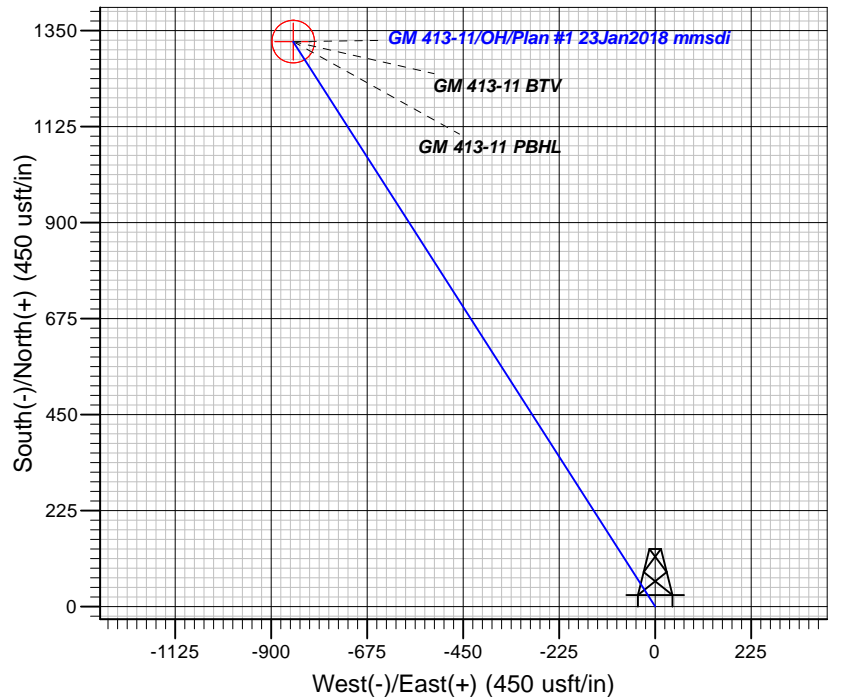
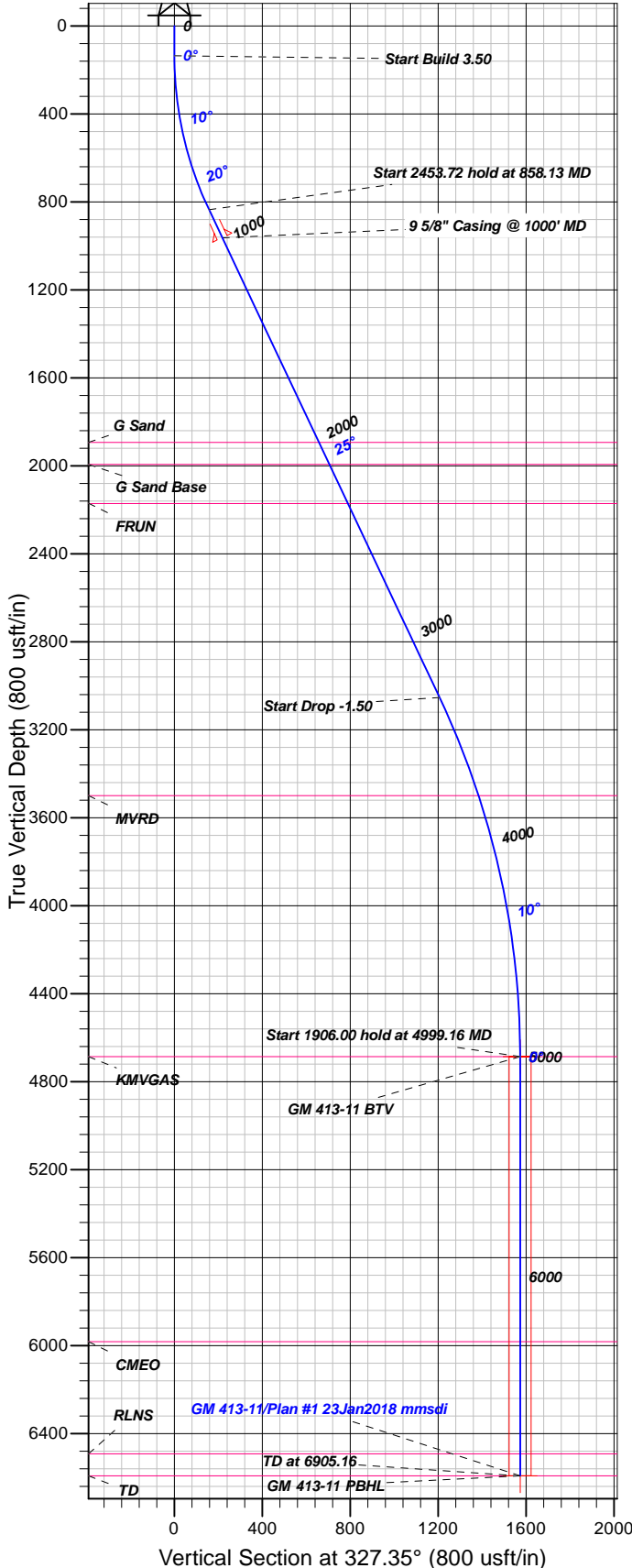




Azimuths to True North  
Magnetic North: 9.47°  
  
Magnetic Field  
Strength: 51724.2snT  
Dip Angle: 65.70°  
Date: 1/23/2018  
Model: HDGM

## Well Details: GM 413-11

GL 5793' & RKB 24' @ 5817.00usft  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.00 0.00 1599236.00 2271917.50 39.4503020 -108.0786910 GM 413-11



## FORMATION TOP DETAILS

TVDPth	MDPath	Formation
1893.00	2028.65	G Sand
1993.00	2139.26	G Sand Base
2171.00	2336.16	FRUN
3499.00	3792.18	MVRD
4686.00	4999.16	KMGAS
5982.00	6295.16	CMEO
6492.00	6805.16	RLNS
6592.00	6905.16	TD

Plan: Plan #1 23Jan2018 mmsdi

10:17, January 30 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
963.09	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	135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	
3	858.13	25.31	327.35	834.84	132.31	-84.78	3.50	327.35	157.14	
4	3311.85	25.31	327.35	3053.03	1015.54	-650.71	0.00	0.00	1206.13	
5	4999.16	0.00	0.00	4686.00	1324.25	-848.53	1.50	180.00	1572.78	GM 413-11 BTV
6	6905.16	0.00	0.00	6592.00	1324.25	-848.53	0.00	0.00	1572.78	GM 413-11 PBHL

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 413-11 BTV	4686.00	1324.25	-848.53	1600583.80	2271106.90	39.4539376	-108.0816960	Circle (Radius: 50.00)
- plan hits target center								
GM 413-11 PBHL	6592.00	1324.25	-848.53	1600583.80	2271106.90	39.4539376	-108.0816960	Point
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**GR 23-11V Pad**

**GM 413-11 - Slot GM 413-11**

**OH**

**Plan: Plan #1 23Jan2018 mmsdi**

## **Standard Planning Report**

**30 January, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 413-11 - Slot GM 413-11
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5793' & RKB 24' @ 5817.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5793' & RKB 24' @ 5817.00usft
<b>Site:</b>	GR 23-11V Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 413-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 23Jan2018 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		

Site		GR 23-11V Pad			
Site Position:		Northing:	1,599,230.76 usft	Latitude:	39.4502880
From:	Map	Easting:	2,271,922.71 usft	Longitude:	-108.0786721
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.63 °

Well	GM 413-11 - Slot GM 413-11					
Well Position	+N/-S	5.09 usft	Northing:	1,599,236.00 usft	Latitude:	39.4503020
	+E/-W	-5.36 usft	Easting:	2,271,917.50 usft	Longitude:	-108.0786910
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,793.00 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	1/23/2018	9.47	65.70	51,724

<b>Design</b>	Plan #1 23Jan2018 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	327.35

<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	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
858.13	25.31	327.35	834.84	132.31	-84.78	3.50	3.50	0.00	327.35	
3,311.85	25.31	327.35	3,053.03	1,015.54	-650.71	0.00	0.00	0.00	0.00	
4,999.16	0.00	0.00	4,686.00	1,324.25	-848.53	1.50	-1.50	0.00	180.00	GM 413-11 BTV
6,905.16	0.00	0.00	6,592.00	1,324.25	-848.53	0.00	0.00	0.00	0.00	GM 413-11 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 413-11 - Slot GM 413-11
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5793' & RKB 24' @ 5817.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5793' & RKB 24' @ 5817.00usft
<b>Site:</b>	GR 23-11V Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 413-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 23Jan2018 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
<b>Start Build 3.50</b>									
200.00	2.28	327.35	199.98	1.09	-0.70	1.29	3.50	3.50	0.00
300.00	5.78	327.35	299.72	7.00	-4.48	8.31	3.50	3.50	0.00
400.00	9.28	327.35	398.84	18.02	-11.55	21.40	3.50	3.50	0.00
500.00	12.78	327.35	496.98	34.12	-21.86	40.52	3.50	3.50	0.00
600.00	16.28	327.35	593.77	55.23	-35.39	65.60	3.50	3.50	0.00
700.00	19.78	327.35	688.85	81.28	-52.08	96.54	3.50	3.50	0.00
800.00	23.28	327.35	781.86	112.17	-71.87	133.22	3.50	3.50	0.00
858.13	25.31	327.35	834.84	132.31	-84.78	157.14	3.50	3.50	0.00
<b>Start 2453.72 hold at 858.13 MD</b>									
900.00	25.31	327.35	872.69	147.38	-94.43	175.04	0.00	0.00	0.00
1,000.00	25.31	327.35	963.09	183.37	-117.50	217.79	0.00	0.00	0.00
<b>9 5/8" Casing @ 1000' MD</b>									
1,100.00	25.31	327.35	1,053.49	219.37	-140.56	260.54	0.00	0.00	0.00
1,200.00	25.31	327.35	1,143.90	255.36	-163.63	303.29	0.00	0.00	0.00
1,300.00	25.31	327.35	1,234.30	291.36	-186.69	346.04	0.00	0.00	0.00
1,400.00	25.31	327.35	1,324.70	327.35	-209.76	388.79	0.00	0.00	0.00
1,500.00	25.31	327.35	1,415.10	363.35	-232.82	431.54	0.00	0.00	0.00
1,600.00	25.31	327.35	1,505.50	399.35	-255.88	474.29	0.00	0.00	0.00
1,700.00	25.31	327.35	1,595.90	435.34	-278.95	517.04	0.00	0.00	0.00
1,800.00	25.31	327.35	1,686.30	471.34	-302.01	559.79	0.00	0.00	0.00
1,900.00	25.31	327.35	1,776.70	507.33	-325.08	602.55	0.00	0.00	0.00
2,000.00	25.31	327.35	1,867.10	543.33	-348.14	645.30	0.00	0.00	0.00
2,028.65	25.31	327.35	1,893.00	553.64	-354.75	657.54	0.00	0.00	0.00
<b>G Sand</b>									
2,100.00	25.31	327.35	1,957.50	579.32	-371.21	688.05	0.00	0.00	0.00
2,139.26	25.31	327.35	1,993.00	593.46	-380.26	704.83	0.00	0.00	0.00
<b>G Sand Base</b>									
2,200.00	25.31	327.35	2,047.91	615.32	-394.27	730.80	0.00	0.00	0.00
2,300.00	25.31	327.35	2,138.31	651.31	-417.34	773.55	0.00	0.00	0.00
2,336.16	25.31	327.35	2,171.00	664.33	-425.68	789.01	0.00	0.00	0.00
<b>FRUN</b>									
2,400.00	25.31	327.35	2,228.71	687.31	-440.40	816.30	0.00	0.00	0.00
2,500.00	25.31	327.35	2,319.11	723.31	-463.46	859.05	0.00	0.00	0.00
2,600.00	25.31	327.35	2,409.51	759.30	-486.53	901.80	0.00	0.00	0.00
2,700.00	25.31	327.35	2,499.91	795.30	-509.59	944.55	0.00	0.00	0.00
2,800.00	25.31	327.35	2,590.31	831.29	-532.66	987.31	0.00	0.00	0.00
2,900.00	25.31	327.35	2,680.71	867.29	-555.72	1,030.06	0.00	0.00	0.00
3,000.00	25.31	327.35	2,771.11	903.28	-578.79	1,072.81	0.00	0.00	0.00
3,100.00	25.31	327.35	2,861.51	939.28	-601.85	1,115.56	0.00	0.00	0.00
3,200.00	25.31	327.35	2,951.92	975.27	-624.92	1,158.31	0.00	0.00	0.00
3,300.00	25.31	327.35	3,042.32	1,011.27	-647.98	1,201.06	0.00	0.00	0.00
3,311.85	25.31	327.35	3,053.03	1,015.54	-650.71	1,206.13	0.00	0.00	0.00
<b>Start Drop -1.50</b>									
3,400.00	23.99	327.35	3,133.15	1,046.49	-670.55	1,242.89	1.50	-1.50	0.00
3,500.00	22.49	327.35	3,225.03	1,079.71	-691.83	1,282.34	1.50	-1.50	0.00
3,600.00	20.99	327.35	3,317.92	1,110.89	-711.81	1,319.38	1.50	-1.50	0.00
3,700.00	19.49	327.35	3,411.74	1,140.01	-730.47	1,353.97	1.50	-1.50	0.00
3,792.18	18.10	327.35	3,499.00	1,165.02	-746.50	1,383.66	1.50	-1.50	0.00
<b>MVRD</b>									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 413-11 - Slot GM 413-11
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5793' & RKB 24' @ 5817.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5793' & RKB 24' @ 5817.00usft
<b>Site:</b>	GR 23-11V Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 413-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 23Jan2018 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)
3,800.00	17.99	327.35	3,506.44	1,167.06	-747.80	1,386.09	1.50	-1.50	0.00
3,900.00	16.49	327.35	3,601.94	1,192.01	-763.79	1,415.72	1.50	-1.50	0.00
4,000.00	14.99	327.35	3,698.19	1,214.85	-778.42	1,442.84	1.50	-1.50	0.00
4,100.00	13.49	327.35	3,795.12	1,235.55	-791.69	1,467.44	1.50	-1.50	0.00
4,200.00	11.99	327.35	3,892.66	1,254.12	-803.59	1,489.48	1.50	-1.50	0.00
4,300.00	10.49	327.35	3,990.74	1,270.53	-814.10	1,508.97	1.50	-1.50	0.00
4,400.00	8.99	327.35	4,089.29	1,284.77	-823.23	1,525.88	1.50	-1.50	0.00
4,500.00	7.49	327.35	4,188.26	1,296.83	-830.95	1,540.21	1.50	-1.50	0.00
4,600.00	5.99	327.35	4,287.56	1,306.71	-837.28	1,551.94	1.50	-1.50	0.00
4,700.00	4.49	327.35	4,387.14	1,314.39	-842.21	1,561.07	1.50	-1.50	0.00
4,800.00	2.99	327.35	4,486.93	1,319.88	-845.73	1,567.59	1.50	-1.50	0.00
4,900.00	1.49	327.35	4,586.85	1,323.17	-847.83	1,571.49	1.50	-1.50	0.00
4,999.16	0.00	0.00	4,686.00	1,324.25	-848.53	1,572.78	1.50	-1.50	0.00
Start 1906.00 hold at 4999.16 MD - KMGAS - GM 413-11 BTW									
5,000.00	0.00	0.00	4,686.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
5,100.00	0.00	0.00	4,786.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
5,200.00	0.00	0.00	4,886.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
5,300.00	0.00	0.00	4,986.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
5,400.00	0.00	0.00	5,086.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
5,500.00	0.00	0.00	5,186.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
5,600.00	0.00	0.00	5,286.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
5,700.00	0.00	0.00	5,386.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
5,800.00	0.00	0.00	5,486.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
5,900.00	0.00	0.00	5,586.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,000.00	0.00	0.00	5,686.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,100.00	0.00	0.00	5,786.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,200.00	0.00	0.00	5,886.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,295.16	0.00	0.00	5,982.00	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
CMEO									
6,300.00	0.00	0.00	5,986.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,400.00	0.00	0.00	6,086.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,500.00	0.00	0.00	6,186.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,600.00	0.00	0.00	6,286.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,700.00	0.00	0.00	6,386.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,800.00	0.00	0.00	6,486.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,805.16	0.00	0.00	6,492.00	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
RLNS									
6,900.00	0.00	0.00	6,586.84	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
6,905.16	0.00	0.00	6,592.00	1,324.25	-848.53	1,572.78	0.00	0.00	0.00
TD at 6905.16 - TD - GM 413-11 PBHL									

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well GM 413-11 - Slot GM 413-11
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 5793' & RKB 24' @ 5817.00usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 5793' & RKB 24' @ 5817.00usft
<b>Site:</b>	GR 23-11V Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 413-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 23Jan2018 mmsdi		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GM 413-11 BTV - hit/miss target - Shape	0.00	0.00	4,686.00	1,324.25	-848.53	1,600,583.80	2,271,106.90	39.4539377	-108.0816960
GM 413-11 PBHL - plan hits target center - Circle (radius 50.00)	0.00	0.00	6,592.00	1,324.25	-848.53	1,600,583.80	2,271,106.90	39.4539377	-108.0816960

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	963.09	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,028.65	1,893.00	G Sand		0.00	0.00
2,139.26	1,993.00	G Sand Base		0.00	0.00
2,336.16	2,171.00	FRUN		0.00	0.00
3,792.18	3,499.00	MVRD		0.00	0.00
4,999.16	4,686.00	KMVGAS		0.00	0.00
6,295.16	5,982.00	CME0		0.00	0.00
6,805.16	6,492.00	RLNS		0.00	0.00
6,905.16	6,592.00	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 3.50
858.13	834.84	132.31	-84.78	Start 2453.72 hold at 858.13 MD
3,311.85	3,053.03	1,015.54	-650.71	Start Drop -1.50
4,999.16	4,686.00	1,324.25	-848.53	Start 1906.00 hold at 4999.16 MD
6,905.16	6,592.00	1,324.25	-848.53	TD at 6905.16