

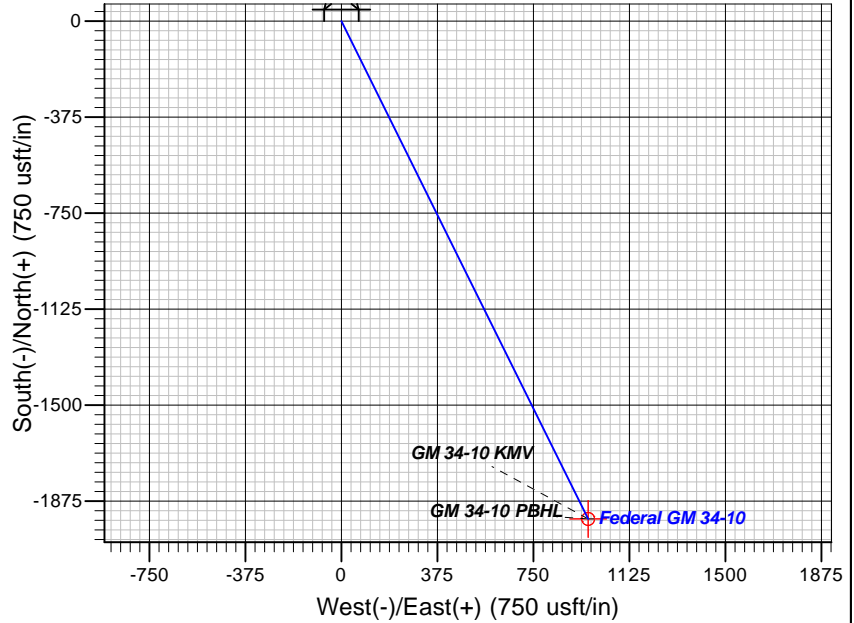
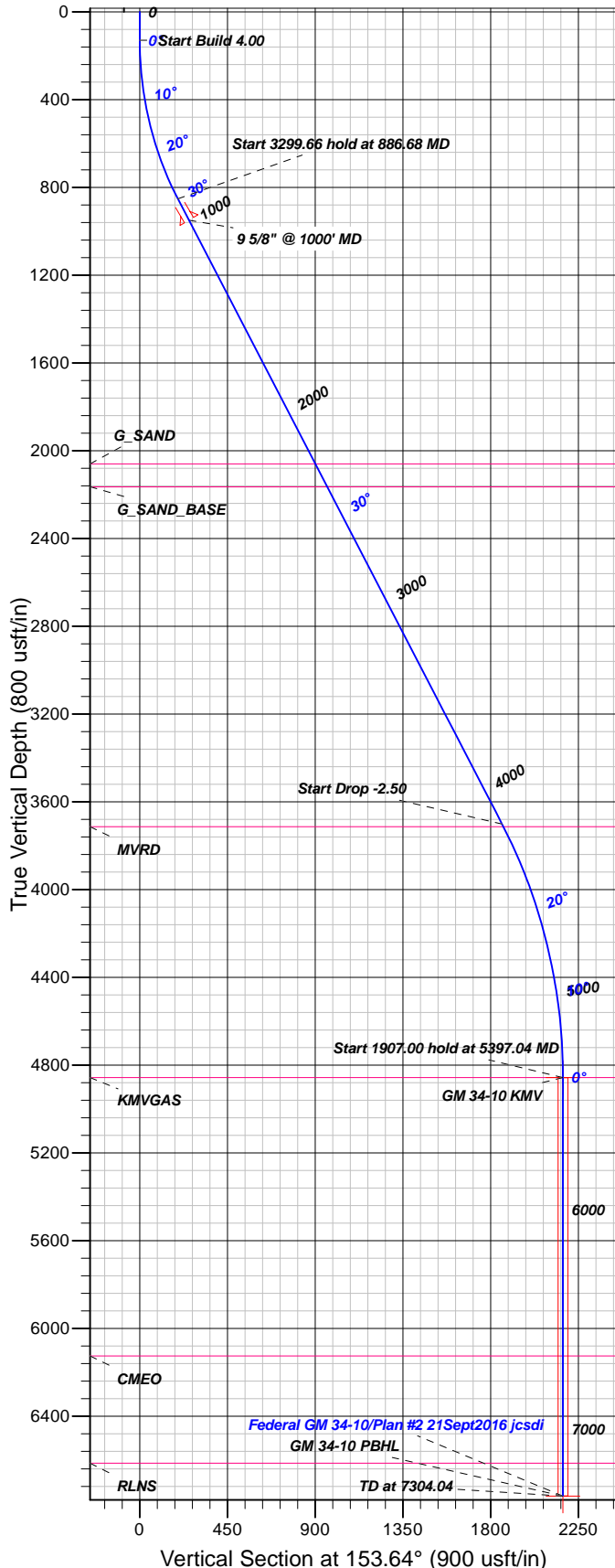
Well Details: Federal GM 34-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600333.00	2266846.00	39.4529160	-108.0967543	A4

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

TVDPth	MDPath	Formation
2060.00	2285.37	G_SAND
2165.00	2406.94	G_SAND_BASE
3714.00	4200.40	MVRD
4857.00	5397.04	KMVGAS
6126.00	6666.04	CMEO
6614.00	7154.04	RLNS

Plan: Plan #2 21Sept2016 jcsdi

10:56, September 23 2016
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

TVDP	MD	Name	Size
949.85	1000.00	9 5/8" @ 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	130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	
3	886.68	30.27	153.64	851.98	-174.95	86.71	4.00	153.64	195.26	
4	4186.34	30.27	153.64	3701.84	-1665.12	825.25	0.00	0.00	1858.40	
5	5397.04	0.00	0.00	4857.00	-1945.04	963.98	2.50	180.00	2170.82	GM 34-10 KMV
6	7304.04	0.00	0.00	6764.00	-1945.04	963.98	0.00	0.00	2170.82	GM 34-10 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 34-10 KMV	4857.00	-1945.04	963.981598361.20	2267754.00	39.4475759	-108.0933407	Circle (Radius: 25.00)	
- plan hits target center								
GM 34-10 PBHL	6764.00	-1945.04	963.981598361.20	2267754.00	39.4475759	-108.0933407	Point	
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 34-10 - Slot A4

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

23 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 34-10 - Slot A4
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 34-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 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 34-10 - Slot A4			
Well Position	+N/-S	-12.72 usft	Northing:	1,600,333.00 usft
	+E/-W	-35.35 usft	Easting:	2,266,846.00 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 #2 21Sept2016 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	153.64

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	
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00	
886.68	30.27	153.64	851.98	-174.95	86.71	4.00	4.00	0.00	153.64	
4,186.34	30.27	153.64	3,701.84	-1,665.12	825.25	0.00	0.00	0.00	0.00	
5,397.04	0.00	0.00	4,857.00	-1,945.04	963.98	2.50	-2.50	0.00	180.00	GM 34-10 KMV
7,304.04	0.00	0.00	6,764.00	-1,945.04	963.98	0.00	0.00	0.00	0.00	GM 34-10 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 34-10 - Slot A4
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 34-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 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
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	2.80	153.64	199.97	-1.53	0.76	1.71	4.00	4.00	0.00
300.00	6.80	153.64	299.60	-9.03	4.47	10.08	4.00	4.00	0.00
400.00	10.80	153.64	398.40	-22.73	11.27	25.37	4.00	4.00	0.00
500.00	14.80	153.64	495.90	-42.58	21.10	47.52	4.00	4.00	0.00
600.00	18.80	153.64	591.61	-68.47	33.94	76.42	4.00	4.00	0.00
700.00	22.80	153.64	685.08	-100.28	49.70	111.92	4.00	4.00	0.00
800.00	26.80	153.64	775.83	-137.86	68.32	153.86	4.00	4.00	0.00
886.68	30.27	153.64	851.98	-174.95	86.71	195.26	4.00	4.00	0.00
900.00	30.27	153.64	863.48	-180.97	89.69	201.97	0.00	0.00	0.00
1,000.00	30.27	153.64	949.85	-226.13	112.07	252.38	0.00	0.00	0.00
9 5/8" @ 1000' MD									
1,100.00	30.27	153.64	1,036.22	-271.29	134.45	302.78	0.00	0.00	0.00
1,200.00	30.27	153.64	1,122.58	-316.45	156.84	353.18	0.00	0.00	0.00
1,300.00	30.27	153.64	1,208.95	-361.61	179.22	403.59	0.00	0.00	0.00
1,400.00	30.27	153.64	1,295.32	-406.77	201.60	453.99	0.00	0.00	0.00
1,500.00	30.27	153.64	1,381.69	-451.93	223.98	504.39	0.00	0.00	0.00
1,600.00	30.27	153.64	1,468.06	-497.09	246.37	554.80	0.00	0.00	0.00
1,700.00	30.27	153.64	1,554.43	-542.26	268.75	605.20	0.00	0.00	0.00
1,800.00	30.27	153.64	1,640.79	-587.42	291.13	655.60	0.00	0.00	0.00
1,900.00	30.27	153.64	1,727.16	-632.58	313.51	706.01	0.00	0.00	0.00
2,000.00	30.27	153.64	1,813.53	-677.74	335.89	756.41	0.00	0.00	0.00
2,100.00	30.27	153.64	1,899.90	-722.90	358.28	806.81	0.00	0.00	0.00
2,200.00	30.27	153.64	1,986.27	-768.06	380.66	857.22	0.00	0.00	0.00
2,285.37	30.27	153.64	2,060.00	-806.62	399.77	900.25	0.00	0.00	0.00
G_SAND									
2,300.00	30.27	153.64	2,072.63	-813.22	403.04	907.62	0.00	0.00	0.00
2,400.00	30.27	153.64	2,159.00	-858.39	425.42	958.02	0.00	0.00	0.00
2,406.94	30.27	153.64	2,165.00	-861.52	426.98	961.52	0.00	0.00	0.00
G_SAND_BASE									
2,500.00	30.27	153.64	2,245.37	-903.55	447.81	1,008.43	0.00	0.00	0.00
2,600.00	30.27	153.64	2,331.74	-948.71	470.19	1,058.83	0.00	0.00	0.00
2,700.00	30.27	153.64	2,418.11	-993.87	492.57	1,109.24	0.00	0.00	0.00
2,800.00	30.27	153.64	2,504.48	-1,039.03	514.95	1,159.64	0.00	0.00	0.00
2,900.00	30.27	153.64	2,590.84	-1,084.19	537.34	1,210.04	0.00	0.00	0.00
3,000.00	30.27	153.64	2,677.21	-1,129.35	559.72	1,260.45	0.00	0.00	0.00
3,100.00	30.27	153.64	2,763.58	-1,174.51	582.10	1,310.85	0.00	0.00	0.00
3,200.00	30.27	153.64	2,849.95	-1,219.68	604.48	1,361.25	0.00	0.00	0.00
3,300.00	30.27	153.64	2,936.32	-1,264.84	626.87	1,411.66	0.00	0.00	0.00
3,400.00	30.27	153.64	3,022.69	-1,310.00	649.25	1,462.06	0.00	0.00	0.00
3,500.00	30.27	153.64	3,109.05	-1,355.16	671.63	1,512.46	0.00	0.00	0.00
3,600.00	30.27	153.64	3,195.42	-1,400.32	694.01	1,562.87	0.00	0.00	0.00
3,700.00	30.27	153.64	3,281.79	-1,445.48	716.40	1,613.27	0.00	0.00	0.00
3,800.00	30.27	153.64	3,368.16	-1,490.64	738.78	1,663.67	0.00	0.00	0.00
3,900.00	30.27	153.64	3,454.53	-1,535.81	761.16	1,714.08	0.00	0.00	0.00
4,000.00	30.27	153.64	3,540.90	-1,580.97	783.54	1,764.48	0.00	0.00	0.00
4,100.00	30.27	153.64	3,627.26	-1,626.13	805.93	1,814.89	0.00	0.00	0.00
4,186.34	30.27	153.64	3,701.84	-1,665.12	825.25	1,858.40	0.00	0.00	0.00
4,200.00	29.93	153.64	3,713.65	-1,671.26	828.29	1,865.25	2.50	-2.50	0.00
4,200.40	29.92	153.64	3,714.00	-1,671.44	828.38	1,865.45	2.50	-2.50	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 34-10 - Slot A4
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 34-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 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)
MVRD									
4,300.00	27.43	153.64	3,801.38	-1,714.25	849.60	1,913.24	2.50	-2.50	0.00
4,400.00	24.93	153.64	3,891.12	-1,753.77	869.19	1,957.34	2.50	-2.50	0.00
4,500.00	22.43	153.64	3,982.69	-1,789.75	887.02	1,997.50	2.50	-2.50	0.00
4,600.00	19.93	153.64	4,075.93	-1,822.11	903.06	2,033.62	2.50	-2.50	0.00
4,700.00	17.43	153.64	4,170.66	-1,850.80	917.28	2,065.64	2.50	-2.50	0.00
4,800.00	14.93	153.64	4,266.69	-1,875.76	929.65	2,093.49	2.50	-2.50	0.00
4,900.00	12.43	153.64	4,363.85	-1,896.94	940.14	2,117.13	2.50	-2.50	0.00
5,000.00	9.93	153.64	4,461.95	-1,914.31	948.75	2,136.51	2.50	-2.50	0.00
5,100.00	7.43	153.64	4,560.80	-1,927.82	955.45	2,151.60	2.50	-2.50	0.00
5,200.00	4.93	153.64	4,660.21	-1,937.46	960.22	2,162.36	2.50	-2.50	0.00
5,300.00	2.43	153.64	4,759.99	-1,943.20	963.07	2,168.77	2.50	-2.50	0.00
5,397.04	0.00	0.00	4,857.00	-1,945.04	963.98	2,170.82	2.50	-2.50	0.00
KMVGAS - GM 34-10 KMV									
5,400.00	0.00	0.00	4,859.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
5,500.00	0.00	0.00	4,959.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
5,600.00	0.00	0.00	5,059.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
5,700.00	0.00	0.00	5,159.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
5,800.00	0.00	0.00	5,259.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
5,900.00	0.00	0.00	5,359.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,000.00	0.00	0.00	5,459.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,100.00	0.00	0.00	5,559.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,200.00	0.00	0.00	5,659.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,300.00	0.00	0.00	5,759.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,400.00	0.00	0.00	5,859.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,500.00	0.00	0.00	5,959.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,600.00	0.00	0.00	6,059.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,666.04	0.00	0.00	6,126.00	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
CME0									
6,700.00	0.00	0.00	6,159.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,800.00	0.00	0.00	6,259.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
6,900.00	0.00	0.00	6,359.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
7,000.00	0.00	0.00	6,459.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
7,100.00	0.00	0.00	6,559.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
7,154.04	0.00	0.00	6,614.00	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
RLNS									
7,200.00	0.00	0.00	6,659.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
7,300.00	0.00	0.00	6,759.96	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
7,304.04	0.00	0.00	6,764.00	-1,945.04	963.98	2,170.82	0.00	0.00	0.00
GM 34-10 PBHL									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 34-10 - Slot A4
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 34-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

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 34-10 KMV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,857.00	-1,945.04	963.98	1,598,361.20	2,267,754.00	39.4475759	-108.0933407
GM 34-10 PBHL - plan hits target center - Point	0.00	0.00	6,764.00	-1,945.04	963.98	1,598,361.20	2,267,754.00	39.4475759	-108.0933407

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	949.85	9 5/8" @ 1000' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,285.37	2,060.00	G_SAND		0.00	0.00
2,406.94	2,165.00	G_SAND_BASE		0.00	0.00
4,200.40	3,714.00	MVRD		0.00	0.00
5,397.04	4,857.00	KMVGAS		0.00	0.00
6,666.04	6,126.00	CME0		0.00	0.00
7,154.04	6,614.00	RLNS		0.00	0.00