

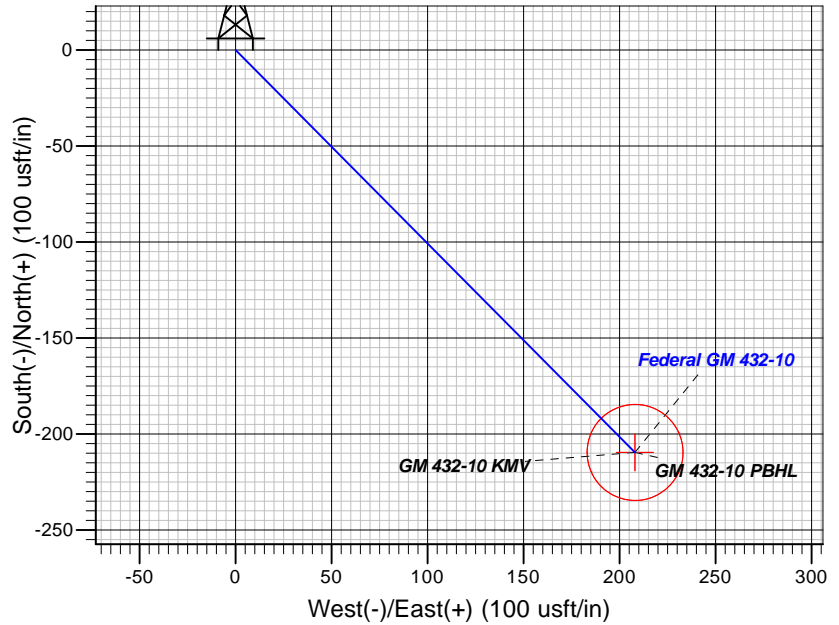
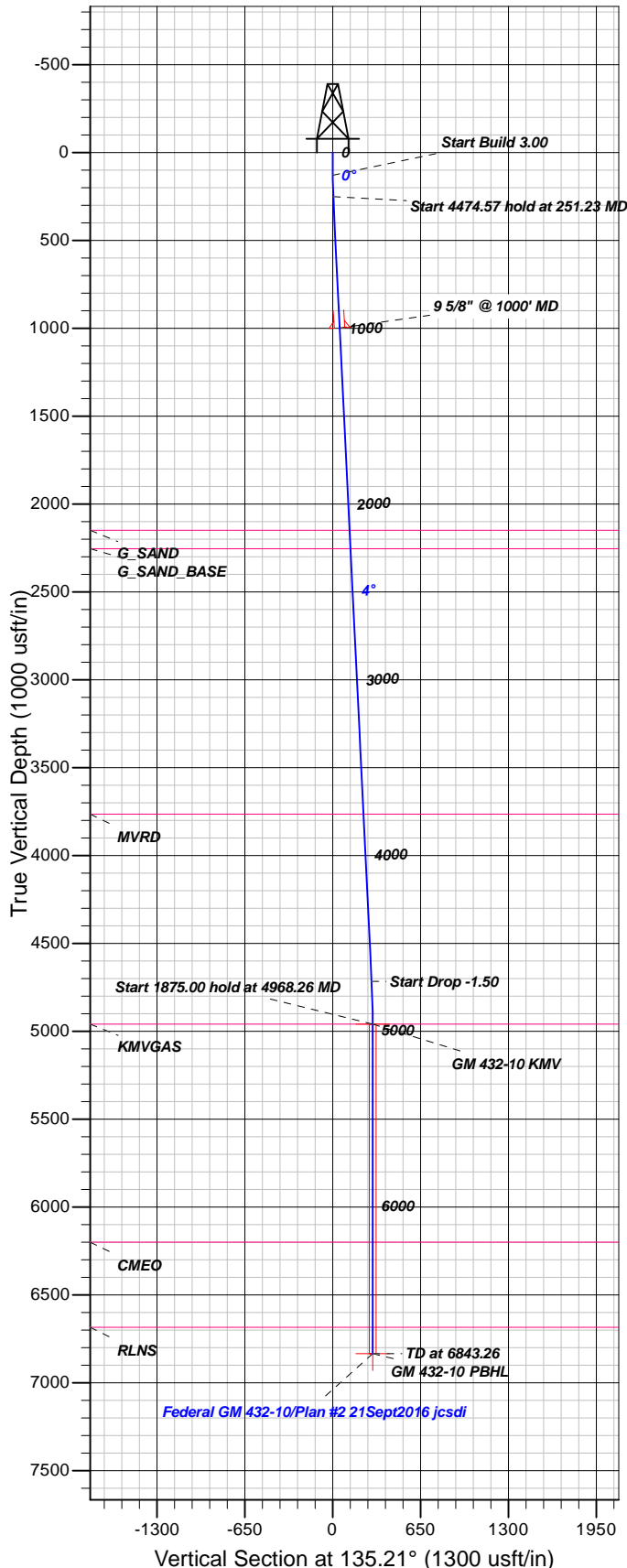
Well Details: Federal GM 432-10

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1600342.30	2266874.50	39.4529437	-108.0966543	A8

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
2149.00	2152.91	G_SAND
2254.00	2258.12	G_SAND_BASE
3764.00	3771.17	MVRD
4959.00	4968.26	KMVGAS
6200.00	6209.26	CMEQ
6684.00	6693.26	RLNS

Plan: Plan #2 21Sept2016 jcsdi

18:29, 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
998.41	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	251.23	3.64	135.21	251.15	-2.73	2.71	3.00	135.21	3.85	
4	4725.80	3.64	135.21	4716.71	-204.18	202.66	0.00	0.00	287.68	
5	4968.26	0.00	0.00	4959.00	-209.64	208.08	1.50	180.00	295.37	GM 432-10 KMV
6	6843.26	0.00	0.00	6834.00	-209.64	208.08	0.00	0.00	295.37	GM 432-10 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 432-10 KMV	4959.00	-209.64	208.08	1600126.80	2267076.50	39.4523682	-108.0959175	Circle (Radius: 25.00)
- plan hits target center								
GM 432-10 PBHL	6834.00	-209.64	208.08	1600126.80	2267076.50	39.4523682	-108.0959175	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

MV 5-10 Pad

Federal GM 432-10 - Slot A8

OH

Plan: Plan #2 21Sept2016 jcsdi

Standard Planning Report

22 September, 2016



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 432-10 - Slot A8
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 432-10	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 432-10 - Slot A8			
Well Position	+N/-S	-2.60 usft	Northing:	1,600,342.30 usft
	+E/-W	-7.13 usft	Easting:	2,266,874.50 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	135.21

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	
251.23	3.64	135.21	251.15	-2.73	2.71	3.00	3.00	0.00	135.21	
4,725.80	3.64	135.21	4,716.71	-204.18	202.66	0.00	0.00	0.00	0.00	
4,968.26	0.00	0.00	4,959.00	-209.64	208.08	1.50	-1.50	0.00	180.00	GM 432-10 KMV
6,843.26	0.00	0.00	6,834.00	-209.64	208.08	0.00	0.00	0.00	0.00	GM 432-10 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 432-10 - Slot A8
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 432-10	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	2.10	135.21	199.98	-0.91	0.90	1.28	3.00	3.00	0.00
251.23	3.64	135.21	251.15	-2.73	2.71	3.85	3.00	3.00	0.00
300.00	3.64	135.21	299.82	-4.93	4.89	6.94	0.00	0.00	0.00
400.00	3.64	135.21	399.62	-9.43	9.36	13.28	0.00	0.00	0.00
500.00	3.64	135.21	499.42	-13.93	13.83	19.63	0.00	0.00	0.00
600.00	3.64	135.21	599.22	-18.43	18.29	25.97	0.00	0.00	0.00
700.00	3.64	135.21	699.01	-22.93	22.76	32.31	0.00	0.00	0.00
800.00	3.64	135.21	798.81	-27.44	27.23	38.66	0.00	0.00	0.00
900.00	3.64	135.21	898.61	-31.94	31.70	45.00	0.00	0.00	0.00
1,000.00	3.64	135.21	998.41	-36.44	36.17	51.34	0.00	0.00	0.00
9 5/8" @ 1000' MD									
1,100.00	3.64	135.21	1,098.21	-40.94	40.64	57.69	0.00	0.00	0.00
1,200.00	3.64	135.21	1,198.01	-45.44	45.11	64.03	0.00	0.00	0.00
1,300.00	3.64	135.21	1,297.81	-49.95	49.57	70.37	0.00	0.00	0.00
1,400.00	3.64	135.21	1,397.61	-54.45	54.04	76.72	0.00	0.00	0.00
1,500.00	3.64	135.21	1,497.40	-58.95	58.51	83.06	0.00	0.00	0.00
1,600.00	3.64	135.21	1,597.20	-63.45	62.98	89.40	0.00	0.00	0.00
1,700.00	3.64	135.21	1,697.00	-67.95	67.45	95.75	0.00	0.00	0.00
1,800.00	3.64	135.21	1,796.80	-72.46	71.92	102.09	0.00	0.00	0.00
1,900.00	3.64	135.21	1,896.60	-76.96	76.39	108.43	0.00	0.00	0.00
2,000.00	3.64	135.21	1,996.40	-81.46	80.85	114.78	0.00	0.00	0.00
2,100.00	3.64	135.21	2,096.20	-85.96	85.32	121.12	0.00	0.00	0.00
2,152.91	3.64	135.21	2,149.00	-88.35	87.69	124.47	0.00	0.00	0.00
G_SAND									
2,200.00	3.64	135.21	2,195.99	-90.47	89.79	127.46	0.00	0.00	0.00
2,258.12	3.64	135.21	2,254.00	-93.08	92.39	131.15	0.00	0.00	0.00
G_SAND_BASE									
2,300.00	3.64	135.21	2,295.79	-94.97	94.26	133.80	0.00	0.00	0.00
2,400.00	3.64	135.21	2,395.59	-99.47	98.73	140.15	0.00	0.00	0.00
2,500.00	3.64	135.21	2,495.39	-103.97	103.20	146.49	0.00	0.00	0.00
2,600.00	3.64	135.21	2,595.19	-108.47	107.67	152.83	0.00	0.00	0.00
2,700.00	3.64	135.21	2,694.99	-112.98	112.13	159.18	0.00	0.00	0.00
2,800.00	3.64	135.21	2,794.79	-117.48	116.60	165.52	0.00	0.00	0.00
2,900.00	3.64	135.21	2,894.58	-121.98	121.07	171.86	0.00	0.00	0.00
3,000.00	3.64	135.21	2,994.38	-126.48	125.54	178.21	0.00	0.00	0.00
3,100.00	3.64	135.21	3,094.18	-130.98	130.01	184.55	0.00	0.00	0.00
3,200.00	3.64	135.21	3,193.98	-135.49	134.48	190.89	0.00	0.00	0.00
3,300.00	3.64	135.21	3,293.78	-139.99	138.94	197.24	0.00	0.00	0.00
3,400.00	3.64	135.21	3,393.58	-144.49	143.41	203.58	0.00	0.00	0.00
3,500.00	3.64	135.21	3,493.38	-148.99	147.88	209.92	0.00	0.00	0.00
3,600.00	3.64	135.21	3,593.17	-153.49	152.35	216.27	0.00	0.00	0.00
3,700.00	3.64	135.21	3,692.97	-158.00	156.82	222.61	0.00	0.00	0.00
3,771.17	3.64	135.21	3,764.00	-161.20	160.00	227.12	0.00	0.00	0.00
MVRD									
3,800.00	3.64	135.21	3,792.77	-162.50	161.29	228.95	0.00	0.00	0.00
3,900.00	3.64	135.21	3,892.57	-167.00	165.76	235.30	0.00	0.00	0.00
4,000.00	3.64	135.21	3,992.37	-171.50	170.22	241.64	0.00	0.00	0.00
4,100.00	3.64	135.21	4,092.17	-176.01	174.69	247.98	0.00	0.00	0.00
4,200.00	3.64	135.21	4,191.97	-180.51	179.16	254.33	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal GM 432-10 - Slot A8
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 432-10	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)
4,300.00	3.64	135.21	4,291.77	-185.01	183.63	260.67	0.00	0.00	0.00
4,400.00	3.64	135.21	4,391.56	-189.51	188.10	267.01	0.00	0.00	0.00
4,500.00	3.64	135.21	4,491.36	-194.01	192.57	273.36	0.00	0.00	0.00
4,600.00	3.64	135.21	4,591.16	-198.52	197.04	279.70	0.00	0.00	0.00
4,700.00	3.64	135.21	4,690.96	-203.02	201.50	286.04	0.00	0.00	0.00
4,725.80	3.64	135.21	4,716.71	-204.18	202.66	287.68	0.00	0.00	0.00
4,800.00	2.52	135.21	4,790.80	-207.01	205.47	291.67	1.50	-1.50	0.00
4,900.00	1.02	135.21	4,890.75	-209.21	207.65	294.76	1.50	-1.50	0.00
4,968.26	0.00	0.00	4,959.00	-209.64	208.08	295.37	1.50	-1.50	-198.10
KMVGAS - GM 432-10 KMV									
5,000.00	0.00	0.00	4,990.74	-209.64	208.08	295.37	0.00	0.00	0.00
5,100.00	0.00	0.00	5,090.74	-209.64	208.08	295.37	0.00	0.00	0.00
5,200.00	0.00	0.00	5,190.74	-209.64	208.08	295.37	0.00	0.00	0.00
5,300.00	0.00	0.00	5,290.74	-209.64	208.08	295.37	0.00	0.00	0.00
5,400.00	0.00	0.00	5,390.74	-209.64	208.08	295.37	0.00	0.00	0.00
5,500.00	0.00	0.00	5,490.74	-209.64	208.08	295.37	0.00	0.00	0.00
5,600.00	0.00	0.00	5,590.74	-209.64	208.08	295.37	0.00	0.00	0.00
5,700.00	0.00	0.00	5,690.74	-209.64	208.08	295.37	0.00	0.00	0.00
5,800.00	0.00	0.00	5,790.74	-209.64	208.08	295.37	0.00	0.00	0.00
5,900.00	0.00	0.00	5,890.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,000.00	0.00	0.00	5,990.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,100.00	0.00	0.00	6,090.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,200.00	0.00	0.00	6,190.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,209.26	0.00	0.00	6,200.00	-209.64	208.08	295.37	0.00	0.00	0.00
CME0									
6,300.00	0.00	0.00	6,290.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,400.00	0.00	0.00	6,390.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,500.00	0.00	0.00	6,490.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,600.00	0.00	0.00	6,590.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,693.26	0.00	0.00	6,684.00	-209.64	208.08	295.37	0.00	0.00	0.00
RLNS									
6,700.00	0.00	0.00	6,690.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,800.00	0.00	0.00	6,790.74	-209.64	208.08	295.37	0.00	0.00	0.00
6,843.26	0.00	0.00	6,834.00	-209.64	208.08	295.37	0.00	0.00	0.00
GM 432-10 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 432-10 KMV - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,959.00	-209.64	208.08	1,600,126.80	2,267,076.50	39.4523682	-108.0959175
GM 432-10 PBHL - plan hits target center - Point	0.00	0.00	6,834.00	-209.64	208.08	1,600,126.80	2,267,076.50	39.4523682	-108.0959175

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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 432-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 21Sept2016 jcsdi		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	998.41	9 5/8" @ 1000' MD	9.62	9.62	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,152.91	2,149.00	G_SAND		0.00	0.00	
2,258.12	2,254.00	G_SAND_BASE		0.00	0.00	
3,771.17	3,764.00	MVRD		0.00	0.00	
4,968.26	4,959.00	KMVGAS		0.00	0.00	
6,209.26	6,200.00	CMEO		0.00	0.00	
6,693.26	6,684.00	RLNS		0.00	0.00	