

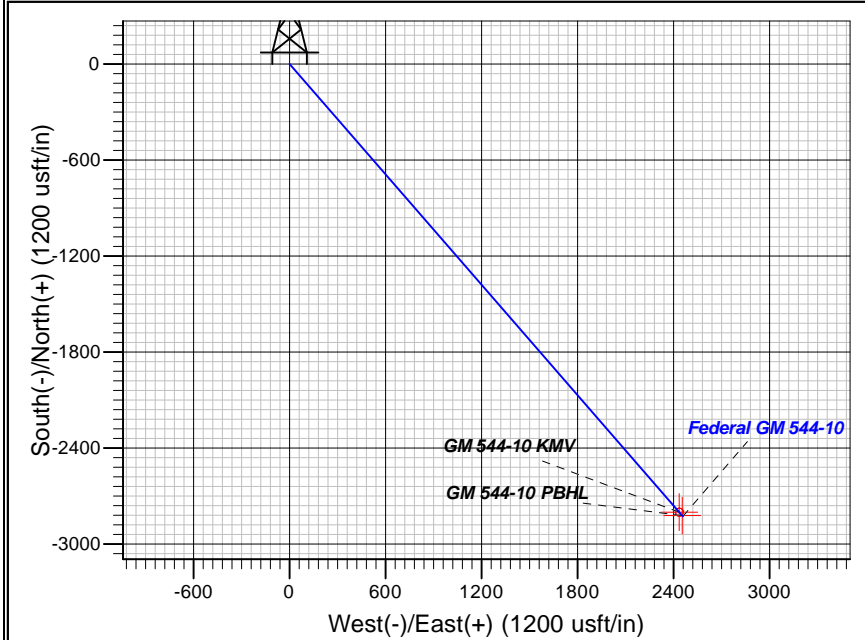
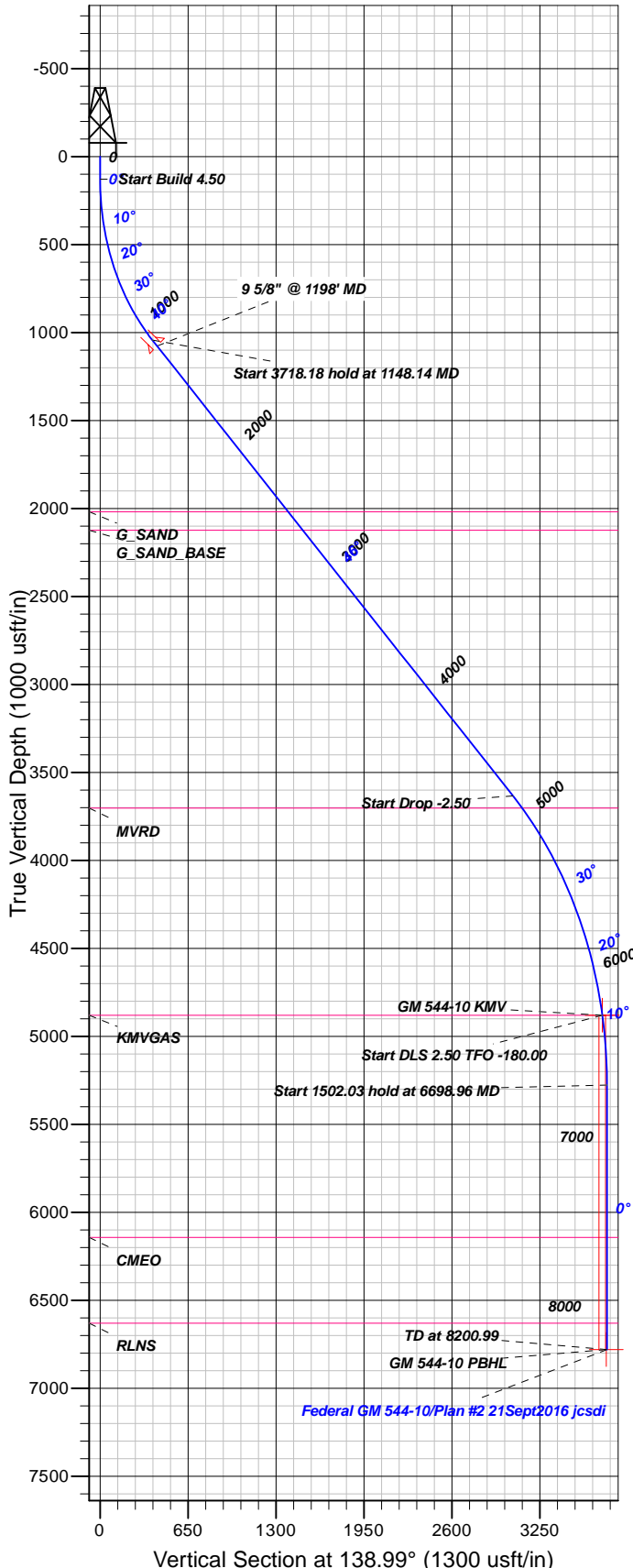
Well Details: Federal GM 544-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600337.70	2266860.30	39.4529300	-108.0967041	A6

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

TVDPath	MDPath	Formation
2019.00	2548.43	G_SAND
2124.00	2699.08	G_SAND_BASE
3703.00	4962.57	MVRD
4880.00	6298.96	KMVGAS
6143.00	7563.99	CMEQ
6630.00	8050.99	RLNS

Plan: Plan #2 21Sept2016 jcsdi

16:54, September 22 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

TVD	MD	Name	Size
1077.90	1198.14	9 5/8" @ 1198' 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	1148.14	45.82	138.99	1043.05	-291.16	253.18	4.50	138.99	385.84	
4	4866.32	45.82	138.99	3634.48	-2303.19	2002.77	0.00	0.003052.17		
5	6298.96	10.00	138.99	4880.00	-2801.00	2435.64	2.50	180.003711.87		GM 544-10 KMV
6	6698.96	0.00	0.00	5277.97	-2827.27	2458.49	2.50	-180.003746.68		
7	8200.99	0.00	0.00	6780.00	-2827.27	2458.49	0.00	0.003746.68		GM 544-10 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 544-10 KMV	4880.00	-2801.00	2435.64	1597468.23	2269214.89	39.4452396	-108.0880795	Circle (Radius: 25.00)
- plan hits target center								
GM 544-10 PBHL	6780.00	-2822.90	2454.68	1597445.80	2269233.30	39.4451795	-108.0880121	Point
- plan misses target center by 5.80usft at 8200.99usft MD (6780.00 TVD, -2827.27 N, 2458.49 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 544-10 - Slot A6

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

22 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 544-10 - Slot A6
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 544-10	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 544-10 - Slot A6			
Well Position	+N/-S	-7.61 usft	Northing:	1,600,337.70 usft
	+E/-W	-21.19 usft	Easting:	2,266,860.30 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	138.99

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	
1,148.14	45.82	138.99	1,043.05	-291.16	253.18	4.50	4.50	0.00	138.99	
4,866.32	45.82	138.99	3,634.48	-2,303.19	2,002.77	0.00	0.00	0.00	0.00	
6,298.96	10.00	138.99	4,880.00	-2,801.00	2,435.64	2.50	-2.50	0.00	180.00	GM 544-10 KMV
6,698.96	0.00	0.00	5,277.97	-2,827.27	2,458.49	2.50	-2.50	-34.75	-180.00	
8,200.99	0.00	0.00	6,780.00	-2,827.27	2,458.49	0.00	0.00	0.00	0.00	GM 544-10 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 544-10 - Slot A6
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 544-10	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	3.15	138.99	199.96	-1.45	1.26	1.92	4.50	4.50	0.00	
300.00	7.65	138.99	299.50	-8.55	7.44	11.33	4.50	4.50	0.00	
400.00	12.15	138.99	397.98	-21.52	18.71	28.52	4.50	4.50	0.00	
500.00	16.65	138.99	494.81	-40.28	35.03	53.38	4.50	4.50	0.00	
600.00	21.15	138.99	589.40	-64.72	56.28	85.77	4.50	4.50	0.00	
700.00	25.65	138.99	681.15	-94.68	82.33	125.47	4.50	4.50	0.00	
800.00	30.15	138.99	769.50	-129.98	113.03	172.25	4.50	4.50	0.00	
900.00	34.65	138.99	853.92	-170.41	148.18	225.82	4.50	4.50	0.00	
1,000.00	39.15	138.99	933.86	-215.70	187.57	285.85	4.50	4.50	0.00	
1,100.00	43.65	138.99	1,008.86	-265.59	230.95	351.96	4.50	4.50	0.00	
1,148.14	45.82	138.99	1,043.05	-291.16	253.18	385.84	4.50	4.50	0.00	
1,198.14	45.82	138.99	1,077.90	-318.22	276.71	421.70	0.00	0.00	0.00	
9 5/8" @ 1198' MD										
1,200.00	45.82	138.99	1,079.20	-319.22	277.58	423.03	0.00	0.00	0.00	
1,300.00	45.82	138.99	1,148.89	-373.34	324.64	494.74	0.00	0.00	0.00	
1,400.00	45.82	138.99	1,218.59	-427.45	371.69	566.45	0.00	0.00	0.00	
1,500.00	45.82	138.99	1,288.28	-481.56	418.75	638.16	0.00	0.00	0.00	
1,600.00	45.82	138.99	1,357.98	-535.68	465.80	709.87	0.00	0.00	0.00	
1,700.00	45.82	138.99	1,427.68	-589.79	512.86	781.58	0.00	0.00	0.00	
1,800.00	45.82	138.99	1,497.37	-643.90	559.91	853.29	0.00	0.00	0.00	
1,900.00	45.82	138.99	1,567.07	-698.02	606.97	925.01	0.00	0.00	0.00	
2,000.00	45.82	138.99	1,636.77	-752.13	654.02	996.72	0.00	0.00	0.00	
2,100.00	45.82	138.99	1,706.46	-806.24	701.08	1,068.43	0.00	0.00	0.00	
2,200.00	45.82	138.99	1,776.16	-860.36	748.13	1,140.14	0.00	0.00	0.00	
2,300.00	45.82	138.99	1,845.86	-914.47	795.19	1,211.85	0.00	0.00	0.00	
2,400.00	45.82	138.99	1,915.55	-968.58	842.24	1,283.56	0.00	0.00	0.00	
2,500.00	45.82	138.99	1,985.25	-1,022.70	889.30	1,355.27	0.00	0.00	0.00	
2,548.43	45.82	138.99	2,019.00	-1,048.90	912.08	1,390.00	0.00	0.00	0.00	
G_SAND										
2,600.00	45.82	138.99	2,054.94	-1,076.81	936.35	1,426.98	0.00	0.00	0.00	
2,699.08	45.82	138.99	2,124.00	-1,130.43	982.97	1,498.03	0.00	0.00	0.00	
G_SAND_BASE										
2,700.00	45.82	138.99	2,124.64	-1,130.92	983.41	1,498.69	0.00	0.00	0.00	
2,800.00	45.82	138.99	2,194.34	-1,185.04	1,030.46	1,570.40	0.00	0.00	0.00	
2,900.00	45.82	138.99	2,264.03	-1,239.15	1,077.52	1,642.11	0.00	0.00	0.00	
3,000.00	45.82	138.99	2,333.73	-1,293.26	1,124.57	1,713.82	0.00	0.00	0.00	
3,100.00	45.82	138.99	2,403.43	-1,347.38	1,171.63	1,785.53	0.00	0.00	0.00	
3,200.00	45.82	138.99	2,473.12	-1,401.49	1,218.68	1,857.24	0.00	0.00	0.00	
3,300.00	45.82	138.99	2,542.82	-1,455.60	1,265.74	1,928.96	0.00	0.00	0.00	
3,400.00	45.82	138.99	2,612.51	-1,509.72	1,312.79	2,000.67	0.00	0.00	0.00	
3,500.00	45.82	138.99	2,682.21	-1,563.83	1,359.85	2,072.38	0.00	0.00	0.00	
3,600.00	45.82	138.99	2,751.91	-1,617.94	1,406.90	2,144.09	0.00	0.00	0.00	
3,700.00	45.82	138.99	2,821.60	-1,672.06	1,453.96	2,215.80	0.00	0.00	0.00	
3,800.00	45.82	138.99	2,891.30	-1,726.17	1,501.01	2,287.51	0.00	0.00	0.00	
3,900.00	45.82	138.99	2,961.00	-1,780.28	1,548.07	2,359.22	0.00	0.00	0.00	
4,000.00	45.82	138.99	3,030.69	-1,834.40	1,595.12	2,430.93	0.00	0.00	0.00	
4,100.00	45.82	138.99	3,100.39	-1,888.51	1,642.18	2,502.64	0.00	0.00	0.00	
4,200.00	45.82	138.99	3,170.08	-1,942.62	1,689.23	2,574.35	0.00	0.00	0.00	
4,300.00	45.82	138.99	3,239.78	-1,996.74	1,736.29	2,646.06	0.00	0.00	0.00	

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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 544-10	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)
4,400.00	45.82	138.99	3,309.48	-2,050.85	1,783.34	2,717.77	0.00	0.00	0.00
4,500.00	45.82	138.99	3,379.17	-2,104.96	1,830.39	2,789.48	0.00	0.00	0.00
4,600.00	45.82	138.99	3,448.87	-2,159.08	1,877.45	2,861.19	0.00	0.00	0.00
4,700.00	45.82	138.99	3,518.57	-2,213.19	1,924.50	2,932.91	0.00	0.00	0.00
4,800.00	45.82	138.99	3,588.26	-2,267.30	1,971.56	3,004.62	0.00	0.00	0.00
4,866.32	45.82	138.99	3,634.48	-2,303.19	2,002.77	3,052.17	0.00	0.00	0.00
4,900.00	44.97	138.99	3,658.14	-2,321.29	2,018.50	3,076.15	2.50	-2.50	0.00
4,962.57	43.41	138.99	3,703.00	-2,354.20	2,047.12	3,119.77	2.50	-2.50	0.00
MVRD									
5,000.00	42.47	138.99	3,730.40	-2,373.44	2,063.85	3,145.27	2.50	-2.50	0.00
5,100.00	39.97	138.99	3,805.61	-2,423.17	2,107.09	3,211.16	2.50	-2.50	0.00
5,200.00	37.47	138.99	3,883.62	-2,470.37	2,148.14	3,273.71	2.50	-2.50	0.00
5,300.00	34.97	138.99	3,964.28	-2,514.96	2,186.91	3,332.80	2.50	-2.50	0.00
5,400.00	32.47	138.99	4,047.45	-2,556.85	2,223.34	3,388.32	2.50	-2.50	0.00
5,500.00	29.97	138.99	4,132.95	-2,595.96	2,257.35	3,440.15	2.50	-2.50	0.00
5,600.00	27.47	138.99	4,220.64	-2,632.23	2,288.88	3,488.21	2.50	-2.50	0.00
5,700.00	24.97	138.99	4,310.34	-2,665.57	2,317.88	3,532.39	2.50	-2.50	0.00
5,800.00	22.47	138.99	4,401.88	-2,695.93	2,344.27	3,572.62	2.50	-2.50	0.00
5,900.00	19.97	138.99	4,495.09	-2,723.24	2,368.03	3,608.82	2.50	-2.50	0.00
6,000.00	17.47	138.99	4,589.79	-2,747.47	2,389.09	3,640.92	2.50	-2.50	0.00
6,100.00	14.97	138.99	4,685.80	-2,768.55	2,407.42	3,668.86	2.50	-2.50	0.00
6,200.00	12.47	138.99	4,782.94	-2,786.45	2,422.99	3,692.58	2.50	-2.50	0.00
6,298.96	10.00	138.99	4,880.00	-2,801.00	2,435.64	3,711.87	2.50	-2.50	0.00
KMVGAS - GM 544-10 KMV									
6,300.00	9.97	138.99	4,881.02	-2,801.14	2,435.76	3,712.04	2.50	-2.50	0.00
6,400.00	7.47	138.99	4,979.86	-2,812.58	2,445.71	3,727.21	2.50	-2.50	0.00
6,500.00	4.97	138.99	5,079.26	-2,820.76	2,452.82	3,738.05	2.50	-2.50	0.00
6,600.00	2.47	138.99	5,179.04	-2,825.66	2,457.09	3,744.55	2.50	-2.50	0.00
6,698.96	0.00	0.00	5,277.97	-2,827.27	2,458.49	3,746.68	2.50	-2.50	-140.45
6,700.00	0.00	0.00	5,279.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
6,800.00	0.00	0.00	5,379.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
6,900.00	0.00	0.00	5,479.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,000.00	0.00	0.00	5,579.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,100.00	0.00	0.00	5,679.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,200.00	0.00	0.00	5,779.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,300.00	0.00	0.00	5,879.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,400.00	0.00	0.00	5,979.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,500.00	0.00	0.00	6,079.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,563.99	0.00	0.00	6,143.00	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
CME0									
7,600.00	0.00	0.00	6,179.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,700.00	0.00	0.00	6,279.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,800.00	0.00	0.00	6,379.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
7,900.00	0.00	0.00	6,479.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
8,000.00	0.00	0.00	6,579.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
8,050.99	0.00	0.00	6,630.00	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
RLNS									
8,100.00	0.00	0.00	6,679.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
8,200.00	0.00	0.00	6,779.01	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
8,200.99	0.00	0.00	6,780.00	-2,827.27	2,458.49	3,746.68	0.00	0.00	0.00
GM 544-10 PBHL									

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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 544-10	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 544-10 KMV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,880.00	-2,801.00	2,435.64	1,597,468.23	2,269,214.89	39.4452396	-108.0880795
GM 544-10 PBHL - plan misses target center by 5.80usft at 8200.99usft MD (6780.00 TVD, -2827.27 N, 2458.49 E) - Point	0.00	0.00	6,780.00	-2,822.90	2,454.68	1,597,445.80	2,269,233.30	39.4451795	-108.0880121

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,198.14	1,077.90	9 5/8" @ 1198' MD	9.62	9.62

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,548.43	2,019.00	G_SAND		0.00	0.00
2,699.08	2,124.00	G_SAND_BASE		0.00	0.00
4,962.57	3,703.00	MVRD		0.00	0.00
6,298.96	4,880.00	KMVGAS		0.00	0.00
7,563.99	6,143.00	CMEO		0.00	0.00
8,050.99	6,630.00	RLNS		0.00	0.00