

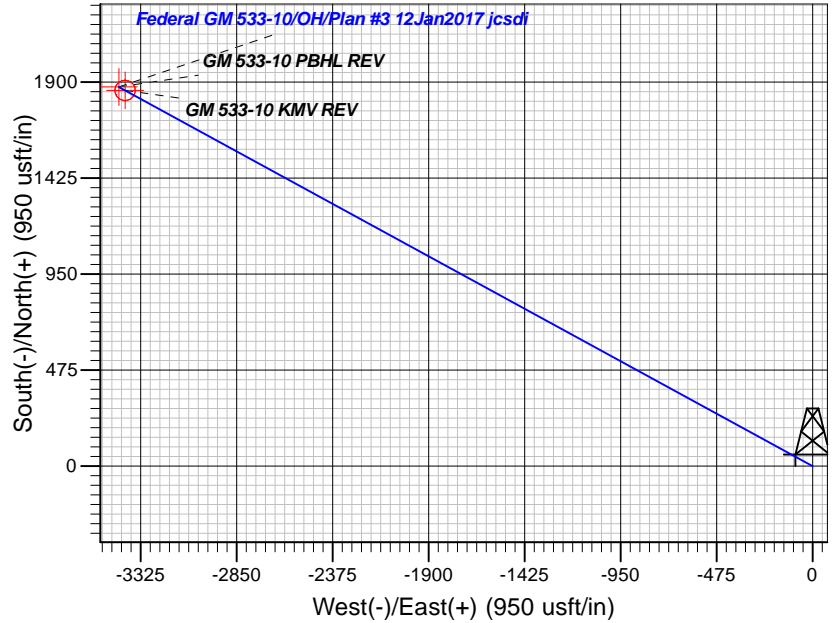
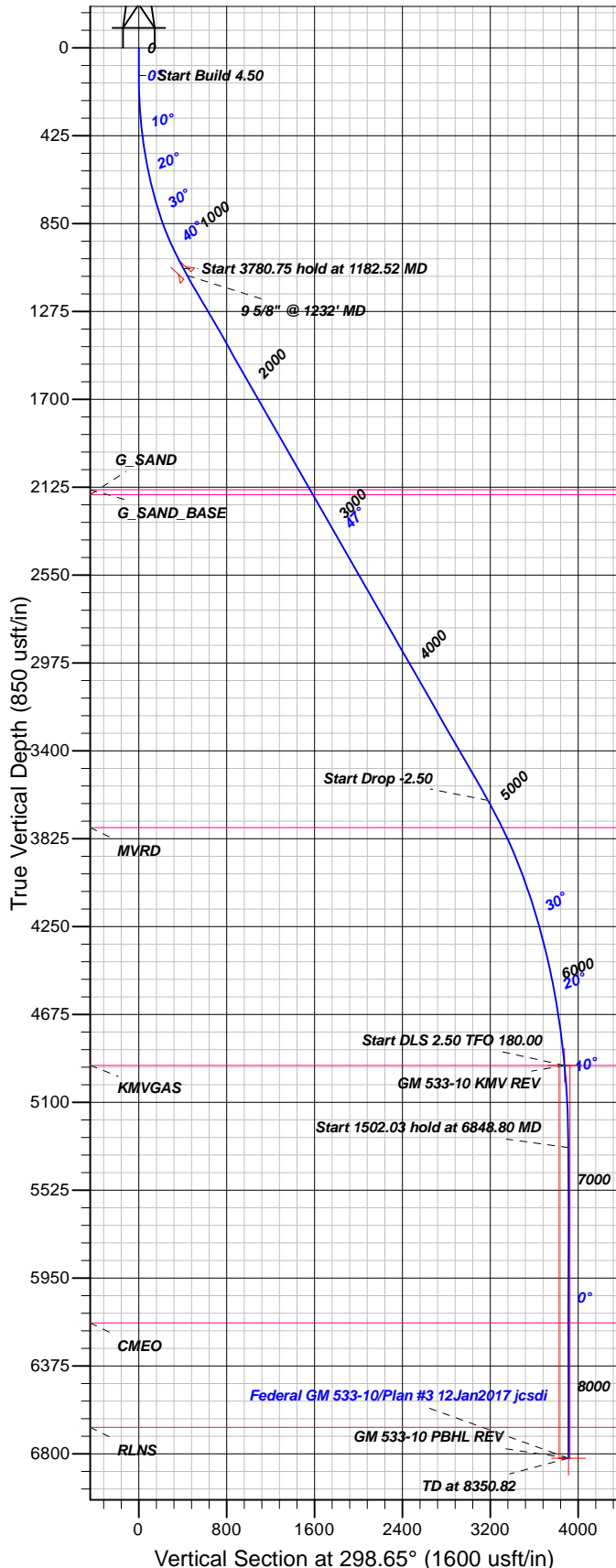
Well Details: Federal GM 533-10

GL 6148' & RKB 24' @ 6172.00usft (H&P 318)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600335.40	2266853.10	39.4529231	-108.0967294	A5

T M Azimuths to True North
Magnetic North: 9.71°

Magnetic Field
Strength: 51587.4snT
Dip Angle: 65.58°
Date: 9/13/2016
Model: BGGM2016



FORMATION TOP DETAILS

TVDP	MD	Formation
2137.00	2753.63	G_SAND_BASE
2162.00	2790.38	G_SAND
3772.00	5149.29	MVRD
4922.00	6448.80	KMVGAS
6167.00	7695.82	CMEQ
6672.00	8200.82	RLNS

Plan: Plan #3 12Jan2017 jcsdi

13:27, January 12 2017
Created By: Janie Collins

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
1102.29	1232.52	9 5/8" @ 1232' 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	1182.52	47.14	298.65	1068.28	195.23	-357.28	4.50	298.65	407.14	
4	4963.27	47.14	298.65	3640.07	1524.06	-2789.19	0.00	0.00	0.00	
5	6448.80	10.00	298.65	4922.00	1858.77	-3401.75	2.50	180.00	3876.46	GM 533-10 KMV REV
6	6848.80	0.00	0.00	5319.97	1875.47	-3432.30	2.50	180.00	3911.28	
7	8350.82	0.00	0.00	6822.00	1875.47	-3432.30	0.00	0.00	3911.28	GM 533-10 PBHL REV

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 533-10 KMV REV 4922.00		1858.77	-3401.75	1602290.63	2263505.86	39.4580257	-108.1087773	Circle (Radius: 50.00)
- plan hits target center								
GM 533-10 PBHL REV 6822.00		1875.47	-3432.30	1602308.20	2263475.80	39.4580716	-108.1088855	Point
- plan misses target center by 0.01usft at 8350.82usft MD (6822.00 TVD, 1875.47 N, -3432.30 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 533-10 - Slot A5

OH

Plan: Plan #3 12Jan2017 jcsdi

Standard Planning Report

12 January, 2017



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 533-10 - Slot A5
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 533-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 12Jan2017 jcsdi		

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 5-10 Pad			
Site Position:		Northing:	1,600,344.70 usft	Latitude: 39.4529509
From: Map		Easting:	2,266,881.70 usft	Longitude: -108.0966291
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.64 °

Well	Federal GM 533-10 - Slot A5			
Well Position	+N/-S	-10.11 usft	Northing:	1,600,335.40 usft
	+E/-W	-28.32 usft	Easting:	2,266,853.10 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level:	6,148.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	9/13/2016	9.72	65.58	51,587

Design	Plan #3 12Jan2017 jcsdi			
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	298.65

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	
1,182.52	47.14	298.65	1,068.28	195.23	-357.28	4.50	4.50	0.00	298.65	
4,963.27	47.14	298.65	3,640.07	1,524.06	-2,789.19	0.00	0.00	0.00	0.00	
6,448.80	10.00	298.65	4,922.00	1,858.77	-3,401.75	2.50	-2.50	0.00	180.00	GM 533-10 KMV REV
6,848.80	0.00	0.00	5,319.97	1,875.47	-3,432.30	2.50	-2.50	15.34	180.00	
8,350.82	0.00	0.00	6,822.00	1,875.47	-3,432.30	0.00	0.00	0.00	0.00	GM 533-10 PBHL RE

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 533-10 - Slot A5
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 533-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 12Jan2017 jcsdi		

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	
200.00	2.93	298.65	199.97	0.80	-1.46	1.66	4.50	4.50	0.00	
300.00	7.43	298.65	299.54	5.12	-9.37	10.68	4.50	4.50	0.00	
400.00	11.93	298.65	398.09	13.18	-24.11	27.48	4.50	4.50	0.00	
500.00	16.43	298.65	495.02	24.91	-45.60	51.96	4.50	4.50	0.00	
600.00	20.93	298.65	589.73	40.26	-73.69	83.97	4.50	4.50	0.00	
700.00	25.43	298.65	681.64	59.13	-108.21	123.32	4.50	4.50	0.00	
800.00	29.93	298.65	770.18	81.40	-148.96	169.75	4.50	4.50	0.00	
900.00	34.43	298.65	854.80	106.92	-195.68	222.99	4.50	4.50	0.00	
1,000.00	38.93	298.65	934.98	135.55	-248.08	282.70	4.50	4.50	0.00	
1,100.00	43.43	298.65	1,010.23	167.12	-305.84	348.52	4.50	4.50	0.00	
1,182.52	47.14	298.65	1,068.28	195.23	-357.28	407.14	4.50	4.50	0.00	
1,200.00	47.14	298.65	1,080.17	201.37	-368.53	419.96	0.00	0.00	0.00	
1,232.52	47.14	298.65	1,102.29	212.80	-389.45	443.79	0.00	0.00	0.00	
9 5/8" @ 1232' MD										
1,300.00	47.14	298.65	1,148.20	236.52	-432.85	493.26	0.00	0.00	0.00	
1,400.00	47.14	298.65	1,216.22	271.66	-497.18	566.56	0.00	0.00	0.00	
1,500.00	47.14	298.65	1,284.24	306.81	-561.50	639.86	0.00	0.00	0.00	
1,600.00	47.14	298.65	1,352.27	341.96	-625.82	713.16	0.00	0.00	0.00	
1,700.00	47.14	298.65	1,420.29	377.11	-690.15	786.46	0.00	0.00	0.00	
1,800.00	47.14	298.65	1,488.31	412.25	-754.47	859.76	0.00	0.00	0.00	
1,900.00	47.14	298.65	1,556.34	447.40	-818.79	933.06	0.00	0.00	0.00	
2,000.00	47.14	298.65	1,624.36	482.55	-883.12	1,006.35	0.00	0.00	0.00	
2,100.00	47.14	298.65	1,692.38	517.70	-947.44	1,079.65	0.00	0.00	0.00	
2,200.00	47.14	298.65	1,760.41	552.84	-1,011.76	1,152.95	0.00	0.00	0.00	
2,300.00	47.14	298.65	1,828.43	587.99	-1,076.09	1,226.25	0.00	0.00	0.00	
2,315.48	47.14	298.65	1,838.96	593.43	-1,086.05	1,237.60	0.00	0.00	0.00	
GM 533-10 KMV										
2,400.00	47.14	298.65	1,896.45	623.14	-1,140.41	1,299.55	0.00	0.00	0.00	
2,500.00	47.14	298.65	1,964.47	658.29	-1,204.73	1,372.85	0.00	0.00	0.00	
2,600.00	47.14	298.65	2,032.50	693.43	-1,269.06	1,446.15	0.00	0.00	0.00	
2,700.00	47.14	298.65	2,100.52	728.58	-1,333.38	1,519.45	0.00	0.00	0.00	
2,753.63	47.14	298.65	2,137.00	747.43	-1,367.88	1,558.76	0.00	0.00	0.00	
G_SAND_BASE										
2,790.38	47.14	298.65	2,162.00	760.35	-1,391.52	1,585.70	0.00	0.00	0.00	
G_SAND										
2,800.00	47.14	298.65	2,168.54	763.73	-1,397.71	1,592.75	0.00	0.00	0.00	
2,900.00	47.14	298.65	2,236.57	798.88	-1,462.03	1,666.05	0.00	0.00	0.00	
3,000.00	47.14	298.65	2,304.59	834.02	-1,526.35	1,739.35	0.00	0.00	0.00	
3,100.00	47.14	298.65	2,372.61	869.17	-1,590.68	1,812.65	0.00	0.00	0.00	
3,200.00	47.14	298.65	2,440.64	904.32	-1,655.00	1,885.95	0.00	0.00	0.00	
3,300.00	47.14	298.65	2,508.66	939.47	-1,719.32	1,959.25	0.00	0.00	0.00	
3,400.00	47.14	298.65	2,576.68	974.61	-1,783.65	2,032.55	0.00	0.00	0.00	
3,500.00	47.14	298.65	2,644.71	1,009.76	-1,847.97	2,105.85	0.00	0.00	0.00	
3,600.00	47.14	298.65	2,712.73	1,044.91	-1,912.29	2,179.15	0.00	0.00	0.00	
3,700.00	47.14	298.65	2,780.75	1,080.05	-1,976.62	2,252.45	0.00	0.00	0.00	
3,800.00	47.14	298.65	2,848.78	1,115.20	-2,040.94	2,325.75	0.00	0.00	0.00	
3,900.00	47.14	298.65	2,916.80	1,150.35	-2,105.26	2,399.05	0.00	0.00	0.00	
4,000.00	47.14	298.65	2,984.82	1,185.50	-2,169.59	2,472.35	0.00	0.00	0.00	
4,100.00	47.14	298.65	3,052.85	1,220.64	-2,233.91	2,545.65	0.00	0.00	0.00	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 533-10 - Slot A5
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 533-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 12Jan2017 jcsdi		

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)
4,200.00	47.14	298.65	3,120.87	1,255.79	-2,298.23	2,618.95	0.00	0.00	0.00
4,300.00	47.14	298.65	3,188.89	1,290.94	-2,362.56	2,692.25	0.00	0.00	0.00
4,400.00	47.14	298.65	3,256.91	1,326.09	-2,426.88	2,765.55	0.00	0.00	0.00
4,500.00	47.14	298.65	3,324.94	1,361.23	-2,491.20	2,838.85	0.00	0.00	0.00
4,600.00	47.14	298.65	3,392.96	1,396.38	-2,555.53	2,912.15	0.00	0.00	0.00
4,700.00	47.14	298.65	3,460.98	1,431.53	-2,619.85	2,985.45	0.00	0.00	0.00
4,800.00	47.14	298.65	3,529.01	1,466.68	-2,684.18	3,058.75	0.00	0.00	0.00
4,900.00	47.14	298.65	3,597.03	1,501.82	-2,748.50	3,132.05	0.00	0.00	0.00
4,963.27	47.14	298.65	3,640.07	1,524.06	-2,789.19	3,178.42	0.00	0.00	0.00
5,000.00	46.22	298.65	3,665.27	1,536.87	-2,812.65	3,205.15	2.50	-2.50	0.00
5,100.00	43.72	298.65	3,736.01	1,570.76	-2,874.66	3,275.81	2.50	-2.50	0.00
5,149.29	42.49	298.65	3,772.00	1,586.91	-2,904.22	3,309.50	2.50	-2.50	0.00
MVRD									
5,200.00	41.22	298.65	3,809.77	1,603.13	-2,933.91	3,343.33	2.50	-2.50	0.00
5,300.00	38.72	298.65	3,886.40	1,633.93	-2,990.27	3,407.56	2.50	-2.50	0.00
5,400.00	36.22	298.65	3,965.76	1,663.10	-3,043.65	3,468.39	2.50	-2.50	0.00
5,500.00	33.72	298.65	4,047.70	1,690.58	-3,093.95	3,525.70	2.50	-2.50	0.00
5,600.00	31.22	298.65	4,132.06	1,716.32	-3,141.05	3,579.38	2.50	-2.50	0.00
5,700.00	28.72	298.65	4,218.68	1,740.27	-3,184.89	3,629.33	2.50	-2.50	0.00
5,800.00	26.22	298.65	4,307.40	1,762.39	-3,225.36	3,675.46	2.50	-2.50	0.00
5,900.00	23.72	298.65	4,398.05	1,782.63	-3,262.41	3,717.67	2.50	-2.50	0.00
6,000.00	21.22	298.65	4,490.45	1,800.96	-3,295.94	3,755.89	2.50	-2.50	0.00
6,100.00	18.72	298.65	4,584.43	1,817.33	-3,325.91	3,790.04	2.50	-2.50	0.00
6,200.00	16.22	298.65	4,679.81	1,831.72	-3,352.25	3,820.05	2.50	-2.50	0.00
6,300.00	13.72	298.65	4,776.41	1,844.11	-3,374.92	3,845.88	2.50	-2.50	0.00
6,400.00	11.22	298.65	4,874.04	1,854.46	-3,393.87	3,867.47	2.50	-2.50	0.00
6,448.80	10.00	298.65	4,922.00	1,858.77	-3,401.75	3,876.46	2.50	-2.50	0.00
KMVGAS - GM 533-10 KMV REV									
6,500.00	8.72	298.65	4,972.52	1,862.76	-3,409.06	3,884.79	2.50	-2.50	0.00
6,600.00	6.22	298.65	5,071.66	1,869.00	-3,420.47	3,897.79	2.50	-2.50	0.00
6,700.00	3.72	298.65	5,171.28	1,873.15	-3,428.07	3,906.45	2.50	-2.50	0.00
6,800.00	1.22	298.65	5,271.18	1,875.22	-3,431.85	3,910.76	2.50	-2.50	0.00
6,848.80	0.00	0.00	5,319.97	1,875.47	-3,432.30	3,911.28	2.50	-2.50	125.72
6,900.00	0.00	0.00	5,371.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,000.00	0.00	0.00	5,471.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,100.00	0.00	0.00	5,571.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,200.00	0.00	0.00	5,671.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,300.00	0.00	0.00	5,771.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,400.00	0.00	0.00	5,871.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,500.00	0.00	0.00	5,971.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,600.00	0.00	0.00	6,071.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,695.82	0.00	0.00	6,167.00	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
CME0									
7,700.00	0.00	0.00	6,171.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,800.00	0.00	0.00	6,271.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
7,900.00	0.00	0.00	6,371.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
8,000.00	0.00	0.00	6,471.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
8,100.00	0.00	0.00	6,571.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
8,200.00	0.00	0.00	6,671.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
8,200.82	0.00	0.00	6,672.00	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
RLNS									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 533-10 - Slot A5
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
Site:	MV 5-10 Pad	North Reference:	True
Well:	Federal GM 533-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 12Jan2017 jcsdi		

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)
8,300.00	0.00	0.00	6,771.18	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
GM 533-10 PBHL									
8,350.82	0.00	0.00	6,822.00	1,875.47	-3,432.30	3,911.28	0.00	0.00	0.00
GM 533-10 PBHL REV									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
GM 533-10 KMV REV - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,922.00	1,858.77	-3,401.75	1,602,290.63	2,263,505.86	39.4580258	-108.1087773
GM 533-10 PBHL REV - plan misses target center by 0.01usft at 8350.82usft MD (6822.00 TVD, 1875.47 N, -3432.30 E) - Point	0.00	0.00	6,822.00	1,875.47	-3,432.30	1,602,308.20	2,263,475.80	39.4580716	-108.1088855

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,232.52	1,102.29	9 5/8" @ 1232' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,753.63	2,137.00	G_SAND_BASE		0.00	0.00
2,790.38	2,162.00	G_SAND		0.00	0.00
5,149.29	3,772.00	MVRD		0.00	0.00
6,448.80	4,922.00	KMVGAS		0.00	0.00
7,695.82	6,167.00	CME0		0.00	0.00
8,200.82	6,672.00	RLNS		0.00	0.00