

Name	TVD	+N/-S	+E/-W	Northing	Eastng	Latitude	Longitude	Shape
GM 422-8 BTV	4835.00	-753.70	-2053.13	16004418.65	2255299.24	39.4522397	-108.1376377	Circle (Radius: 50.00)
- plan misses target center by 42.88usft at 5338.78usft MD (4841.94 TVD, -739.12 N, -2013.41 E)								
GM 422-8 PBHL	6531.00	-753.70	-2053.13	16004418.65	2255299.24	39.4522397	-108.1376377	Point
- plan misses target center by 0.01usft at 7030.27usft MD (6531.00 TVD, -753.70 N, -2053.13 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 60-8D Pad

GM 422-8 - Slot GM 422-8 (A2)

OH

Plan: Plan #1 18Jun2018 mmsdi

Standard Planning Report

20 June, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 422-8 - Slot GM 422-8 (A2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 422-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 18Jun2018 mmsdi		

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		MV 60-8D Pad			
Site Position:		Northing:	1,601,172.03 usft	Latitude:	39.4544712
From:	Map	Easting:	2,257,381.57 usft	Longitude:	-108.1303437
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.66 °

Well	GM 422-8 - Slot GM 422-8 (A2)					
Well Position	+N/-S	-59.64 usft	Northing:	1,601,112.60 usft	Latitude:	39.4543074
	+E/-W	-6.52 usft	Easting:	2,257,373.33 usft	Longitude:	-108.1303668
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,175.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/18/2018	9.52	65.68	51,679

Design	Plan #1 18Jun2018 mmsdi			
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	249.84

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	
814.85	27.79	249.84	787.92	-56.95	-155.13	4.00	4.00	0.00	249.84	
4,442.03	27.79	249.84	3,996.63	-639.80	-1,742.86	0.00	0.00	0.00	0.00	
5,331.73	10.00	249.84	4,835.00	-738.70	-2,012.27	2.00	-2.00	0.00	180.00	
5,831.73	0.00	0.00	5,332.47	-753.70	-2,053.13	2.00	-2.00	22.03	180.00	
7,030.27	0.00	0.00	6,531.00	-753.70	-2,053.13	0.00	0.00	0.00	0.00	GM 422-8 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 422-8 - Slot GM 422-8 (A2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 422-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 18Jun2018 mmsdi		

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 4.00										
200.00	3.20	249.84	199.96	-0.77	-2.10	2.23	4.00	4.00	0.00	
300.00	7.20	249.84	299.53	-3.89	-10.60	11.29	4.00	4.00	0.00	
400.00	11.20	249.84	398.22	-9.40	-25.61	27.28	4.00	4.00	0.00	
500.00	15.20	249.84	495.56	-17.27	-47.04	50.11	4.00	4.00	0.00	
600.00	19.20	249.84	591.07	-27.46	-74.79	79.67	4.00	4.00	0.00	
700.00	23.20	249.84	684.28	-39.92	-108.73	115.83	4.00	4.00	0.00	
800.00	27.20	249.84	774.74	-54.59	-148.70	158.40	4.00	4.00	0.00	
814.85	27.79	249.84	787.92	-56.95	-155.13	165.25	4.00	4.00	0.00	
Start 3627.19 hold at 814.85 MD										
900.00	27.79	249.84	863.24	-70.63	-192.41	204.96	0.00	0.00	0.00	
1,000.00	27.79	249.84	951.71	-86.70	-236.18	251.59	0.00	0.00	0.00	
9 5/8" Casing @ 1000' MD										
1,100.00	27.79	249.84	1,040.17	-102.77	-279.95	298.22	0.00	0.00	0.00	
1,200.00	27.79	249.84	1,128.63	-118.84	-323.72	344.85	0.00	0.00	0.00	
1,300.00	27.79	249.84	1,217.10	-134.91	-367.50	391.48	0.00	0.00	0.00	
1,400.00	27.79	249.84	1,305.56	-150.98	-411.27	438.11	0.00	0.00	0.00	
1,500.00	27.79	249.84	1,394.02	-167.05	-455.04	484.74	0.00	0.00	0.00	
1,600.00	27.79	249.84	1,482.48	-183.11	-498.82	531.37	0.00	0.00	0.00	
1,700.00	27.79	249.84	1,570.95	-199.18	-542.59	577.99	0.00	0.00	0.00	
1,800.00	27.79	249.84	1,659.41	-215.25	-586.36	624.62	0.00	0.00	0.00	
1,900.00	27.79	249.84	1,747.87	-231.32	-630.14	671.25	0.00	0.00	0.00	
2,000.00	27.79	249.84	1,836.34	-247.39	-673.91	717.88	0.00	0.00	0.00	
2,100.00	27.79	249.84	1,924.80	-263.46	-717.68	764.51	0.00	0.00	0.00	
2,145.44	27.79	249.84	1,965.00	-270.76	-737.57	785.70	0.00	0.00	0.00	
G SAND										
2,200.00	27.79	249.84	2,013.26	-279.53	-761.46	811.14	0.00	0.00	0.00	
2,258.48	27.79	249.84	2,065.00	-288.93	-787.06	838.41	0.00	0.00	0.00	
G SAND BASE										
2,300.00	27.79	249.84	2,101.73	-295.60	-805.23	857.77	0.00	0.00	0.00	
2,400.00	27.79	249.84	2,190.19	-311.67	-849.00	904.40	0.00	0.00	0.00	
2,500.00	27.79	249.84	2,278.65	-327.74	-892.77	951.03	0.00	0.00	0.00	
2,600.00	27.79	249.84	2,367.11	-343.80	-936.55	997.66	0.00	0.00	0.00	
2,653.60	27.79	249.84	2,414.53	-352.42	-960.01	1,022.65	0.00	0.00	0.00	
FRUN										
2,700.00	27.79	249.84	2,455.58	-359.87	-980.32	1,044.29	0.00	0.00	0.00	
2,800.00	27.79	249.84	2,544.04	-375.94	-1,024.09	1,090.92	0.00	0.00	0.00	
2,900.00	27.79	249.84	2,632.50	-392.01	-1,067.87	1,137.55	0.00	0.00	0.00	
3,000.00	27.79	249.84	2,720.97	-408.08	-1,111.64	1,184.18	0.00	0.00	0.00	
3,100.00	27.79	249.84	2,809.43	-424.15	-1,155.41	1,230.81	0.00	0.00	0.00	
3,200.00	27.79	249.84	2,897.89	-440.22	-1,199.19	1,277.43	0.00	0.00	0.00	
3,300.00	27.79	249.84	2,986.36	-456.29	-1,242.96	1,324.06	0.00	0.00	0.00	
3,400.00	27.79	249.84	3,074.82	-472.36	-1,286.73	1,370.69	0.00	0.00	0.00	
3,500.00	27.79	249.84	3,163.28	-488.43	-1,330.50	1,417.32	0.00	0.00	0.00	
3,600.00	27.79	249.84	3,251.75	-504.49	-1,374.28	1,463.95	0.00	0.00	0.00	
3,700.00	27.79	249.84	3,340.21	-520.56	-1,418.05	1,510.58	0.00	0.00	0.00	
3,800.00	27.79	249.84	3,428.67	-536.63	-1,461.82	1,557.21	0.00	0.00	0.00	
3,900.00	27.79	249.84	3,517.13	-552.70	-1,505.60	1,603.84	0.00	0.00	0.00	
4,000.00	27.79	249.84	3,605.60	-568.77	-1,549.37	1,650.47	0.00	0.00	0.00	
4,027.59	27.79	249.84	3,630.00	-573.20	-1,561.45	1,663.33	0.00	0.00	0.00	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 422-8 - Slot GM 422-8 (A2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 422-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 18Jun2018 mmsdi		

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)
MVRD									
4,100.00	27.79	249.84	3,694.06	-584.84	-1,593.14	1,697.10	0.00	0.00	0.00
4,174.54	27.79	249.84	3,760.00	-596.82	-1,625.77	1,731.86	0.00	0.00	0.00
WFRK/UMVRD									
4,200.00	27.79	249.84	3,782.52	-600.91	-1,636.92	1,743.73	0.00	0.00	0.00
4,300.00	27.79	249.84	3,870.99	-616.98	-1,680.69	1,790.36	0.00	0.00	0.00
4,400.00	27.79	249.84	3,959.45	-633.05	-1,724.46	1,836.99	0.00	0.00	0.00
4,442.03	27.79	249.84	3,996.63	-639.80	-1,742.86	1,856.59	0.00	0.00	0.00
Start Drop -2.00									
4,500.00	26.63	249.84	4,048.18	-648.94	-1,767.75	1,883.09	2.00	-2.00	0.00
4,600.00	24.63	249.84	4,138.33	-663.84	-1,808.36	1,926.36	2.00	-2.00	0.00
4,700.00	22.63	249.84	4,229.94	-677.66	-1,845.99	1,966.44	2.00	-2.00	0.00
4,800.00	20.63	249.84	4,322.89	-690.36	-1,880.60	2,003.31	2.00	-2.00	0.00
4,900.00	18.63	249.84	4,417.07	-701.94	-1,912.14	2,036.91	2.00	-2.00	0.00
5,000.00	16.63	249.84	4,512.37	-712.38	-1,940.58	2,067.20	2.00	-2.00	0.00
5,100.00	14.63	249.84	4,608.66	-721.67	-1,965.88	2,094.15	2.00	-2.00	0.00
5,200.00	12.63	249.84	4,705.84	-729.79	-1,988.00	2,117.72	2.00	-2.00	0.00
5,300.00	10.63	249.84	4,803.78	-736.74	-2,006.94	2,137.89	2.00	-2.00	0.00
5,331.73	10.00	249.84	4,835.00	-738.70	-2,012.27	2,143.57	2.00	-2.00	0.00
Start DLS 2.00 TFO 180.00 - KMGAS									
5,338.78	9.86	249.84	4,841.94	-739.12	-2,013.41	2,144.79	2.00	-2.00	0.00
GM 422-8 BTV									
5,400.00	8.63	249.84	4,902.37	-742.51	-2,022.65	2,154.63	2.00	-2.00	0.00
5,500.00	6.63	249.84	5,001.48	-747.09	-2,035.12	2,167.91	2.00	-2.00	0.00
5,600.00	4.63	249.84	5,100.99	-750.47	-2,044.33	2,177.73	2.00	-2.00	0.00
5,700.00	2.63	249.84	5,200.78	-752.65	-2,050.28	2,184.07	2.00	-2.00	0.00
5,800.00	0.63	249.84	5,300.73	-753.64	-2,052.96	2,186.92	2.00	-2.00	0.00
5,831.73	0.00	0.00	5,332.47	-753.70	-2,053.13	2,187.10	2.00	-2.00	347.16
Start 1198.53 hold at 5831.73 MD									
5,900.00	0.00	0.00	5,400.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,000.00	0.00	0.00	5,500.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,100.00	0.00	0.00	5,600.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,200.00	0.00	0.00	5,700.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,300.00	0.00	0.00	5,800.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,400.00	0.00	0.00	5,900.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,500.00	0.00	0.00	6,000.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,571.27	0.00	0.00	6,072.00	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
CMEO									
6,600.00	0.00	0.00	6,100.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,700.00	0.00	0.00	6,200.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,800.00	0.00	0.00	6,300.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,900.00	0.00	0.00	6,400.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
6,930.27	0.00	0.00	6,431.00	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
RLNS									
7,000.00	0.00	0.00	6,500.73	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
7,030.27	0.00	0.00	6,531.00	-753.70	-2,053.13	2,187.10	0.00	0.00	0.00
TD at 7030.27 - TD - GM 422-8 PBHL									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 422-8 - Slot GM 422-8 (A2)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6175' & RKB 24' @ 6199.00usft
Site:	MV 60-8D Pad	North Reference:	True
Well:	GM 422-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 18Jun2018 mmsdi		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
GM 422-8 BTV	0.00	0.00	4,835.00	-753.70	-2,053.13	1,600,418.65	2,255,299.24	39.4522379	-108.1376377
- plan misses target center by 42.88usft at 5338.78usft MD (4841.94 TVD, -739.12 N, -2013.41 E)									
- Circle (radius 50.00)									
GM 422-8 PBHL	0.00	0.00	6,531.00	-753.70	-2,053.13	1,600,418.65	2,255,299.24	39.4522379	-108.1376377
- plan misses target center by 0.01usft at 7030.27usft MD (6531.00 TVD, -753.70 N, -2053.13 E)									
- Point									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	951.71	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,145.44	1,965.00	G SAND		0.00	0.00
2,258.48	2,065.00	G SAND BASE		0.00	0.00
2,653.60	2,414.53	FRUN		0.00	0.00
4,027.59	3,630.00	MVRD		0.00	0.00
4,174.54	3,760.00	WFRK/UMVRD		0.00	0.00
5,331.73	4,835.00	KMVGAS		0.00	0.00
6,571.27	6,072.00	CME0		0.00	0.00
6,930.27	6,431.00	RLNS		0.00	0.00
7,030.27	6,531.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
120.00	120.00	0.00	0.00	Start Build 4.00
814.85	787.92	-56.95	-155.13	Start 3627.19 hold at 814.85 MD
4,442.03	3,996.63	-639.80	-1,742.86	Start Drop -2.00
5,331.73	4,835.00	-738.70	-2,012.27	Start DLS 2.00 TFO 180.00
5,831.73	5,332.47	-753.70	-2,053.13	Start 1198.53 hold at 5831.73 MD
7,030.27	6,531.00	-753.70	-2,053.13	TD at 7030.27