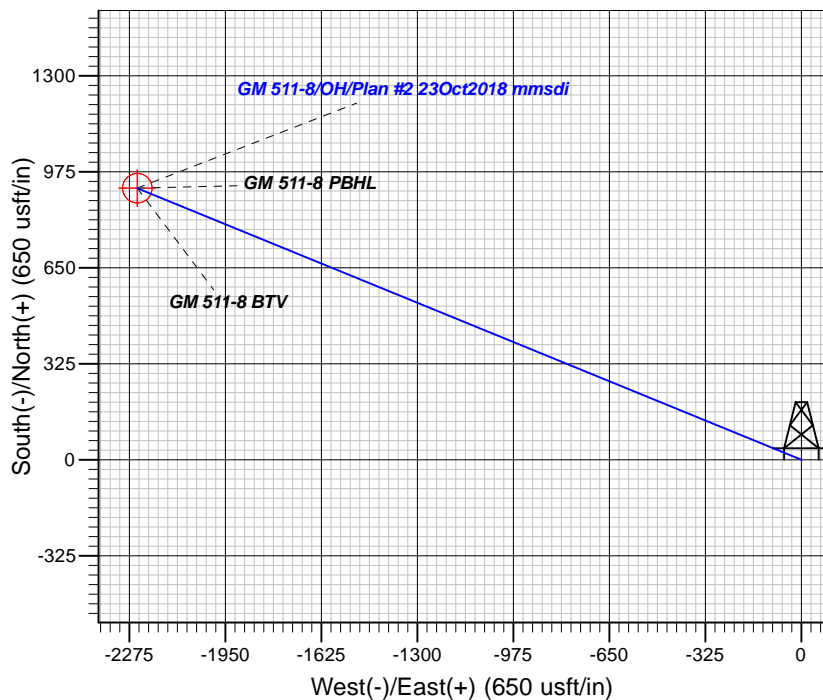




Magnetic Field
Strength: 51678.7snT
Dip Angle: 65.68°
Date: 6/18/2018
Model: HDGM

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1601165.98	2257370.64	39.4544537	-108.1303818	GM 511-8 (B9)



TVDPPath	MDPPath	Formation
2039.00	2275.85	G SAND
2139.00	2396.36	G SAND BASE
2489.07	2818.24	FRUN
3647.00	4205.62	MVRD
3777.00	4353.11	WFRK/UMVR
4852.00	5491.12	KMVGAS
6132.00	6773.66	CMEQ
6478.00	7119.66	RLNS
6628.00	7269.66	TD

10:02, November 02 2018
Created By: Mel Mireles

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone

System Datum: Mean Sea Level

CASING DETAILS

TVD	MD	Name	Size
970.73	1000.00	13/8" Casing @ 1000' MD	13.37

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	
3	126.79	33.92	292.24	1200.87	123.07	-300.90	3.00	292.24	325.09	
4	389.62	32.32	292.24	3383.55	678.79	-1659.66	0.00	0.00	0.00	1793.10
5	5491.12	10.00	292.24	4852.00	902.95	-2207.74	1.50	180.00	2385.25	
6	5991.12	0.00	0.00	5349.47	919.43	-2248.02	2.00	180.00	2428.78	
7	7269.66	0.00	0.00	6628.00	919.43	-2248.02	0.00	0.00	2428.78	GM 511-8 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 511-8 BTV	4852.00	919.43	-2248.02	160210.51	12255150.18	39.4569777	-108.1383434	Circle (Radius: 50.00)
- plan misses target center by 42.87usft at 5498.61usft MD (4859.38 TVD, 903.44 N, -2208.94 E)								
GM 511-8 PBHL	6628.00	919.43	-2248.02	160210.51	12255150.18	39.4569777	-108.1383434	Point
- plan misses target center by 0.01usft at 7269.66usft MD (6628.00 TVD, 919.43 N, -2248.02 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 60-8D Pad

GM 511-8 - Slot GM 511-8 (B9)

OH

Plan: Plan #2 23Oct2018 mmsdi

Standard Planning Report

02 November, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 511-8 - Slot GM 511-8 (B9)
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 511-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 23Oct2018 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 511-8 - Slot GM 511-8 (B9)					
Well Position	+N/-S	-6.36 usft	Northing:	1,601,165.98 usft	Latitude:	39.4544537
	+E/-W	-10.75 usft	Easting:	2,257,370.64 usft	Longitude:	-108.1303818
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 #2 23Oct2018 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	292.24

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	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,265.79	33.92	292.24	1,200.87	123.07	-300.90	3.00	3.00	0.00	292.24	
3,896.22	33.92	292.24	3,383.55	678.79	-1,659.66	0.00	0.00	0.00	0.00	
5,491.12	10.00	292.24	4,852.00	902.95	-2,207.74	1.50	-1.50	0.00	180.00	
5,991.12	0.00	0.00	5,349.47	919.43	-2,248.02	2.00	-2.00	13.55	180.00	
7,269.66	0.00	0.00	6,628.00	919.43	-2,248.02	0.00	0.00	0.00	0.00	GM 511-8 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 511-8 - Slot GM 511-8 (B9)
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 511-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 23Oct2018 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
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
200.00	1.95	292.24	199.99	0.42	-1.02	1.11	3.00	3.00	0.00
300.00	4.95	292.24	299.79	2.70	-6.59	7.12	3.00	3.00	0.00
400.00	7.95	292.24	399.15	6.95	-16.99	18.36	3.00	3.00	0.00
500.00	10.95	292.24	497.78	13.16	-32.18	34.77	3.00	3.00	0.00
600.00	13.95	292.24	595.42	21.32	-52.14	56.33	3.00	3.00	0.00
700.00	16.95	292.24	691.79	31.41	-76.79	82.97	3.00	3.00	0.00
800.00	19.95	292.24	786.64	43.39	-106.08	114.61	3.00	3.00	0.00
900.00	22.95	292.24	879.71	57.23	-139.92	151.17	3.00	3.00	0.00
1,000.00	25.95	292.24	970.73	72.89	-178.23	192.56	3.00	3.00	0.00
13 3/8" Casing @ 1000' MD									
1,100.00	28.95	292.24	1,059.46	90.34	-220.89	238.65	3.00	3.00	0.00
1,200.00	31.95	292.24	1,145.66	109.53	-267.79	289.32	3.00	3.00	0.00
1,265.79	33.92	292.24	1,200.87	123.07	-300.90	325.09	3.00	3.00	0.00
Start 2630.43 hold at 1265.79 MD									
1,300.00	33.92	292.24	1,229.26	130.29	-318.57	344.19	0.00	0.00	0.00
1,400.00	33.92	292.24	1,312.24	151.42	-370.23	399.99	0.00	0.00	0.00
1,500.00	33.92	292.24	1,395.21	172.55	-421.88	455.80	0.00	0.00	0.00
1,600.00	33.92	292.24	1,478.19	193.67	-473.54	511.61	0.00	0.00	0.00
1,700.00	33.92	292.24	1,561.17	214.80	-525.19	567.42	0.00	0.00	0.00
1,800.00	33.92	292.24	1,644.15	235.93	-576.85	623.23	0.00	0.00	0.00
1,900.00	33.92	292.24	1,727.13	257.05	-628.50	679.04	0.00	0.00	0.00
2,000.00	33.92	292.24	1,810.10	278.18	-680.16	734.85	0.00	0.00	0.00
2,100.00	33.92	292.24	1,893.08	299.31	-731.81	790.66	0.00	0.00	0.00
2,200.00	33.92	292.24	1,976.06	320.43	-783.47	846.46	0.00	0.00	0.00
2,275.85	33.92	292.24	2,039.00	336.46	-822.65	888.79	0.00	0.00	0.00
G SAND									
2,300.00	33.92	292.24	2,059.04	341.56	-835.12	902.27	0.00	0.00	0.00
2,396.36	33.92	292.24	2,139.00	361.92	-884.90	956.05	0.00	0.00	0.00
G SAND BASE									
2,400.00	33.92	292.24	2,142.02	362.69	-886.78	958.08	0.00	0.00	0.00
2,500.00	33.92	292.24	2,225.00	383.81	-938.44	1,013.89	0.00	0.00	0.00
2,600.00	33.92	292.24	2,307.97	404.94	-990.09	1,069.70	0.00	0.00	0.00
2,700.00	33.92	292.24	2,390.95	426.07	-1,041.75	1,125.51	0.00	0.00	0.00
2,800.00	33.92	292.24	2,473.93	447.19	-1,093.40	1,181.32	0.00	0.00	0.00
2,818.24	33.92	292.24	2,489.07	451.05	-1,102.83	1,191.50	0.00	0.00	0.00
FRUN									
2,900.00	33.92	292.24	2,556.91	468.32	-1,145.06	1,237.12	0.00	0.00	0.00
3,000.00	33.92	292.24	2,639.89	489.45	-1,196.71	1,292.93	0.00	0.00	0.00
3,100.00	33.92	292.24	2,722.87	510.57	-1,248.37	1,348.74	0.00	0.00	0.00
3,200.00	33.92	292.24	2,805.84	531.70	-1,300.02	1,404.55	0.00	0.00	0.00
3,300.00	33.92	292.24	2,888.82	552.83	-1,351.68	1,460.36	0.00	0.00	0.00
3,400.00	33.92	292.24	2,971.80	573.95	-1,403.33	1,516.17	0.00	0.00	0.00
3,500.00	33.92	292.24	3,054.78	595.08	-1,454.99	1,571.98	0.00	0.00	0.00
3,600.00	33.92	292.24	3,137.76	616.21	-1,506.64	1,627.79	0.00	0.00	0.00
3,700.00	33.92	292.24	3,220.73	637.33	-1,558.30	1,683.59	0.00	0.00	0.00
3,800.00	33.92	292.24	3,303.71	658.46	-1,609.95	1,739.40	0.00	0.00	0.00
3,896.22	33.92	292.24	3,383.55	678.79	-1,659.66	1,793.10	0.00	0.00	0.00
Start Drop -1.50									
3,900.00	33.87	292.24	3,386.69	679.59	-1,661.61	1,795.21	1.50	-1.50	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 511-8 - Slot GM 511-8 (B9)
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 511-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 23Oct2018 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)	
4,000.00	32.37	292.24	3,470.45	700.27	-1,712.18	1,849.84	1.50	-1.50	0.00	
4,100.00	30.87	292.24	3,555.60	720.11	-1,760.70	1,902.27	1.50	-1.50	0.00	
4,200.00	29.37	292.24	3,642.10	739.11	-1,807.14	1,952.44	1.50	-1.50	0.00	
4,205.62	29.28	292.24	3,647.00	740.15	-1,809.69	1,955.19	1.50	-1.50	0.00	
MVRD										
4,300.00	27.87	292.24	3,729.88	757.24	-1,851.47	2,000.33	1.50	-1.50	0.00	
4,353.11	27.07	292.24	3,777.00	766.51	-1,874.14	2,024.83	1.50	-1.50	0.00	
WFRK/UMVRD										
4,400.00	26.37	292.24	3,818.89	774.49	-1,893.65	2,045.91	1.50	-1.50	0.00	
4,500.00	24.87	292.24	3,909.05	790.86	-1,933.67	2,089.15	1.50	-1.50	0.00	
4,600.00	23.37	292.24	4,000.32	806.32	-1,971.49	2,130.01	1.50	-1.50	0.00	
4,700.00	21.87	292.24	4,092.63	820.88	-2,007.08	2,168.46	1.50	-1.50	0.00	
4,800.00	20.37	292.24	4,185.91	834.52	-2,040.43	2,204.49	1.50	-1.50	0.00	
4,900.00	18.87	292.24	4,280.10	847.23	-2,071.50	2,238.06	1.50	-1.50	0.00	
5,000.00	17.37	292.24	4,375.14	859.00	-2,100.28	2,269.15	1.50	-1.50	0.00	
5,100.00	15.87	292.24	4,470.97	869.83	-2,126.75	2,297.75	1.50	-1.50	0.00	
5,200.00	14.37	292.24	4,567.50	879.70	-2,150.89	2,323.83	1.50	-1.50	0.00	
5,300.00	12.87	292.24	4,664.69	888.61	-2,172.68	2,347.37	1.50	-1.50	0.00	
5,400.00	11.37	292.24	4,762.46	896.56	-2,192.10	2,368.36	1.50	-1.50	0.00	
5,491.12	10.00	292.24	4,852.00	902.95	-2,207.74	2,385.25	1.50	-1.50	0.00	
Start DLS 2.00 TFO 180.00 - KMGAS										
5,498.61	9.85	292.24	4,859.38	903.44	-2,208.94	2,386.54	2.00	-2.00	0.00	
GM 511-8 BTV										
5,500.00	9.82	292.24	4,860.74	903.53	-2,209.15	2,386.78	2.00	-2.00	0.00	
5,600.00	7.82	292.24	4,959.56	909.33	-2,223.35	2,402.12	2.00	-2.00	0.00	
5,700.00	5.82	292.24	5,058.84	913.83	-2,234.34	2,414.00	2.00	-2.00	0.00	
5,800.00	3.82	292.24	5,158.48	917.01	-2,242.12	2,422.40	2.00	-2.00	0.00	
5,900.00	1.82	292.24	5,258.36	918.88	-2,246.68	2,427.33	2.00	-2.00	0.00	
5,991.12	0.00	0.00	5,349.47	919.43	-2,248.02	2,428.78	2.00	-2.00	74.36	
Start 1278.53 hold at 5991.12 MD										
6,000.00	0.00	0.00	5,358.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,458.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
6,200.00	0.00	0.00	5,558.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
6,300.00	0.00	0.00	5,658.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
6,400.00	0.00	0.00	5,758.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
6,500.00	0.00	0.00	5,858.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
6,600.00	0.00	0.00	5,958.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,058.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
6,773.66	0.00	0.00	6,132.00	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
CME0										
6,800.00	0.00	0.00	6,158.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,258.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,358.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,458.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
7,119.66	0.00	0.00	6,478.00	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
RLNS										
7,200.00	0.00	0.00	6,558.34	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
7,269.66	0.00	0.00	6,628.00	919.43	-2,248.02	2,428.78	0.00	0.00	0.00	
TD at 7269.66 - TD - GM 511-8 PBHL										

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 511-8 - Slot GM 511-8 (B9)
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 511-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 23Oct2018 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 511-8 BTV	0.00	0.00	4,852.00	919.43	-2,248.02	1,602,150.11	2,255,150.18	39.4569777	-108.1383434
- plan misses target center by 42.87usft at 5498.61usft MD (4859.38 TVD, 903.44 N, -2208.94 E)									
- Circle (radius 50.00)									
GM 511-8 PBHL	0.00	0.00	6,628.00	919.43	-2,248.02	1,602,150.11	2,255,150.18	39.4569777	-108.1383434
- plan misses target center by 0.01usft at 7269.66usft MD (6628.00 TVD, 919.43 N, -2248.02 E)									
- Point									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	970.73	13 3/8" Casing @ 1000' MD	13.37	17.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,275.85	2,039.00	G SAND		0.00	0.00
2,396.36	2,139.00	G SAND BASE		0.00	0.00
2,818.24	2,489.07	FRUN		0.00	0.00
4,205.62	3,647.00	MVRD		0.00	0.00
4,353.11	3,777.00	WFRK/UMVRD		0.00	0.00
5,491.12	4,852.00	KMVGAS		0.00	0.00
6,773.66	6,132.00	CME0		0.00	0.00
7,119.66	6,478.00	RLNS		0.00	0.00
7,269.66	6,628.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
135.00	135.00	0.00	0.00	Start Build 3.00
1,265.79	1,200.87	123.07	-300.90	Start 2630.43 hold at 1265.79 MD
3,896.22	3,383.55	678.79	-1,659.66	Start Drop -1.50
5,491.12	4,852.00	902.95	-2,207.74	Start DLS 2.00 TFO 180.00
5,991.12	5,349.47	919.43	-2,248.02	Start 1278.53 hold at 5991.12 MD
7,269.66	6,628.00	919.43	-2,248.02	TD at 7269.66