

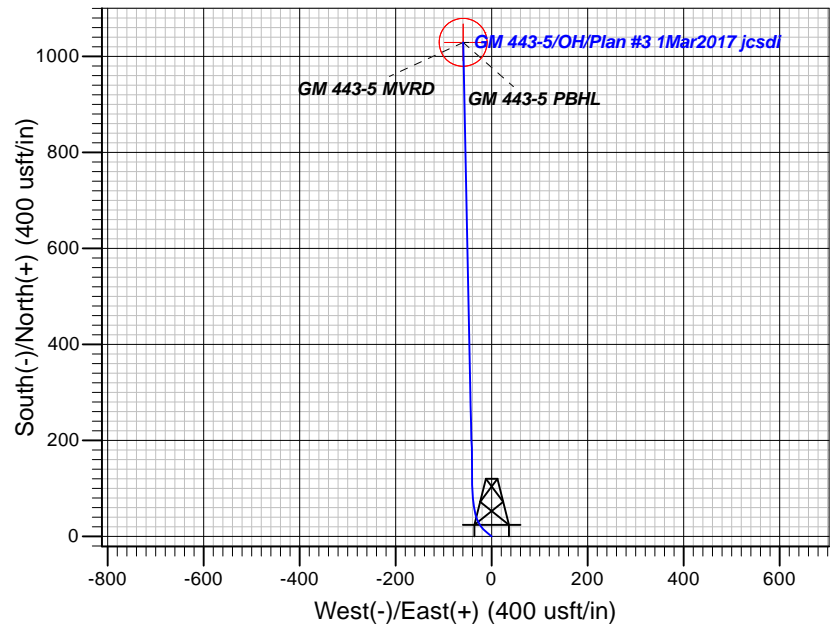
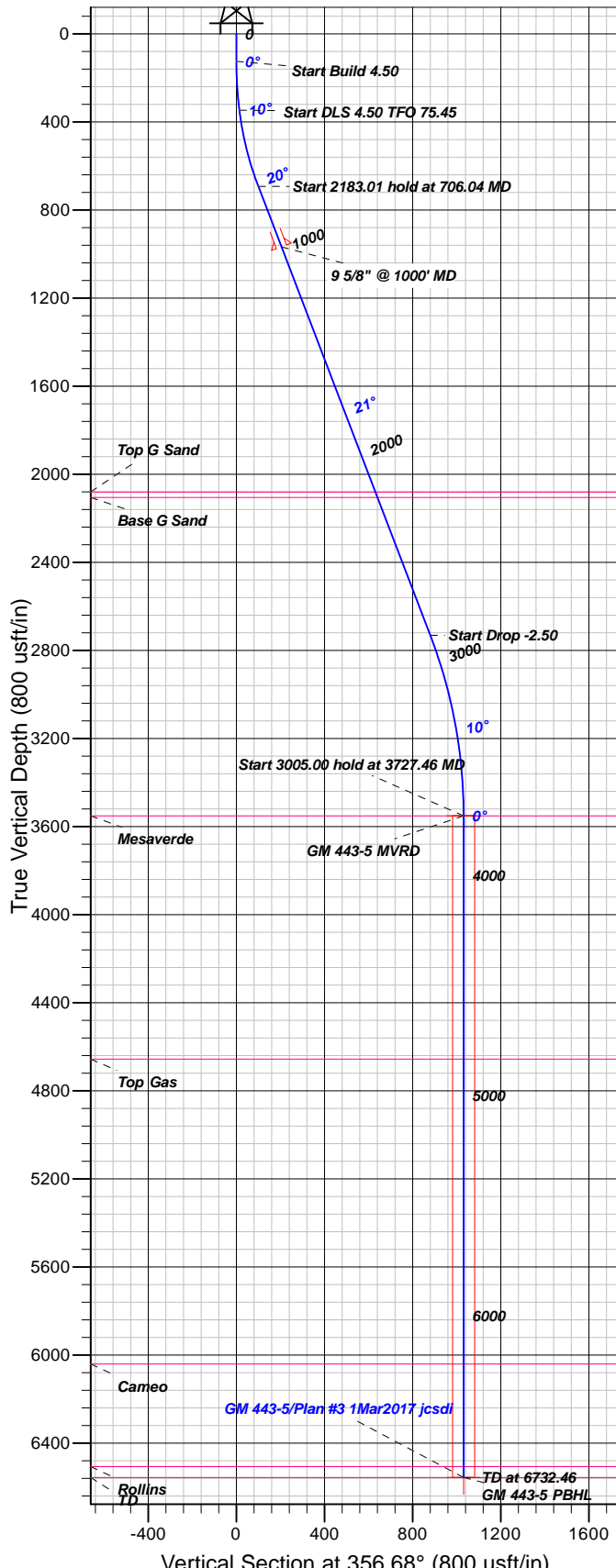
Well Details: GM 443-5

GL 5977' & RKB 24' @ 6001.00usft (H&P 271)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1603507.86	2258792.35	39.4609934	-108.1255886	A7

T M Azimuths to True North
Magnetic North: 9.65°

Magnetic Field
Strength: 51850.7snT
Dip Angle: 65.78°
Date: 12/21/2016
Model: HDGM



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2081.00	2192.81	Top G Sand
2106.00	2219.58	Base G Sand
3551.00	3727.46	Mesaverde
4656.00	4832.46	Top Gas
6041.00	6217.46	Cameo
6506.00	6682.46	Rollins
6556.00	6732.46	TD

Plan: Plan #3 1Mar2017 jcsdi

16:23, March 06 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
967.12	1000.00	9 5/8" @ 1000' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	125.00	0.00	0.00	125.00	0.00	0.00	0.00	0.00	0.00	
3	347.22	10.00	310.00	346.10	12.43	-14.82	4.50	310.00	13.27	
4	706.04	20.96	358.81	692.61	97.18	-40.19	4.50	75.45	99.35	
5	2889.04	20.96	358.81	2731.16	877.92	-56.47	0.00	0.00	879.72	
6	3727.46	0.00	0.00	3551.00	1029.55	-59.64	2.50	180.00	1031.27	GM 443-5 MVRD
7	6732.46	0.00	0.00	6556.00	1029.55	-59.64	0.00	0.00	1031.27	GM 443-5 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 443-5 MVRD	3551.00	1029.55	-59.64	1604538.70	2258762.49	39.4638200	-108.1257998	Circle (Radius: 50.00)
- plan hits target center								
GM 443-5 PBHL	6556.00	1029.55	-59.64	1604538.70	2258762.49	39.4638200	-108.1257998	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 34-5 Pad

GM 443-5 - Slot A7

OH

Plan: Plan #3 1Mar2017 jcsdi

Standard Planning Report

06 March, 2017



Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 443-5 - Slot A7
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
Project:	Garfield County, CO NAD83	MD Reference:	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
Site:	MV 34-5 Pad	North Reference:	True
Well:	GM 443-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 1Mar2017 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 34-5 Pad			
Site Position:		Northing:	1,603,476.79 usft	Latitude:	39.4609066
From:	Map	Easting:	2,258,772.10 usft	Longitude:	-108.1256571
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.66 °

Well	GM 443-5 - Slot A7					
Well Position	+N/-S	31.64 usft	Northing:	1,603,507.86 usft	Latitude:	39.4609935
	+E/-W	19.34 usft	Easting:	2,258,792.35 usft	Longitude:	-108.1255886
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,977.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/21/2016	9.65	65.78	51,851

Design	Plan #3 1Mar2017 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	356.68

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	
125.00	0.00	0.00	125.00	0.00	0.00	0.00	0.00	0.00	0.00	
347.22	10.00	310.00	346.10	12.43	-14.82	4.50	4.50	0.00	310.00	
706.04	20.96	358.81	692.61	97.18	-40.19	4.50	3.05	13.60	75.45	
2,889.04	20.96	358.81	2,731.16	877.92	-56.47	0.00	0.00	0.00	0.00	
3,727.46	0.00	0.00	3,551.00	1,029.55	-59.64	2.50	-2.50	0.00	180.00	GM 443-5 MVRD
6,732.46	0.00	0.00	6,556.00	1,029.55	-59.64	0.00	0.00	0.00	0.00	GM 443-5 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 443-5 - Slot A7
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
Project:	Garfield County, CO NAD83	MD Reference:	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
Site:	MV 34-5 Pad	North Reference:	True
Well:	GM 443-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 1Mar2017 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	
125.00	0.00	0.00	125.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	3.38	310.00	199.96	1.42	-1.69	1.51	4.50	4.50	0.00	
300.00	7.88	310.00	299.45	7.72	-9.20	8.24	4.50	4.50	0.00	
347.22	10.00	310.00	346.10	12.43	-14.82	13.27	4.50	4.50	0.00	
400.00	10.84	322.31	398.01	19.31	-21.36	20.51	4.50	1.59	23.33	
500.00	13.47	339.84	495.79	37.69	-31.13	39.43	4.50	2.63	17.52	
600.00	16.89	351.07	592.31	62.99	-37.40	65.04	4.50	3.42	11.24	
700.00	20.72	358.44	686.97	95.04	-40.14	97.20	4.50	3.83	7.37	
706.04	20.96	358.81	692.61	97.18	-40.19	99.35	4.50	3.97	5.98	
800.00	20.96	358.81	780.35	130.79	-40.89	132.94	0.00	0.00	0.00	
900.00	20.96	358.81	873.74	166.55	-41.64	168.68	0.00	0.00	0.00	
1,000.00	20.96	358.81	967.12	202.32	-42.38	204.43	0.00	0.00	0.00	
9 5/8" @ 1000' MD										
1,100.00	20.96	358.81	1,060.50	238.08	-43.13	240.18	0.00	0.00	0.00	
1,200.00	20.96	358.81	1,153.89	273.85	-43.87	275.93	0.00	0.00	0.00	
1,300.00	20.96	358.81	1,247.27	309.61	-44.62	311.67	0.00	0.00	0.00	
1,400.00	20.96	358.81	1,340.65	345.38	-45.37	347.42	0.00	0.00	0.00	
1,500.00	20.96	358.81	1,434.03	381.14	-46.11	383.17	0.00	0.00	0.00	
1,600.00	20.96	358.81	1,527.42	416.91	-46.86	418.92	0.00	0.00	0.00	
1,700.00	20.96	358.81	1,620.80	452.67	-47.60	454.67	0.00	0.00	0.00	
1,800.00	20.96	358.81	1,714.18	488.43	-48.35	490.41	0.00	0.00	0.00	
1,900.00	20.96	358.81	1,807.57	524.20	-49.10	526.16	0.00	0.00	0.00	
2,000.00	20.96	358.81	1,900.95	559.96	-49.84	561.91	0.00	0.00	0.00	
2,100.00	20.96	358.81	1,994.33	595.73	-50.59	597.66	0.00	0.00	0.00	
2,192.81	20.96	358.81	2,081.00	628.92	-51.28	630.83	0.00	0.00	0.00	
Top G Sand										
2,200.00	20.96	358.81	2,087.71	631.49	-51.33	633.40	0.00	0.00	0.00	
2,219.58	20.96	358.81	2,106.00	638.50	-51.48	640.40	0.00	0.00	0.00	
Base G Sand										
2,300.00	20.96	358.81	2,181.10	667.26	-52.08	669.15	0.00	0.00	0.00	
2,400.00	20.96	358.81	2,274.48	703.02	-52.83	704.90	0.00	0.00	0.00	
2,500.00	20.96	358.81	2,367.86	738.79	-53.57	740.65	0.00	0.00	0.00	
2,600.00	20.96	358.81	2,461.25	774.55	-54.32	776.40	0.00	0.00	0.00	
2,700.00	20.96	358.81	2,554.63	810.31	-55.06	812.14	0.00	0.00	0.00	
2,800.00	20.96	358.81	2,648.01	846.08	-55.81	847.89	0.00	0.00	0.00	
2,889.04	20.96	358.81	2,731.16	877.92	-56.47	879.72	0.00	0.00	0.00	
2,900.00	20.69	358.81	2,741.40	881.82	-56.55	883.61	2.50	-2.50	0.00	
3,000.00	18.19	358.81	2,835.70	915.09	-57.25	916.86	2.50	-2.50	0.00	
3,100.00	15.69	358.81	2,931.35	944.21	-57.86	945.97	2.50	-2.50	0.00	
3,200.00	13.19	358.81	3,028.19	969.13	-58.38	970.88	2.50	-2.50	0.00	
3,300.00	10.69	358.81	3,126.02	989.81	-58.81	991.55	2.50	-2.50	0.00	
3,400.00	8.19	358.81	3,224.66	1,006.20	-59.15	1,007.93	2.50	-2.50	0.00	
3,500.00	5.69	358.81	3,323.92	1,018.27	-59.40	1,020.00	2.50	-2.50	0.00	
3,600.00	3.19	358.81	3,423.61	1,026.00	-59.56	1,027.73	2.50	-2.50	0.00	
3,700.00	0.69	358.81	3,523.54	1,029.38	-59.63	1,031.11	2.50	-2.50	0.00	
3,727.46	0.00	0.00	3,551.00	1,029.55	-59.64	1,031.27	2.50	-2.50	0.00	
Mesaverde - GM 443-5 MVRD										
3,746.46	0.00	0.00	3,570.00	1,029.55	-59.64	1,031.27	0.00	0.00	0.00	
GM 532-4 MVRD										

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 443-5 - Slot A7
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
Project:	Garfield County, CO NAD83	MD Reference:	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
Site:	MV 34-5 Pad	North Reference:	True
Well:	GM 443-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 1Mar2017 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)
3,800.00	0.00	0.00	3,623.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
3,900.00	0.00	0.00	3,723.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,000.00	0.00	0.00	3,823.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,100.00	0.00	0.00	3,923.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,200.00	0.00	0.00	4,023.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,300.00	0.00	0.00	4,123.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,400.00	0.00	0.00	4,223.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,500.00	0.00	0.00	4,323.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,600.00	0.00	0.00	4,423.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,700.00	0.00	0.00	4,523.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,800.00	0.00	0.00	4,623.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
4,832.46	0.00	0.00	4,656.00	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
Top Gas									
4,882.46	0.00	0.00	4,706.00	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
GM 532-4 KMV									
4,900.00	0.00	0.00	4,723.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,000.00	0.00	0.00	4,823.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,100.00	0.00	0.00	4,923.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,200.00	0.00	0.00	5,023.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,300.00	0.00	0.00	5,123.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,400.00	0.00	0.00	5,223.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,500.00	0.00	0.00	5,323.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,600.00	0.00	0.00	5,423.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,700.00	0.00	0.00	5,523.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,800.00	0.00	0.00	5,623.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
5,900.00	0.00	0.00	5,723.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
6,000.00	0.00	0.00	5,823.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
6,100.00	0.00	0.00	5,923.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
6,200.00	0.00	0.00	6,023.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
6,217.46	0.00	0.00	6,041.00	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
Cameo									
6,300.00	0.00	0.00	6,123.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
6,400.00	0.00	0.00	6,223.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
6,500.00	0.00	0.00	6,323.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
6,600.00	0.00	0.00	6,423.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
6,682.46	0.00	0.00	6,506.00	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
Rollins									
6,700.00	0.00	0.00	6,523.54	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
6,732.46	0.00	0.00	6,556.00	1,029.55	-59.64	1,031.27	0.00	0.00	0.00
TD - GM 532-4 PBHL - GM 443-5 PBHL									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 443-5 - Slot A7
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
Project:	Garfield County, CO NAD83	MD Reference:	GL 5977' & RKB 24' @ 6001.00usft (H&P 271)
Site:	MV 34-5 Pad	North Reference:	True
Well:	GM 443-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 1Mar2017 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 443-5 MVRD - plan hits target center - Circle (radius 50.00)	0.00	0.00	3,551.00	1,029.55	-59.64	1,604,538.70	2,258,762.49	39.4638201	-108.1257998
GM 443-5 PBHL - plan hits target center - Point	0.00	0.00	6,556.00	1,029.55	-59.64	1,604,538.70	2,258,762.49	39.4638201	-108.1257998

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	967.12	9 5/8" @ 1000' MD	9.62	9.62	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,192.81	2,081.00	Top G Sand		0.00	0.00
2,219.58	2,106.00	Base G Sand		0.00	0.00
3,727.46	3,551.00	Mesaverde		0.00	0.00
4,832.46	4,656.00	Top Gas		0.00	0.00
6,217.46	6,041.00	Cameo		0.00	0.00
6,682.46	6,506.00	Rollins		0.00	0.00
6,732.46	6,556.00	TD		0.00	0.00