

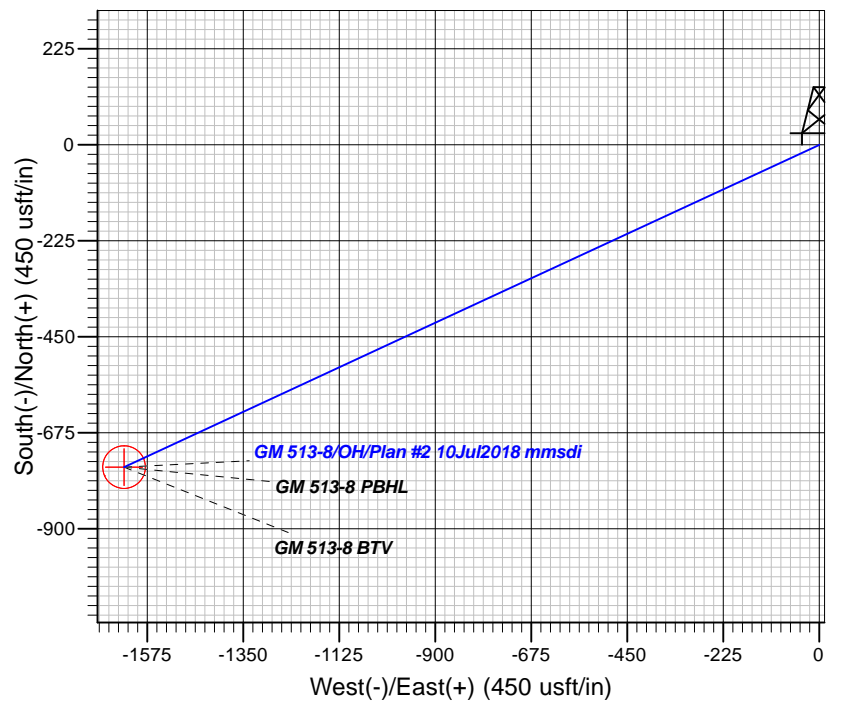
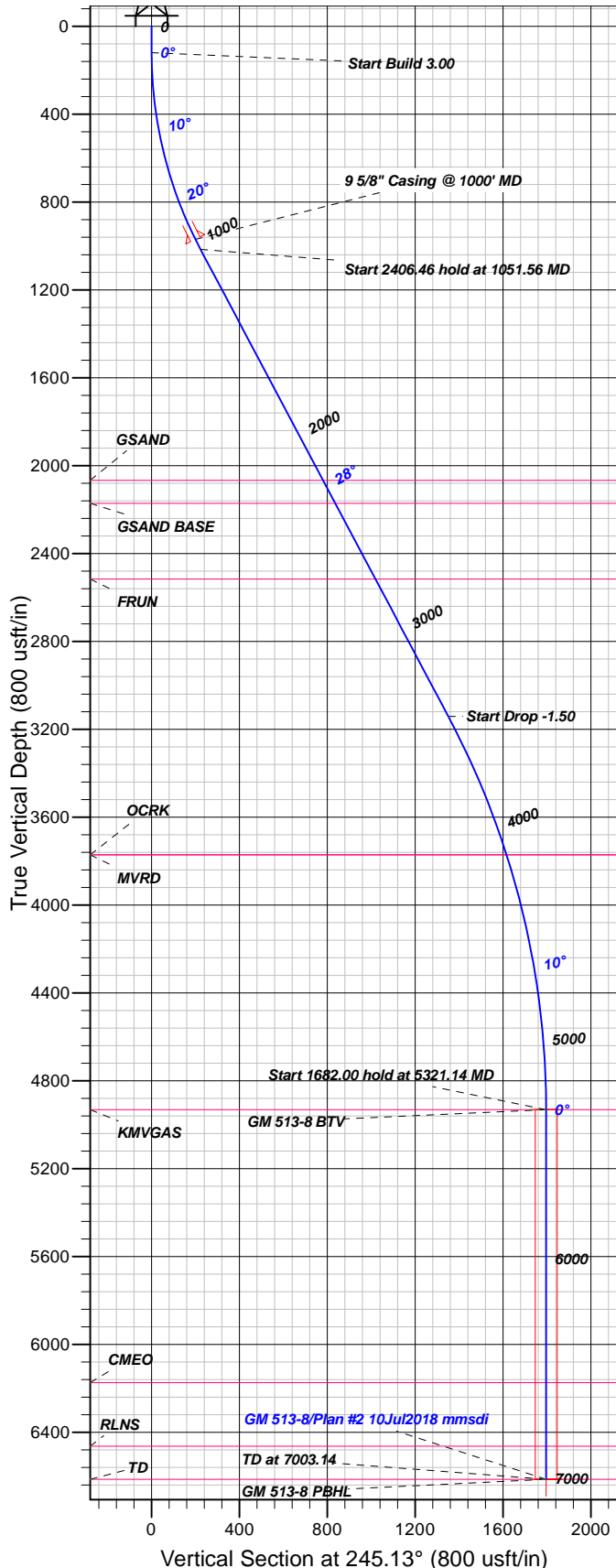


Azimuths to True North  
Magnetic North: 9.52°

Magnetic Field  
Strength: 51679.1snT  
Dip Angle: 65.68°  
Date: 6/21/2018  
Model: HDGM

## Well Details: GM 513-8

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1599856.09	2256688.69	39.4508047	-108.1326615	GM 513-8 (B8)



### FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
2066.00	2241.24	GSAND
2171.00	2360.10	GSAND BASE
2516.00	2750.64	FRUN
3771.00	4142.52	MVRD
3771.00	4142.52	OCRK
4931.00	5321.14	KMVGAS
6173.00	6563.14	CMEO
6463.00	6853.14	RLNS
6613.00	7003.14	TD

Plan: Plan #2 10Jul2018 mmsdi

16:42, July 10 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
969.19	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	1051.56	27.95	245.13	1015.06	-93.67	-202.07	3.00	245.13	222.72	
4	3458.02	27.95	245.13	3140.88	-567.97	-1225.27	0.00	0.00	1350.51	
5	5321.14	0.00	0.00	4931.00	-755.30	-1629.41	1.50	180.00	1795.95	GM 513-8 BTV
6	7003.14	0.00	0.00	6613.00	-755.30	-1629.41	0.00	0.00	1795.95	GM 513-8 PBHL

### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 513-8 BTV	4931.00	-755.30	-1629.41	1599148.32	2255038.08	39.4487309	-108.1384315	Circle (Radius: 50.00)
- plan hits target center								
GM 513-8 PBHL	6613.00	-755.30	-1629.41	1599148.32	2255038.08	39.4487309	-108.1384315	Point
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**GV 1-8 Pad**

**GM 513-8 - Slot GM 513-8 (B8)**

**OH**

**Plan: Plan #2 10Jul2018 mmsdi**

## **Standard Planning Report**

**10 July, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 513-8 - Slot GM 513-8 (B8)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6280' & RKB 24' @ 6304.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6280' & RKB 24' @ 6304.00usft
<b>Site:</b>	GV 1-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 513-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2 10Jul2018 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>	GV 1-8 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,599,836.41 usft	<b>Latitude:</b> 39.4507498
<b>From:</b> Map		<b>Easting:</b>	2,256,677.81 usft	<b>Longitude:</b> -108.1326980
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in	<b>Grid Convergence:</b> -1.66 °

<b>Well</b>	GM 513-8 - Slot GM 513-8 (B8)			
<b>Well Position</b>	<b>+N/-S</b>	19.99 usft	<b>Northing:</b>	1,599,856.09 usft
	<b>+E/-W</b>	10.31 usft	<b>Easting:</b>	2,256,688.69 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	6,280.00 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	6/21/2018	9.52	65.68	51,679

<b>Design</b>	Plan #2 10Jul2018 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	245.13

<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	
1,051.56	27.95	245.13	1,015.06	-93.67	-202.07	3.00	3.00	0.00	245.13	
3,458.02	27.95	245.13	3,140.88	-567.97	-1,225.27	0.00	0.00	0.00	0.00	
5,321.14	0.00	0.00	4,931.00	-755.30	-1,629.41	1.50	-1.50	0.00	180.00	GM 513-8 BTV
7,003.14	0.00	0.00	6,613.00	-755.30	-1,629.41	0.00	0.00	0.00	0.00	GM 513-8 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 513-8 - Slot GM 513-8 (B8)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6280' & RKB 24' @ 6304.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6280' & RKB 24' @ 6304.00usft
<b>Site:</b>	GV 1-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 513-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2 10Jul2018 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
<b>Start Build 3.00</b>									
200.00	2.40	245.13	199.98	-0.70	-1.52	1.68	3.00	3.00	0.00
300.00	5.40	245.13	299.73	-3.56	-7.69	8.48	3.00	3.00	0.00
400.00	8.40	245.13	399.00	-8.62	-18.59	20.49	3.00	3.00	0.00
500.00	11.40	245.13	497.50	-15.85	-34.19	37.68	3.00	3.00	0.00
600.00	14.40	245.13	594.96	-25.23	-54.44	60.00	3.00	3.00	0.00
700.00	17.40	245.13	691.13	-36.75	-79.29	87.39	3.00	3.00	0.00
800.00	20.40	245.13	785.72	-50.38	-108.67	119.78	3.00	3.00	0.00
900.00	23.40	245.13	878.50	-66.06	-142.51	157.08	3.00	3.00	0.00
1,000.00	26.40	245.13	969.19	-83.76	-180.71	199.18	3.00	3.00	0.00
<b>9 5/8" Casing @ 1000' MD</b>									
1,051.56	27.95	245.13	1,015.06	-93.67	-202.07	222.72	3.00	3.00	0.00
<b>Start 2406.46 hold at 1051.56 MD</b>									
1,100.00	27.95	245.13	1,057.85	-103.21	-222.66	245.42	0.00	0.00	0.00
1,200.00	27.95	245.13	1,146.19	-122.92	-265.18	292.29	0.00	0.00	0.00
1,300.00	27.95	245.13	1,234.53	-142.63	-307.70	339.15	0.00	0.00	0.00
1,400.00	27.95	245.13	1,322.86	-162.34	-350.22	386.02	0.00	0.00	0.00
1,500.00	27.95	245.13	1,411.20	-182.05	-392.74	432.88	0.00	0.00	0.00
1,600.00	27.95	245.13	1,499.54	-201.76	-435.26	479.75	0.00	0.00	0.00
1,700.00	27.95	245.13	1,587.88	-221.47	-477.78	526.61	0.00	0.00	0.00
1,800.00	27.95	245.13	1,676.22	-241.18	-520.30	573.48	0.00	0.00	0.00
1,900.00	27.95	245.13	1,764.56	-260.89	-562.82	620.34	0.00	0.00	0.00
2,000.00	27.95	245.13	1,852.89	-280.60	-605.34	667.21	0.00	0.00	0.00
2,100.00	27.95	245.13	1,941.23	-300.31	-647.86	714.07	0.00	0.00	0.00
2,200.00	27.95	245.13	2,029.57	-320.02	-690.37	760.94	0.00	0.00	0.00
2,241.24	27.95	245.13	2,066.00	-328.15	-707.91	780.27	0.00	0.00	0.00
<b>GSAND</b>									
2,300.00	27.95	245.13	2,117.91	-339.73	-732.89	807.80	0.00	0.00	0.00
2,360.10	27.95	245.13	2,171.00	-351.57	-758.45	835.97	0.00	0.00	0.00
<b>GSAND BASE</b>									
2,400.00	27.95	245.13	2,206.25	-359.44	-775.41	854.67	0.00	0.00	0.00
2,500.00	27.95	245.13	2,294.59	-379.15	-817.93	901.53	0.00	0.00	0.00
2,600.00	27.95	245.13	2,382.92	-398.86	-860.45	948.40	0.00	0.00	0.00
2,700.00	27.95	245.13	2,471.26	-418.56	-902.97	995.26	0.00	0.00	0.00
2,750.64	27.95	245.13	2,516.00	-428.55	-924.50	1,019.00	0.00	0.00	0.00
<b>FRUN</b>									
2,800.00	27.95	245.13	2,559.60	-438.27	-945.49	1,042.13	0.00	0.00	0.00
2,900.00	27.95	245.13	2,647.94	-457.98	-988.01	1,089.00	0.00	0.00	0.00
3,000.00	27.95	245.13	2,736.28	-477.69	-1,030.53	1,135.86	0.00	0.00	0.00
3,100.00	27.95	245.13	2,824.62	-497.40	-1,073.05	1,182.73	0.00	0.00	0.00
3,200.00	27.95	245.13	2,912.95	-517.11	-1,115.57	1,229.59	0.00	0.00	0.00
3,300.00	27.95	245.13	3,001.29	-536.82	-1,158.09	1,276.46	0.00	0.00	0.00
3,400.00	27.95	245.13	3,089.63	-556.53	-1,200.60	1,323.32	0.00	0.00	0.00
3,458.02	27.95	245.13	3,140.88	-567.97	-1,225.27	1,350.51	0.00	0.00	0.00
<b>Start Drop -1.50</b>									
3,500.00	27.32	245.13	3,178.08	-576.15	-1,242.94	1,369.98	1.50	-1.50	0.00
3,600.00	25.82	245.13	3,267.52	-594.96	-1,283.51	1,414.70	1.50	-1.50	0.00
3,700.00	24.32	245.13	3,358.09	-612.78	-1,321.95	1,457.07	1.50	-1.50	0.00
3,800.00	22.82	245.13	3,449.75	-629.59	-1,358.23	1,497.05	1.50	-1.50	0.00
3,900.00	21.32	245.13	3,542.42	-645.39	-1,392.31	1,534.62	1.50	-1.50	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 513-8 - Slot GM 513-8 (B8)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6280' & RKB 24' @ 6304.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6280' & RKB 24' @ 6304.00usft
<b>Site:</b>	GV 1-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 513-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2 10Jul2018 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	19.82	245.13	3,636.05	-660.17	-1,424.18	1,569.75	1.50	-1.50	0.00
4,100.00	18.32	245.13	3,730.56	-673.91	-1,453.82	1,602.42	1.50	-1.50	0.00
4,142.52	17.68	245.13	3,771.00	-679.43	-1,465.74	1,615.56	1.50	-1.50	0.00
<b>OCRK - MVRD</b>									
4,200.00	16.82	245.13	3,825.89	-686.60	-1,481.20	1,632.60	1.50	-1.50	0.00
4,300.00	15.32	245.13	3,921.98	-698.24	-1,506.31	1,660.27	1.50	-1.50	0.00
4,400.00	13.82	245.13	4,018.76	-708.82	-1,529.13	1,685.42	1.50	-1.50	0.00
4,500.00	12.32	245.13	4,116.17	-718.32	-1,549.64	1,708.03	1.50	-1.50	0.00
4,600.00	10.82	245.13	4,214.14	-726.76	-1,567.83	1,728.08	1.50	-1.50	0.00
4,700.00	9.32	245.13	4,312.60	-734.11	-1,583.69	1,745.56	1.50	-1.50	0.00
4,800.00	7.82	245.13	4,411.48	-740.37	-1,597.21	1,760.46	1.50	-1.50	0.00
4,900.00	6.32	245.13	4,510.72	-745.55	-1,608.37	1,772.76	1.50	-1.50	0.00
5,000.00	4.82	245.13	4,610.24	-749.63	-1,617.17	1,782.46	1.50	-1.50	0.00
5,100.00	3.32	245.13	4,709.99	-752.61	-1,623.60	1,789.55	1.50	-1.50	0.00
5,200.00	1.82	245.13	4,809.88	-754.49	-1,627.67	1,794.03	1.50	-1.50	0.00
5,300.00	0.32	245.13	4,909.86	-755.28	-1,629.36	1,795.90	1.50	-1.50	0.00
5,321.14	0.00	0.00	4,931.00	-755.30	-1,629.41	1,795.95	1.50	-1.50	543.44
<b>Start 1682.00 hold at 5321.14 MD - KMGAS - GM 513-8 BTV</b>									
5,400.00	0.00	0.00	5,009.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
5,500.00	0.00	0.00	5,109.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
5,600.00	0.00	0.00	5,209.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
5,700.00	0.00	0.00	5,309.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
5,800.00	0.00	0.00	5,409.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
5,900.00	0.00	0.00	5,509.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,000.00	0.00	0.00	5,609.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,100.00	0.00	0.00	5,709.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,200.00	0.00	0.00	5,809.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,300.00	0.00	0.00	5,909.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,400.00	0.00	0.00	6,009.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,500.00	0.00	0.00	6,109.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,563.14	0.00	0.00	6,173.00	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
<b>CMEO</b>									
6,600.00	0.00	0.00	6,209.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,700.00	0.00	0.00	6,309.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,800.00	0.00	0.00	6,409.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
6,853.14	0.00	0.00	6,463.00	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
<b>RLNS</b>									
6,900.00	0.00	0.00	6,509.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
7,000.00	0.00	0.00	6,609.86	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
7,003.14	0.00	0.00	6,613.00	-755.30	-1,629.41	1,795.95	0.00	0.00	0.00
<b>TD at 7003.14 - TD - GM 513-8 PBHL</b>									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 513-8 - Slot GM 513-8 (B8)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6280' & RKB 24' @ 6304.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6280' & RKB 24' @ 6304.00usft
<b>Site:</b>	GV 1-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 513-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2 10Jul2018 mmsdi		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GM 513-8 BTV - hit/miss target - Shape	0.00	0.00	4,931.00	-755.30	-1,629.41	1,599,148.32	2,255,038.08	39.4487309	-108.1384316
GM 513-8 PBHL - plan hits target center - Circle (radius 50.00)	0.00	0.00	6,613.00	-755.30	-1,629.41	1,599,148.32	2,255,038.08	39.4487309	-108.1384316

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	969.19	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,241.24	2,066.00	GSAND		0.00	0.00
2,360.10	2,171.00	GSAND BASE		0.00	0.00
2,750.64	2,516.00	FRUN		0.00	0.00
4,142.52	3,771.00	OCRK		0.00	0.00
4,142.52	3,771.00	MVRD		0.00	0.00
5,321.14	4,931.00	KMVGAS		0.00	0.00
6,563.14	6,173.00	CME0		0.00	0.00
6,853.14	6,463.00	RLNS		0.00	0.00
7,003.14	6,613.00	TD		0.00	0.00

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
1,051.56	1,015.06	-93.67	-202.07	Start 2406.46 hold at 1051.56 MD
3,458.02	3,140.88	-567.97	-1,225.27	Start Drop -1.50
5,321.14	4,931.00	-755.30	-1,629.41	Start 1682.00 hold at 5321.14 MD
7,003.14	6,613.00	-755.30	-1,629.41	TD at 7003.14