

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 423-26 KMV	3350.0	-1519.36	-495.53	1583274.90	2271787.20	39.4064883	-108.0775487	Sphere (Radius: 50.00)
plan misses target center by 42.87usft at 3767.86usd MD (3357.15 TVD, -1479.17 N, -482.43 E)								
SG 423-26 PBHL	5175.0	-1519.36	-495.53	1583274.90	2271787.20	39.4064883	-108.0775487	Point
plan misses target center by 0.01usft at 5588.14usd MD (5175.00 TVD, -1519.36 N, -495.54 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 32-26 Pad

SG 423-26

OH

Plan: Plan #1 21Feb2018 mmsdi

Standard Planning Report

22 February, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 423-26
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5076' & RKB 24' @ 5100.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5076' & RKB 24' @ 5100.00usft
Site:	SG 32-26 Pad	North Reference:	True
Well:	SG 423-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 21Feb2018 mmsdi		

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		SG 32-26 Pad			
Site Position:		Northing:		1,584,791.50 usft	
From:		Easting:		2,272,334.80 usft	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
Map		0.00 usft		13.20 in	
				39.4106932	
				-108.0757637	
				-1.62 °	

Well	SG 423-26					
Well Position	+N/-S	-12.16 usft	Northing:	1,584,779.60 usft	Latitude:	39.4106598
	+E/-W	-8.86 usft	Easting:	2,272,325.60 usft	Longitude:	-108.0757951
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,076.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/21/2018	9.42	65.60	51,743

Design	Plan #1 21Feb2018 mmsdi			
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	198.06

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	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,127.75	34.75	198.06	1,068.01	-277.52	-90.51	3.50	3.50	0.00	198.06	
2,523.28	34.75	198.06	2,214.69	-1,033.69	-337.14	0.00	0.00	0.00	0.00	
3,760.60	10.00	198.06	3,350.00	-1,477.98	-482.04	2.00	-2.00	0.00	180.00	
4,260.60	0.00	0.00	3,847.47	-1,519.36	-495.54	2.00	-2.00	32.39	180.00	
5,588.14	0.00	0.00	5,175.00	-1,519.36	-495.54	0.00	0.00	0.00	0.00	SG 423-26 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 423-26
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5076' & RKB 24' @ 5100.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5076' & RKB 24' @ 5100.00usft
Site:	SG 32-26 Pad	North Reference:	True
Well:	SG 423-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 21Feb2018 mmsdi		

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
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.50									
200.00	2.28	198.06	199.98	-1.23	-0.40	1.29	3.50	3.50	0.00
300.00	5.78	198.06	299.72	-7.90	-2.58	8.31	3.50	3.50	0.00
400.00	9.28	198.06	398.84	-20.35	-6.64	21.40	3.50	3.50	0.00
500.00	12.78	198.06	496.98	-38.53	-12.57	40.52	3.50	3.50	0.00
600.00	16.28	198.06	593.77	-62.37	-20.34	65.60	3.50	3.50	0.00
648.37	17.97	198.06	640.00	-75.90	-24.76	79.84	3.50	3.50	0.00
G Sand									
700.00	19.78	198.06	688.85	-91.78	-29.93	96.54	3.50	3.50	0.00
754.69	21.69	198.06	740.00	-110.19	-35.94	115.90	3.50	3.50	0.00
G Sand Base									
800.00	23.28	198.06	781.86	-126.66	-41.31	133.22	3.50	3.50	0.00
900.00	26.78	198.06	872.46	-166.87	-54.42	175.52	3.50	3.50	0.00
1,000.00	30.28	198.06	960.31	-212.26	-69.23	223.26	3.50	3.50	0.00
9 5/8" Casing @ 1000' MD									
1,070.02	32.73	198.06	1,020.00	-247.04	-80.57	259.85	3.50	3.50	0.00
FRUN									
1,100.00	33.78	198.06	1,045.07	-262.67	-85.67	276.28	3.50	3.50	0.00
1,127.75	34.75	198.06	1,068.01	-277.52	-90.51	291.91	3.50	3.50	0.00
Start 1395.53 hold at 1127.75 MD									
1,200.00	34.75	198.06	1,127.38	-316.67	-103.28	333.09	0.00	0.00	0.00
1,300.00	34.75	198.06	1,209.54	-370.85	-120.95	390.08	0.00	0.00	0.00
1,400.00	34.75	198.06	1,291.71	-425.04	-138.63	447.07	0.00	0.00	0.00
1,500.00	34.75	198.06	1,373.88	-479.22	-156.30	504.07	0.00	0.00	0.00
1,600.00	34.75	198.06	1,456.05	-533.41	-173.97	561.06	0.00	0.00	0.00
1,700.00	34.75	198.06	1,538.22	-587.60	-191.64	618.06	0.00	0.00	0.00
1,800.00	34.75	198.06	1,620.39	-641.78	-209.32	675.05	0.00	0.00	0.00
1,900.00	34.75	198.06	1,702.55	-695.97	-226.99	732.05	0.00	0.00	0.00
2,000.00	34.75	198.06	1,784.72	-750.15	-244.66	789.04	0.00	0.00	0.00
2,100.00	34.75	198.06	1,866.89	-804.34	-262.33	846.04	0.00	0.00	0.00
2,200.00	34.75	198.06	1,949.06	-858.52	-280.01	903.03	0.00	0.00	0.00
2,300.00	34.75	198.06	2,031.23	-912.71	-297.68	960.03	0.00	0.00	0.00
2,400.00	34.75	198.06	2,113.40	-966.89	-315.35	1,017.02	0.00	0.00	0.00
2,500.00	34.75	198.06	2,195.56	-1,021.08	-333.02	1,074.01	0.00	0.00	0.00
2,523.28	34.75	198.06	2,214.69	-1,033.69	-337.14	1,087.28	0.00	0.00	0.00
Start Drop -2.00									
2,541.87	34.37	198.06	2,230.00	-1,043.72	-340.41	1,097.83	2.00	-2.00	0.00
OCRK - MVRD									
2,600.00	33.21	198.06	2,278.31	-1,074.46	-350.43	1,130.16	2.00	-2.00	0.00
2,700.00	31.21	198.06	2,362.91	-1,125.13	-366.96	1,183.46	2.00	-2.00	0.00
2,800.00	29.21	198.06	2,449.33	-1,172.97	-382.56	1,233.78	2.00	-2.00	0.00
2,900.00	27.21	198.06	2,537.44	-1,217.91	-397.22	1,281.05	2.00	-2.00	0.00
3,000.00	25.21	198.06	2,627.15	-1,259.90	-410.91	1,325.22	2.00	-2.00	0.00
3,100.00	23.21	198.06	2,718.35	-1,298.89	-423.63	1,366.23	2.00	-2.00	0.00
3,200.00	21.21	198.06	2,810.93	-1,334.83	-435.35	1,404.03	2.00	-2.00	0.00
3,300.00	19.21	198.06	2,904.76	-1,367.67	-446.06	1,438.58	2.00	-2.00	0.00
3,400.00	17.21	198.06	2,999.75	-1,397.39	-455.75	1,469.83	2.00	-2.00	0.00
3,500.00	15.21	198.06	3,095.77	-1,423.93	-464.41	1,497.75	2.00	-2.00	0.00
3,600.00	13.21	198.06	3,192.70	-1,447.27	-472.02	1,522.30	2.00	-2.00	0.00
3,700.00	11.21	198.06	3,290.44	-1,467.38	-478.58	1,543.45	2.00	-2.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well SG 423-26
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5076' & RKB 24' @ 5100.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5076' & RKB 24' @ 5100.00usft
Site:	SG 32-26 Pad	North Reference:	True
Well:	SG 423-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 21Feb2018 mmsdi		

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)
3,760.60	10.00	198.06	3,350.00	-1,477.98	-482.04	1,554.60	2.00	-2.00	0.00
Start DLS 2.00 TFO 180.00 - KMGAS									
3,767.86	9.85	198.06	3,357.15	-1,479.17	-482.43	1,555.85	2.00	-2.00	0.00
SG 423-26 KMV									
3,800.00	9.21	198.06	3,388.85	-1,484.23	-484.08	1,561.18	2.00	-2.00	0.00
3,900.00	7.21	198.06	3,487.82	-1,497.81	-488.51	1,575.46	2.00	-2.00	0.00
4,000.00	5.21	198.06	3,587.22	-1,508.10	-491.86	1,586.28	2.00	-2.00	0.00
4,100.00	3.21	198.06	3,686.95	-1,515.08	-494.14	1,593.62	2.00	-2.00	0.00
4,200.00	1.21	198.06	3,786.87	-1,518.75	-495.34	1,597.48	2.00	-2.00	0.00
4,260.60	0.00	0.00	3,847.47	-1,519.36	-495.54	1,598.12	2.00	-2.00	267.22
Start 1327.53 hold at 4260.60 MD									
4,300.00	0.00	0.00	3,886.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
4,400.00	0.00	0.00	3,986.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
4,500.00	0.00	0.00	4,086.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
4,600.00	0.00	0.00	4,186.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
4,700.00	0.00	0.00	4,286.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
4,800.00	0.00	0.00	4,386.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
4,900.00	0.00	0.00	4,486.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
4,988.14	0.00	0.00	4,575.00	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
CMEO									
5,000.00	0.00	0.00	4,586.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
5,100.00	0.00	0.00	4,686.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
5,200.00	0.00	0.00	4,786.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
5,300.00	0.00	0.00	4,886.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
5,400.00	0.00	0.00	4,986.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
5,488.14	0.00	0.00	5,075.00	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
RLNS									
5,500.00	0.00	0.00	5,086.86	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
5,588.14	0.00	0.00	5,175.00	-1,519.36	-495.54	1,598.12	0.00	0.00	0.00
TD at 5588.14 - TD - SG 423-26 PBHL									

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
SG 423-26 KMV	0.00	0.00	3,350.00	-1,519.36	-495.53	1,583,274.90	2,271,787.20	39.4064883		-108.0775488
- plan misses target center by 42.87usft at 3767.86usft MD (3357.15 TVD, -1479.17 N, -482.43 E)										
- Circle (radius 50.00)										
SG 423-26 PBHL	0.00	0.00	5,175.00	-1,519.36	-495.53	1,583,274.90	2,271,787.20	39.4064883		-108.0775488
- plan misses target center by 0.01usft at 5588.14usft MD (5175.00 TVD, -1519.36 N, -495.54 E)										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,000.00	960.31	9 5/8" Casing @ 1000' MD		9.62	13.50

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Project:	Garfield County, CO NAD83	MD Reference:	GL 5076' & RKB 24' @ 5100.00usft
Site:	SG 32-26 Pad	North Reference:	True
Well:	SG 423-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 21Feb2018 mmsdi		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
648.37	640.00	G Sand		0.00	0.00	
754.69	740.00	G Sand Base		0.00	0.00	
1,070.02	1,020.00	FRUN		0.00	0.00	
2,541.87	2,230.00	OCRK		0.00	0.00	
2,541.87	2,230.00	MVRD		0.00	0.00	
3,760.60	3,350.00	KMVGAS		0.00	0.00	
4,988.14	4,575.00	CMEO		0.00	0.00	
5,488.14	5,075.00	RLNS		0.00	0.00	
5,588.14	5,175.00	TD		0.00	0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
135.00	135.00	0.00	0.00	Start Build 3.50	
1,127.75	1,068.01	-277.52	-90.51	Start 1395.53 hold at 1127.75 MD	
2,523.28	2,214.69	-1,033.69	-337.14	Start Drop -2.00	
3,760.60	3,350.00	-1,477.98	-482.04	Start DLS 2.00 TFO 180.00	
4,260.60	3,847.47	-1,519.36	-495.54	Start 1327.53 hold at 4260.60 MD	
5,588.14	5,175.00	-1,519.36	-495.54	TD at 5588.14	