8,500.00	0.00	0.00	7,670.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 423-23 - Slot PA 423-23 (B1)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 423-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,600.00	0.00	0.00	7,770.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
8,680.66	0.00	0.00	7,851.00	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
CME0										
8,700.00	0.00	0.00	7,870.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
8,800.00	0.00	0.00	7,970.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,070.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,170.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
9,027.66	0.00	0.00	8,198.00	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
RLNS										
9,100.00	0.00	0.00	8,270.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
9,200.00	0.00	0.00	8,370.34	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
9,255.66	0.00	0.00	8,426.00	2,935.68	-748.40	3,029.58	0.00	0.00	0.00	
TD at 9255.66 - TD - PA 423-23 PBHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PA 423-23 KMV	0.00	0.00	5,792.00	2,935.68	-748.39	1,619,413.50	2,304,067.90	39.5081280	-107.9668194
- plan misses target center by 36.81usft at 6624.72usft MD (5796.74 TVD, 2900.30 N, -739.38 E)									
- Circle (radius 50.00)									
PA 423-23 PBHL	0.00	0.00	8,426.00	2,935.68	-748.39	1,619,413.50	2,304,067.90	39.5081280	-107.9668194
- plan misses target center by 0.01usft at 9255.66usft MD (8426.00 TVD, 2935.68 N, -748.40 E)									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,057.56	9 5/8" Casing @ 1100' MD	9.62	13.50	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,700.78	2,383.00	G SAND TOP		0.00	0.00
2,785.56	2,453.00	G SAND BASE		0.00	0.00
4,607.28	3,957.00	LOWER WSTC		0.00	0.00
5,424.22	4,653.00	OCRK		0.00	0.00
5,424.22	4,653.00	WRFK/UMVRD		0.00	0.00
6,619.93	5,792.00	KMVGAS		0.00	0.00
8,680.66	7,851.00	CMEO		0.00	0.00
9,027.66	8,198.00	RLNS		0.00	0.00
9,255.66	8,426.00	TD		0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 423-23 - Slot PA 423-23 (B1)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 423-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.00	120.00	0.00	0.00	Start Build 3.00
1,265.04	1,197.67	322.77	-82.28	Start 3598.14 hold at 1265.04 MD
4,863.18	4,168.27	2,290.15	-583.84	Start Drop -1.50
6,619.93	5,792.00	2,899.66	-739.22	Start Drop -1.50
7,153.27	6,323.60	2,935.68	-748.40	Start 2102.40 hold at 7153.27 MD
9,255.66	8,426.00	2,935.68	-748.40	TD at 9255.66