

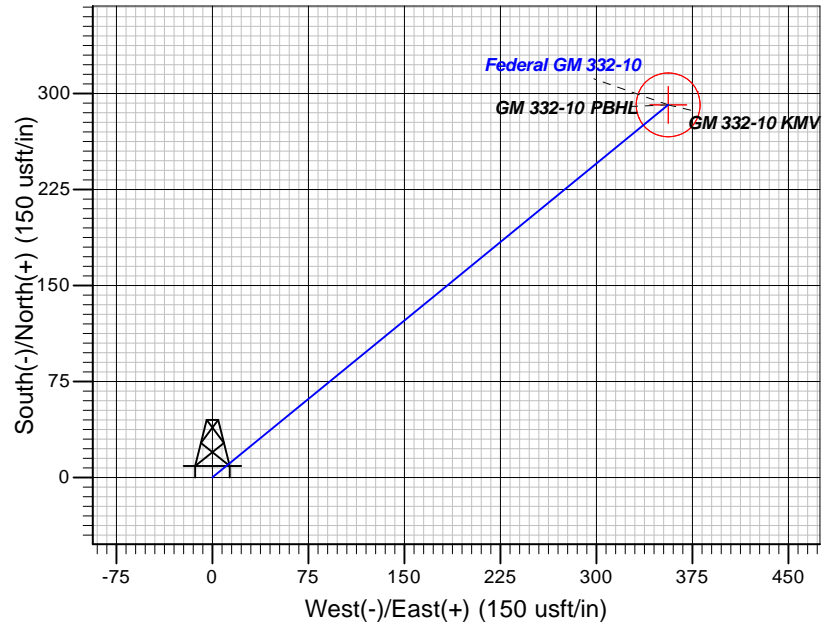
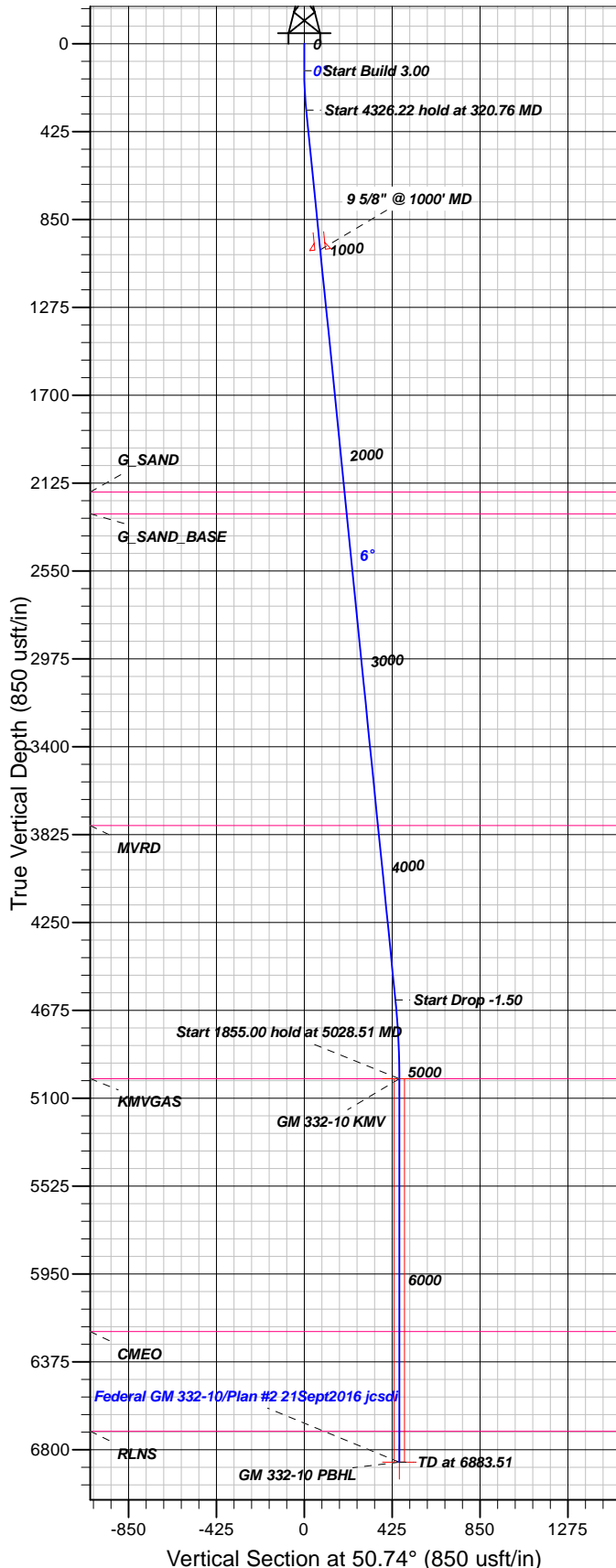
## Well Details: Federal GM 332-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600368.20	2266921.30	39.4530185	-108.0964913	B15

**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
2169.00	2178.58	G_SAND
2274.00	2284.10	G_SAND_BASE
3781.00	3798.65	MVRD
5006.00	5028.51	KMVGAS
6228.00	6250.51	CMEO
6711.00	6733.51	RLNS

Plan: Plan #2 21Sept2016 jcsdi

10:20, 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

TVD	MD	Name	Size
996.30	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	320.76	5.72	50.74	320.45	6.02	7.37	3.00	50.74	9.52	
4	4646.99	5.72	50.74	4625.11	279.05	341.39	0.00	0.00	440.92	
5	5028.51	0.00	0.00	5006.00	291.10	356.13	1.50	180.00	459.96	GM 332-10 KMV
6	6883.51	0.00	0.00	6861.00	291.10	356.13	0.00	0.00	459.96	GM 332-10 PBHL

### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 332-10 KMV	5006.00	291.10	356.13	1600649.00	2267285.60	39.4538177	-108.0952301	Circle (Radius: 25.00)
- plan hits target center								
GM 332-10 PBHL	6861.00	291.10	356.13	1600649.00	2267285.60	39.4538177	-108.0952301	Point
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**MV 5-10 Pad**

**Federal GM 332-10 - Slot B15**

**OH**

**Plan: Plan #2 21Sept2016 jcsdi**

## **Standard Planning Report**

**23 September, 2016**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Federal GM 332-10 - Slot B15
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Site:</b>	MV 5-10 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal GM 332-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2 21Sept2016 jcsdi		

<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		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 332-10 - Slot B15					
Well Position	+N/-S	24.62 usft	Northing:	1,600,368.20 usft	Latitude:	39.4530185
	+E/-W	38.91 usft	Easting:	2,266,921.30 usft	Longitude:	-108.0964913
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,148.00 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>
	BGGM2016	9/13/2016	9.72	65.58	51,587

<b>Design</b>	Plan #2 21Sept2016 jcsdi			
<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	50.74

<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	
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00	
320.76	5.72	50.74	320.45	6.02	7.37	3.00	3.00	0.00	50.74	
4,646.99	5.72	50.74	4,625.11	279.05	341.39	0.00	0.00	0.00	0.00	
5,028.51	0.00	0.00	5,006.00	291.10	356.13	1.50	-1.50	0.00	180.00	GM 332-10 KMV
6,883.51	0.00	0.00	6,861.00	291.10	356.13	0.00	0.00	0.00	0.00	GM 332-10 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Federal GM 332-10 - Slot B15
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Site:</b>	MV 5-10 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal GM 332-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	2.10	50.74	199.98	0.81	0.99	1.28	3.00	3.00	0.00	
300.00	5.10	50.74	299.78	4.79	5.85	7.56	3.00	3.00	0.00	
320.76	5.72	50.74	320.45	6.02	7.37	9.52	3.00	3.00	0.00	
400.00	5.72	50.74	399.29	11.02	13.49	17.42	0.00	0.00	0.00	
500.00	5.72	50.74	498.79	17.34	21.21	27.39	0.00	0.00	0.00	
600.00	5.72	50.74	598.29	23.65	28.93	37.36	0.00	0.00	0.00	
700.00	5.72	50.74	697.79	29.96	36.65	47.34	0.00	0.00	0.00	
800.00	5.72	50.74	797.29	36.27	44.37	57.31	0.00	0.00	0.00	
900.00	5.72	50.74	896.80	42.58	52.09	67.28	0.00	0.00	0.00	
1,000.00	5.72	50.74	996.30	48.89	59.81	77.25	0.00	0.00	0.00	
9 5/8" @ 1000' MD										
1,100.00	5.72	50.74	1,095.80	55.20	67.53	87.22	0.00	0.00	0.00	
1,200.00	5.72	50.74	1,195.30	61.51	75.25	97.19	0.00	0.00	0.00	
1,300.00	5.72	50.74	1,294.80	67.82	82.97	107.17	0.00	0.00	0.00	
1,400.00	5.72	50.74	1,394.30	74.13	90.70	117.14	0.00	0.00	0.00	
1,500.00	5.72	50.74	1,493.81	80.44	98.42	127.11	0.00	0.00	0.00	
1,600.00	5.72	50.74	1,593.31	86.76	106.14	137.08	0.00	0.00	0.00	
1,700.00	5.72	50.74	1,692.81	93.07	113.86	147.05	0.00	0.00	0.00	
1,800.00	5.72	50.74	1,792.31	99.38	121.58	157.03	0.00	0.00	0.00	
1,900.00	5.72	50.74	1,891.81	105.69	129.30	167.00	0.00	0.00	0.00	
2,000.00	5.72	50.74	1,991.31	112.00	137.02	176.97	0.00	0.00	0.00	
2,100.00	5.72	50.74	2,090.81	118.31	144.74	186.94	0.00	0.00	0.00	
2,178.58	5.72	50.74	2,169.00	123.27	150.81	194.78	0.00	0.00	0.00	
G_SAND										
2,200.00	5.72	50.74	2,190.32	124.62	152.46	196.91	0.00	0.00	0.00	
2,284.10	5.72	50.74	2,274.00	129.93	158.95	205.30	0.00	0.00	0.00	
G_SAND_BASE										
2,300.00	5.72	50.74	2,289.82	130.93	160.18	206.88	0.00	0.00	0.00	
2,400.00	5.72	50.74	2,389.32	137.24	167.90	216.86	0.00	0.00	0.00	
2,500.00	5.72	50.74	2,488.82	143.55	175.62	226.83	0.00	0.00	0.00	
2,600.00	5.72	50.74	2,588.32	149.86	183.34	236.80	0.00	0.00	0.00	
2,700.00	5.72	50.74	2,687.82	156.18	191.06	246.77	0.00	0.00	0.00	
2,800.00	5.72	50.74	2,787.33	162.49	198.79	256.74	0.00	0.00	0.00	
2,900.00	5.72	50.74	2,886.83	168.80	206.51	266.72	0.00	0.00	0.00	
3,000.00	5.72	50.74	2,986.33	175.11	214.23	276.69	0.00	0.00	0.00	
3,100.00	5.72	50.74	3,085.83	181.42	221.95	286.66	0.00	0.00	0.00	
3,200.00	5.72	50.74	3,185.33	187.73	229.67	296.63	0.00	0.00	0.00	
3,300.00	5.72	50.74	3,284.83	194.04	237.39	306.60	0.00	0.00	0.00	
3,400.00	5.72	50.74	3,384.34	200.35	245.11	316.57	0.00	0.00	0.00	
3,500.00	5.72	50.74	3,483.84	206.66	252.83	326.55	0.00	0.00	0.00	
3,600.00	5.72	50.74	3,583.34	212.97	260.55	336.52	0.00	0.00	0.00	
3,700.00	5.72	50.74	3,682.84	219.28	268.27	346.49	0.00	0.00	0.00	
3,798.65	5.72	50.74	3,781.00	225.51	275.89	356.33	0.00	0.00	0.00	
MVRD										
3,800.00	5.72	50.74	3,782.34	225.59	275.99	356.46	0.00	0.00	0.00	
3,900.00	5.72	50.74	3,881.84	231.91	283.71	366.43	0.00	0.00	0.00	
4,000.00	5.72	50.74	3,981.34	238.22	291.43	376.41	0.00	0.00	0.00	
4,100.00	5.72	50.74	4,080.85	244.53	299.15	386.38	0.00	0.00	0.00	
4,200.00	5.72	50.74	4,180.35	250.84	306.88	396.35	0.00	0.00	0.00	

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Federal GM 332-10 - Slot B15
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<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Site:</b>	MV 5-10 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal GM 332-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
4,300.00	5.72	50.74	4,279.85	257.15	314.60	406.32	0.00	0.00	0.00
4,400.00	5.72	50.74	4,379.35	263.46	322.32	416.29	0.00	0.00	0.00
4,500.00	5.72	50.74	4,478.85	269.77	330.04	426.26	0.00	0.00	0.00
4,600.00	5.72	50.74	4,578.35	276.08	337.76	436.24	0.00	0.00	0.00
4,646.99	5.72	50.74	4,625.11	279.05	341.39	440.92	0.00	0.00	0.00
4,700.00	4.93	50.74	4,677.89	282.16	345.20	445.84	1.50	-1.50	0.00
4,800.00	3.43	50.74	4,777.62	286.77	350.84	453.13	1.50	-1.50	0.00
4,900.00	1.93	50.74	4,877.51	289.73	354.45	457.80	1.50	-1.50	0.00
5,000.00	0.43	50.74	4,977.49	291.03	356.04	459.85	1.50	-1.50	0.00
5,028.51	0.00	0.00	5,006.00	291.10	356.13	459.96	1.50	-1.50	0.00
KMGAS - GM 332-10 KMW									
5,100.00	0.00	0.00	5,077.49	291.10	356.13	459.96	0.00	0.00	0.00
5,200.00	0.00	0.00	5,177.49	291.10	356.13	459.96	0.00	0.00	0.00
5,300.00	0.00	0.00	5,277.49	291.10	356.13	459.96	0.00	0.00	0.00
5,400.00	0.00	0.00	5,377.49	291.10	356.13	459.96	0.00	0.00	0.00
5,500.00	0.00	0.00	5,477.49	291.10	356.13	459.96	0.00	0.00	0.00
5,600.00	0.00	0.00	5,577.49	291.10	356.13	459.96	0.00	0.00	0.00
5,700.00	0.00	0.00	5,677.49	291.10	356.13	459.96	0.00	0.00	0.00
5,800.00	0.00	0.00	5,777.49	291.10	356.13	459.96	0.00	0.00	0.00
5,900.00	0.00	0.00	5,877.49	291.10	356.13	459.96	0.00	0.00	0.00
6,000.00	0.00	0.00	5,977.49	291.10	356.13	459.96	0.00	0.00	0.00
6,100.00	0.00	0.00	6,077.49	291.10	356.13	459.96	0.00	0.00	0.00
6,200.00	0.00	0.00	6,177.49	291.10	356.13	459.96	0.00	0.00	0.00
6,250.51	0.00	0.00	6,228.00	291.10	356.13	459.96	0.00	0.00	0.00
CME0									
6,300.00	0.00	0.00	6,277.49	291.10	356.13	459.96	0.00	0.00	0.00
6,400.00	0.00	0.00	6,377.49	291.10	356.13	459.96	0.00	0.00	0.00
6,500.00	0.00	0.00	6,477.49	291.10	356.13	459.96	0.00	0.00	0.00
6,600.00	0.00	0.00	6,577.49	291.10	356.13	459.96	0.00	0.00	0.00
6,700.00	0.00	0.00	6,677.49	291.10	356.13	459.96	0.00	0.00	0.00
6,733.51	0.00	0.00	6,711.00	291.10	356.13	459.96	0.00	0.00	0.00
RLNS									
6,800.00	0.00	0.00	6,777.49	291.10	356.13	459.96	0.00	0.00	0.00
6,883.51	0.00	0.00	6,861.00	291.10	356.13	459.96	0.00	0.00	0.00
GM 332-10 PBHL									

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 332-10 KMW - plan hits target center - Circle (radius 25.00)	0.00	0.00	5,006.00	291.10	356.13	1,600,649.00	2,267,285.60	39.4538177	-108.0952301
GM 332-10 PBHL - plan hits target center - Point	0.00	0.00	6,861.00	291.10	356.13	1,600,649.00	2,267,285.60	39.4538177	-108.0952301

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<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6148' & RKB 24' @ 6172.00usft (H&P 318)
<b>Site:</b>	MV 5-10 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal GM 332-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2 21Sept2016 jcsdi		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	996.30	9 5/8" @ 1000' MD	9.62	9.62	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,178.58	2,169.00	G_SAND		0.00	0.00	
2,284.10	2,274.00	G_SAND_BASE		0.00	0.00	
3,798.65	3,781.00	MVRD		0.00	0.00	
5,028.51	5,006.00	KMVGAS		0.00	0.00	
6,250.51	6,228.00	CMEO		0.00	0.00	
6,733.51	6,711.00	RLNS		0.00	0.00	