

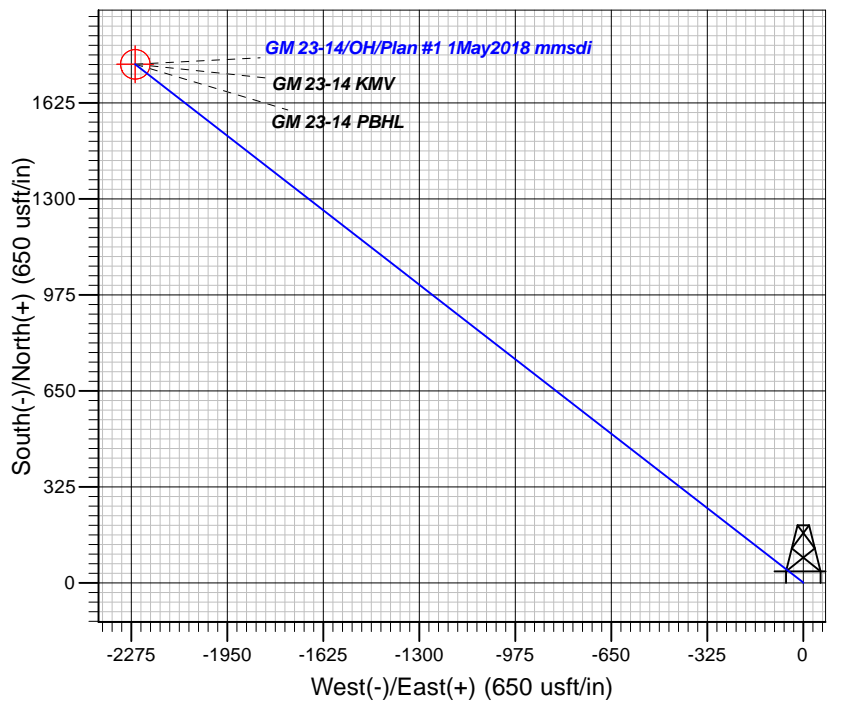
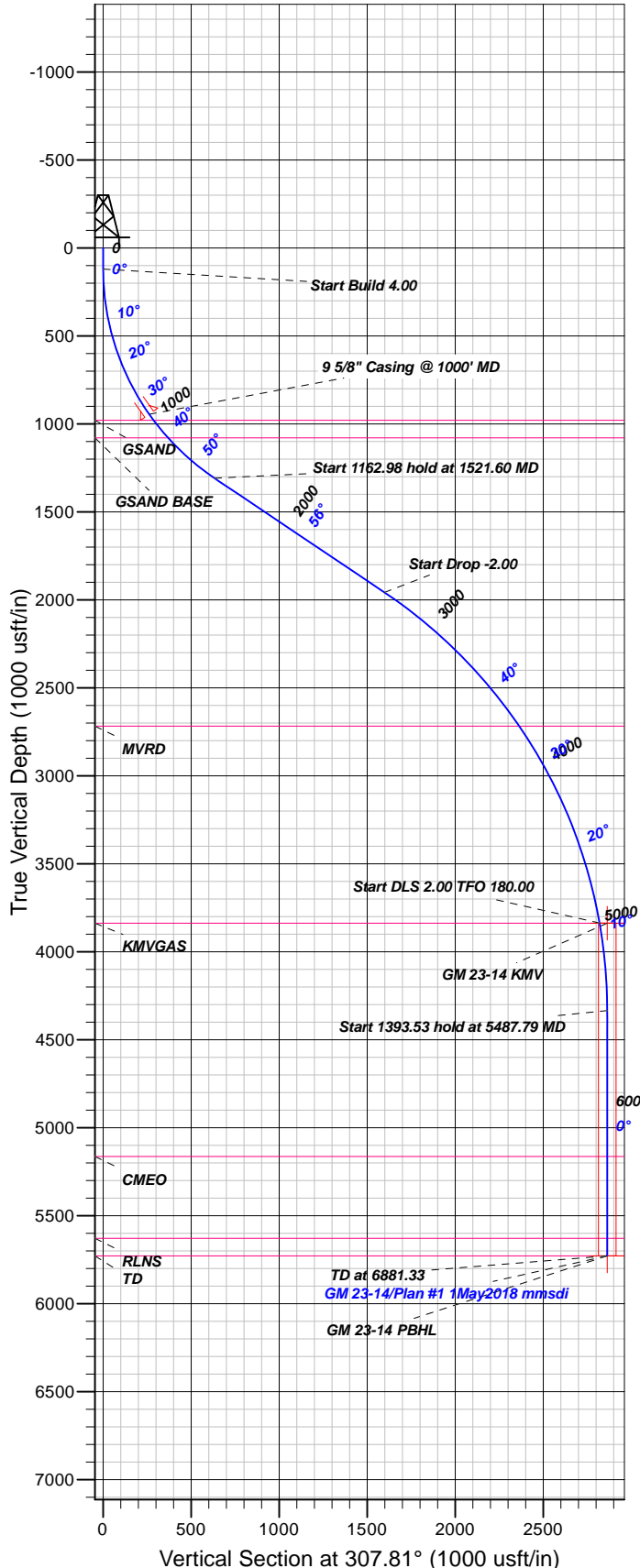


Azimuths to True North  
Magnetic North: 9.42°

Magnetic Field  
Strength: 51711.2snT  
Dip Angle: 65.65°  
Date: 5/1/2018  
Model: HDGM

## Well Details: GM 23-14

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1592890.50	2272786.40	39.4329551	-108.0749784	GM 23-14 (A11)



## FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
979.00	1041.20	GSAND
1079.00	1170.73	GSAND BASE
2717.00	3769.06	MVRD
3837.00	4987.79	KMGAS
5163.00	6316.33	CMEO
5628.00	6781.33	RLNS
5728.00	6881.33	TD

Plan: Plan #1 1May2018 mmsdi

13:28, May 07 2018  
Created By: Mel Mireles

PROJECT DETAILS: Garfield County, CO NAD83

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
945.68	1000.00	5/8" Casing @ 1000' MD	9.62

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	
3	1521.60	56.06	307.81	1308.41	387.89	-499.91	4.00	307.81	632.74	
4	2684.58	56.06	307.81	1957.65	979.38	-1262.22	0.00	0.00	1597.62	
5	4987.79	10.00	307.81	3837.00	1728.47	-2227.65	2.00	180.00	2819.58	
6	5487.79	0.00	0.00	4334.47	1755.15	-2262.04	2.00	180.00	2863.10	
7	6881.33	0.00	0.00	5728.00	1755.15	-2262.04	0.00	0.00	2863.10	GM 23-14 PBHL

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 23-14 KMV	3837.00	1755.15	-2262.04	1594709.052270575.01	39.4329551	-108.0829875	-108.0829875	Circle (Radius: 50.00)
- plan misses target center by 42.87usft at 4995.26usft MD (3844.35 TVD, 1729.26 N, -2228.67 E)								
GM 23-14 PBHL	5728.00	1755.15	-2262.04	1594709.052270575.01	39.4329551	-108.0829875	-108.0829875	Point
- plan misses target center by 0.01usft at 6881.33usft MD (5728.00 TVD, 1755.15 N, -2262.04 E)								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**GM 34-14 Pad**

**GM 23-14 - Slot GM 23-14 (A11)**

**OH**

**Plan: Plan #1 1May2018 mmsdi**

## **Standard Planning Report**

**07 May, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 23-14 - Slot GM 23-14 (A11)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Site:</b>	GM 34-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 23-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 1May2018 mmsdi		

<b>Project</b>	Garfield County, CO NAD83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

<b>Site</b>	GM 34-14 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,592,890.50 usft	<b>Latitude:</b> 39.4329552
<b>From:</b> Map		<b>Easting:</b>	2,272,786.40 usft	<b>Longitude:</b> -108.0749784
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in	<b>Grid Convergence:</b> -1.62 °

<b>Well</b>	GM 23-14 - Slot GM 23-14 (A11)			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,592,890.50 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,272,786.40 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	5,172.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	5/1/2018	9.42	65.65	51,711

<b>Design</b>	Plan #1 1May2018 mmsdi			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	307.81

<b>Plan Sections</b>										
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	
1,521.60	56.06	307.81	1,308.41	387.89	-499.91	4.00	4.00	0.00	307.81	
2,684.58	56.06	307.81	1,957.65	979.38	-1,262.22	0.00	0.00	0.00	0.00	
4,987.79	10.00	307.81	3,837.00	1,728.47	-2,227.65	2.00	-2.00	0.00	180.00	
5,487.79	0.00	0.00	4,334.47	1,755.15	-2,262.04	2.00	-2.00	10.44	180.00	
6,881.33	0.00	0.00	5,728.00	1,755.15	-2,262.04	0.00	0.00	0.00	0.00	GM 23-14 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 23-14 - Slot GM 23-14 (A11)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Site:</b>	GM 34-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 23-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 1May2018 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
200.00	3.20	307.81	199.96	1.37	-1.76	2.23	4.00	4.00	0.00
300.00	7.20	307.81	299.53	6.92	-8.92	11.29	4.00	4.00	0.00
400.00	11.20	307.81	398.22	16.72	-21.55	27.28	4.00	4.00	0.00
500.00	15.20	307.81	495.56	30.72	-39.59	50.11	4.00	4.00	0.00
600.00	19.20	307.81	591.07	48.84	-62.95	79.67	4.00	4.00	0.00
700.00	23.20	307.81	684.28	71.01	-91.51	115.83	4.00	4.00	0.00
800.00	27.20	307.81	774.74	97.10	-125.15	158.40	4.00	4.00	0.00
900.00	31.20	307.81	862.02	127.00	-163.68	207.18	4.00	4.00	0.00
1,000.00	35.20	307.81	945.68	160.56	-206.93	261.92	4.00	4.00	0.00
9 5/8" Casing @ 1000' MD									
1,041.20	36.85	307.81	979.00	175.42	-226.08	286.15	4.00	4.00	0.00
GSAND									
1,100.00	39.20	307.81	1,025.32	197.62	-254.69	322.37	4.00	4.00	0.00
1,170.73	42.03	307.81	1,079.00	225.84	-291.06	368.41	4.00	4.00	0.00
GSAND BASE									
1,200.00	43.20	307.81	1,100.54	237.99	-306.72	388.22	4.00	4.00	0.00
1,300.00	47.20	307.81	1,170.99	281.48	-362.77	459.17	4.00	4.00	0.00
1,400.00	51.20	307.81	1,236.32	327.88	-422.57	534.85	4.00	4.00	0.00
1,500.00	55.20	307.81	1,296.21	376.95	-485.82	614.91	4.00	4.00	0.00
1,521.60	56.06	307.81	1,308.41	387.89	-499.91	632.74	4.00	4.00	0.00
1,600.00	56.06	307.81	1,352.17	427.76	-551.29	697.78	0.00	0.00	0.00
1,700.00	56.06	307.81	1,408.00	478.62	-616.84	780.75	0.00	0.00	0.00
1,800.00	56.06	307.81	1,463.82	529.48	-682.39	863.71	0.00	0.00	0.00
1,900.00	56.06	307.81	1,519.65	580.34	-747.94	946.68	0.00	0.00	0.00
2,000.00	56.06	307.81	1,575.48	631.20	-813.49	1,029.65	0.00	0.00	0.00
2,100.00	56.06	307.81	1,631.30	682.06	-879.04	1,112.61	0.00	0.00	0.00
2,200.00	56.06	307.81	1,687.13	732.92	-944.59	1,195.58	0.00	0.00	0.00
2,300.00	56.06	307.81	1,742.96	783.78	-1,010.13	1,278.55	0.00	0.00	0.00
2,400.00	56.06	307.81	1,798.78	834.64	-1,075.68	1,361.51	0.00	0.00	0.00
2,500.00	56.06	307.81	1,854.61	885.50	-1,141.23	1,444.48	0.00	0.00	0.00
2,600.00	56.06	307.81	1,910.43	936.36	-1,206.78	1,527.45	0.00	0.00	0.00
2,684.58	56.06	307.81	1,957.65	979.38	-1,262.22	1,597.62	0.00	0.00	0.00
2,700.00	55.76	307.81	1,966.30	987.21	-1,272.31	1,610.39	2.00	-2.00	0.00
2,800.00	53.76	307.81	2,024.00	1,037.27	-1,336.83	1,692.05	2.00	-2.00	0.00
2,900.00	51.76	307.81	2,084.52	1,086.07	-1,399.72	1,771.66	2.00	-2.00	0.00
3,000.00	49.76	307.81	2,147.78	1,133.54	-1,460.91	1,849.10	2.00	-2.00	0.00
3,100.00	47.76	307.81	2,213.70	1,179.63	-1,520.31	1,924.29	2.00	-2.00	0.00
3,200.00	45.76	307.81	2,282.21	1,224.29	-1,577.86	1,997.13	2.00	-2.00	0.00
3,300.00	43.76	307.81	2,353.21	1,267.45	-1,633.48	2,067.53	2.00	-2.00	0.00
3,400.00	41.76	307.81	2,426.64	1,309.06	-1,687.12	2,135.42	2.00	-2.00	0.00
3,500.00	39.76	307.81	2,502.38	1,349.08	-1,738.69	2,200.70	2.00	-2.00	0.00
3,600.00	37.76	307.81	2,580.36	1,387.45	-1,788.15	2,263.29	2.00	-2.00	0.00
3,700.00	35.76	307.81	2,660.48	1,424.13	-1,835.42	2,323.13	2.00	-2.00	0.00
3,769.06	34.37	307.81	2,717.00	1,448.46	-1,866.77	2,362.81	2.00	-2.00	0.00
MVRD									
3,800.00	33.76	307.81	2,742.63	1,459.08	-1,880.46	2,380.14	2.00	-2.00	0.00
3,900.00	31.76	307.81	2,826.72	1,492.25	-1,923.21	2,434.24	2.00	-2.00	0.00
4,000.00	29.76	307.81	2,912.66	1,523.59	-1,963.61	2,485.37	2.00	-2.00	0.00
4,100.00	27.76	307.81	3,000.32	1,553.08	-2,001.61	2,533.48	2.00	-2.00	0.00
4,200.00	25.76	307.81	3,089.61	1,580.68	-2,037.18	2,578.50	2.00	-2.00	0.00
4,300.00	23.76	307.81	3,180.41	1,606.35	-2,070.26	2,620.37	2.00	-2.00	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 23-14 - Slot GM 23-14 (A11)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Site:</b>	GM 34-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 23-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 1May2018 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)
4,400.00	21.76	307.81	3,272.62	1,630.06	-2,100.82	2,659.05	2.00	-2.00	0.00
4,500.00	19.76	307.81	3,366.13	1,651.78	-2,128.82	2,694.49	2.00	-2.00	0.00
4,600.00	17.76	307.81	3,460.81	1,671.49	-2,154.22	2,726.64	2.00	-2.00	0.00
4,700.00	15.76	307.81	3,556.56	1,689.17	-2,177.00	2,755.47	2.00	-2.00	0.00
4,800.00	13.76	307.81	3,653.26	1,704.78	-2,197.12	2,780.93	2.00	-2.00	0.00
4,900.00	11.76	307.81	3,750.79	1,718.31	-2,214.56	2,803.01	2.00	-2.00	0.00
4,987.79	10.00	307.81	3,837.00	1,728.47	-2,227.65	2,819.58	2.00	-2.00	0.00
<b>KMVGAS</b>									
4,995.26	9.85	307.81	3,844.35	1,729.26	-2,228.67	2,820.87	2.00	-2.00	0.00
<b>GM 23-14 KMV</b>									
5,000.00	9.76	307.81	3,849.03	1,729.75	-2,229.30	2,821.67	2.00	-2.00	0.00
5,100.00	7.76	307.81	3,947.86	1,739.09	-2,241.33	2,836.90	2.00	-2.00	0.00
5,200.00	5.76	307.81	4,047.16	1,746.30	-2,250.62	2,848.66	2.00	-2.00	0.00
5,300.00	3.76	307.81	4,146.81	1,751.38	-2,257.17	2,856.95	2.00	-2.00	0.00
5,400.00	1.76	307.81	4,246.69	1,754.33	-2,260.97	2,861.76	2.00	-2.00	0.00
5,487.79	0.00	0.00	4,334.47	1,755.15	-2,262.04	2,863.10	2.00	-2.00	59.45
5,500.00	0.00	0.00	4,346.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
5,600.00	0.00	0.00	4,446.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
5,700.00	0.00	0.00	4,546.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
5,800.00	0.00	0.00	4,646.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
5,900.00	0.00	0.00	4,746.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,000.00	0.00	0.00	4,846.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,100.00	0.00	0.00	4,946.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,200.00	0.00	0.00	5,046.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,300.00	0.00	0.00	5,146.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,316.33	0.00	0.00	5,163.00	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
<b>CMEO</b>									
6,400.00	0.00	0.00	5,246.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,500.00	0.00	0.00	5,346.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,600.00	0.00	0.00	5,446.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,700.00	0.00	0.00	5,546.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,781.33	0.00	0.00	5,628.00	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
<b>RLNS</b>									
6,800.00	0.00	0.00	5,646.67	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
6,881.33	0.00	0.00	5,728.00	1,755.15	-2,262.04	2,863.10	0.00	0.00	0.00
<b>TD - GM 23-14 PBHL</b>									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GM 23-14 KMV	0.00	0.00	3,837.00	1,755.15	-2,262.04	1,594,709.05	2,270,575.01	39.4377737	-108.0829875
- hit/miss target									
- Shape									
- plan misses target center by 42.87usft at 4995.26usft MD (3844.35 TVD, 1729.26 N, -2228.67 E)									
- Circle (radius 50.00)									
GM 23-14 PBHL	0.00	0.00	5,728.00	1,755.15	-2,262.04	1,594,709.05	2,270,575.01	39.4377737	-108.0829875
- hit/miss target									
- Shape									
- plan misses target center by 0.01usft at 6881.33usft MD (5728.00 TVD, 1755.15 N, -2262.04 E)									
- Point									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 23-14 - Slot GM 23-14 (A11)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5172' & RKB 24' @ 5196.00usft
<b>Site:</b>	GM 34-14 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 23-14	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 1May2018 mmsdi		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	945.68	9 5/8" Casing @ 1000' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,041.20	979.00	GSAND		0.00	0.00	
1,170.73	1,079.00	GSAND BASE		0.00	0.00	
3,769.06	2,717.00	MVRD		0.00	0.00	
4,987.79	3,837.00	KMVGAS		0.00	0.00	
6,316.33	5,163.00	CME0		0.00	0.00	
6,781.33	5,628.00	RLNS		0.00	0.00	
6,881.33	5,728.00	TD		0.00	0.00	