

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PA 514-23 KMV	5727.00	1344.69	-2304.62	1617829.40	2302479.80	39.5036620	-107.9722930	Circle (Radius: 50.00)
- plan misses target center by 36.82usft at 6382.02usft MD (5732.01 TVD, 1326.31 N, -2273.12 E)								
PA 514-23 PBHL	8361.00	1344.69	-2304.62	1617829.40	2302479.80	39.5036620	-107.9722930	Point
- plan misses target center by 0.01usft at 9012.69usft MD (8361.00 TVD, 1344.69 N, -2304.62 E)								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

PA 31-26 Pad

PA 514-23 - Slot PA 514-23 (B6)

OH

Plan: Plan #3 19Jun2019mmsdi

Standard Planning Report

25 June, 2019



Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 514-23 - Slot PA 514-23 (B6)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 514-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

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	PA 31-26 Pad			
Site Position:		Northing:	1,616,455.80 usft	Latitude: 39.5000599
From: Map		Easting:	2,304,726.80 usft	Longitude: -107.9642007
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.55 °

Well	PA 514-23 - Slot PA 514-23 (B6)			
Well Position	+N/-S	-32.54 usft	Northing:	1,616,422.70 usft
	+E/-W	21.19 usft	Easting:	2,304,747.10 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level:	5,486.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/26/2018	9.40	65.77	51,650

Design	Plan #3 19Jun2019mmsdi			
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	300.26

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	
155.00	0.00	0.00	155.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,168.59	30.41	300.26	1,121.67	132.39	-226.91	3.00	3.00	0.00	300.26	
4,883.12	30.41	300.26	4,325.26	1,079.90	-1,850.80	0.00	0.00	0.00	0.00	
6,376.96	8.00	300.26	5,727.00	1,325.95	-2,272.51	1.50	-1.50	0.00	180.00	
6,910.29	0.00	0.00	6,258.60	1,344.69	-2,304.62	1.50	-1.50	0.00	180.00	
9,012.69	0.00	0.00	8,361.00	1,344.69	-2,304.62	0.00	0.00	0.00	0.00	PA 514-23 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 514-23 - Slot PA 514-23 (B6)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 514-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

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
155.00	0.00	0.00	155.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
200.00	1.35	300.26	200.00	0.27	-0.46	0.53	3.00	3.00	0.00
300.00	4.35	300.26	299.86	2.77	-4.75	5.50	3.00	3.00	0.00
400.00	7.35	300.26	399.33	7.91	-13.55	15.69	3.00	3.00	0.00
500.00	10.35	300.26	498.13	15.66	-26.84	31.08	3.00	3.00	0.00
600.00	13.35	300.26	595.98	26.01	-44.58	51.61	3.00	3.00	0.00
700.00	16.35	300.26	692.63	38.92	-66.71	77.23	3.00	3.00	0.00
800.00	19.35	300.26	787.81	54.37	-93.18	107.88	3.00	3.00	0.00
900.00	22.35	300.26	881.25	72.30	-123.92	143.47	3.00	3.00	0.00
1,000.00	25.35	300.26	972.70	92.68	-158.84	183.90	3.00	3.00	0.00
1,100.00	28.35	300.26	1,061.91	115.44	-197.85	229.06	3.00	3.00	0.00
9 5/8" Casing @ 1100' MD									
1,168.59	30.41	300.26	1,121.67	132.39	-226.91	262.71	3.00	3.00	0.00
Start 3714.53 hold at 1168.59 MD									
1,200.00	30.41	300.26	1,148.76	140.41	-240.64	278.61	0.00	0.00	0.00
1,300.00	30.41	300.26	1,235.01	165.92	-284.36	329.22	0.00	0.00	0.00
1,400.00	30.41	300.26	1,321.25	191.42	-328.08	379.84	0.00	0.00	0.00
1,500.00	30.41	300.26	1,407.50	216.93	-371.79	430.45	0.00	0.00	0.00
1,600.00	30.41	300.26	1,493.74	242.44	-415.51	481.07	0.00	0.00	0.00
1,700.00	30.41	300.26	1,579.99	267.95	-459.23	531.68	0.00	0.00	0.00
1,800.00	30.41	300.26	1,666.23	293.46	-502.94	582.30	0.00	0.00	0.00
1,900.00	30.41	300.26	1,752.48	318.96	-546.66	632.91	0.00	0.00	0.00
2,000.00	30.41	300.26	1,838.72	344.47	-590.38	683.53	0.00	0.00	0.00
2,100.00	30.41	300.26	1,924.97	369.98	-634.10	734.14	0.00	0.00	0.00
2,200.00	30.41	300.26	2,011.21	395.49	-677.81	784.76	0.00	0.00	0.00
2,300.00	30.41	300.26	2,097.46	421.00	-721.53	835.37	0.00	0.00	0.00
2,400.00	30.41	300.26	2,183.70	446.50	-765.25	885.99	0.00	0.00	0.00
2,500.00	30.41	300.26	2,269.94	472.01	-808.97	936.60	0.00	0.00	0.00
2,555.72	30.41	300.26	2,318.00	486.22	-833.33	964.80	0.00	0.00	0.00
G SAND TOP									
2,600.00	30.41	300.26	2,356.19	497.52	-852.68	987.22	0.00	0.00	0.00
2,636.88	30.41	300.26	2,388.00	506.93	-868.81	1,005.88	0.00	0.00	0.00
GSAND BASE									
2,700.00	30.41	300.26	2,442.43	523.03	-896.40	1,037.83	0.00	0.00	0.00
2,800.00	30.41	300.26	2,528.68	548.54	-940.12	1,088.44	0.00	0.00	0.00
2,900.00	30.41	300.26	2,614.92	574.04	-983.84	1,139.06	0.00	0.00	0.00
3,000.00	30.41	300.26	2,701.17	599.55	-1,027.55	1,189.67	0.00	0.00	0.00
3,100.00	30.41	300.26	2,787.41	625.06	-1,071.27	1,240.29	0.00	0.00	0.00
3,200.00	30.41	300.26	2,873.66	650.57	-1,114.99	1,290.90	0.00	0.00	0.00
3,300.00	30.41	300.26	2,959.90	676.07	-1,158.70	1,341.52	0.00	0.00	0.00
3,400.00	30.41	300.26	3,046.15	701.58	-1,202.42	1,392.13	0.00	0.00	0.00
3,500.00	30.41	300.26	3,132.39	727.09	-1,246.14	1,442.75	0.00	0.00	0.00
3,600.00	30.41	300.26	3,218.64	752.60	-1,289.86	1,493.36	0.00	0.00	0.00
3,700.00	30.41	300.26	3,304.88	778.11	-1,333.57	1,543.98	0.00	0.00	0.00
3,800.00	30.41	300.26	3,391.12	803.61	-1,377.29	1,594.59	0.00	0.00	0.00
3,900.00	30.41	300.26	3,477.37	829.12	-1,421.01	1,645.21	0.00	0.00	0.00
4,000.00	30.41	300.26	3,563.61	854.63	-1,464.73	1,695.82	0.00	0.00	0.00
4,100.00	30.41	300.26	3,649.86	880.14	-1,508.44	1,746.44	0.00	0.00	0.00
4,200.00	30.41	300.26	3,736.10	905.65	-1,552.16	1,797.05	0.00	0.00	0.00
4,300.00	30.41	300.26	3,822.35	931.15	-1,595.88	1,847.67	0.00	0.00	0.00
4,380.76	30.41	300.26	3,892.00	951.75	-1,631.18	1,888.54	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 514-23 - Slot PA 514-23 (B6)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 514-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

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)
LOWER WSTC									
4,400.00	30.41	300.26	3,908.59	956.66	-1,639.60	1,898.28	0.00	0.00	0.00
4,500.00	30.41	300.26	3,994.84	982.17	-1,683.31	1,948.90	0.00	0.00	0.00
4,600.00	30.41	300.26	4,081.08	1,007.68	-1,727.03	1,999.51	0.00	0.00	0.00
4,700.00	30.41	300.26	4,167.33	1,033.19	-1,770.75	2,050.13	0.00	0.00	0.00
4,800.00	30.41	300.26	4,253.57	1,058.69	-1,814.46	2,100.74	0.00	0.00	0.00
4,883.12	30.41	300.26	4,325.26	1,079.90	-1,850.80	2,142.81	0.00	0.00	0.00
Start Drop -1.50									
4,900.00	30.15	300.26	4,339.83	1,084.19	-1,858.15	2,151.32	1.50	-1.50	0.00
5,000.00	28.65	300.26	4,426.95	1,108.93	-1,900.56	2,200.42	1.50	-1.50	0.00
5,100.00	27.15	300.26	4,515.32	1,132.51	-1,940.98	2,247.22	1.50	-1.50	0.00
5,181.25	25.94	300.26	4,588.00	1,150.81	-1,972.34	2,283.53	1.50	-1.50	0.00
OCRK - WRFK/UMVRD									
5,200.00	25.65	300.26	4,604.89	1,154.92	-1,979.39	2,291.69	1.50	-1.50	0.00
5,300.00	24.15	300.26	4,695.58	1,176.15	-2,015.76	2,333.80	1.50	-1.50	0.00
5,400.00	22.65	300.26	4,787.35	1,196.16	-2,050.07	2,373.52	1.50	-1.50	0.00
5,500.00	21.15	300.26	4,880.13	1,214.96	-2,082.29	2,410.82	1.50	-1.50	0.00
5,600.00	19.65	300.26	4,973.85	1,232.53	-2,112.40	2,445.69	1.50	-1.50	0.00
5,700.00	18.15	300.26	5,068.46	1,248.86	-2,140.39	2,478.08	1.50	-1.50	0.00
5,800.00	16.65	300.26	5,163.88	1,263.93	-2,166.22	2,507.99	1.50	-1.50	0.00
5,900.00	15.15	300.26	5,260.05	1,277.74	-2,189.89	2,535.40	1.50	-1.50	0.00
6,000.00	13.65	300.26	5,356.90	1,290.28	-2,211.37	2,560.27	1.50	-1.50	0.00
6,100.00	12.15	300.26	5,454.37	1,301.54	-2,230.66	2,582.60	1.50	-1.50	0.00
6,200.00	10.65	300.26	5,552.39	1,311.50	-2,247.74	2,602.38	1.50	-1.50	0.00
6,300.00	9.15	300.26	5,650.90	1,320.17	-2,262.60	2,619.58	1.50	-1.50	0.00
6,376.96	8.00	300.26	5,727.00	1,325.95	-2,272.51	2,631.06	1.50	-1.50	0.00
Start Drop -1.50 - KMVGAS									
6,382.02	7.92	300.26	5,732.01	1,326.31	-2,273.12	2,631.76	1.50	-1.50	0.00
PA 514-23 KMV									
6,400.00	7.65	300.26	5,749.82	1,327.53	-2,275.22	2,634.19	1.50	-1.50	0.00
6,500.00	6.15	300.26	5,849.10	1,333.59	-2,285.60	2,646.21	1.50	-1.50	0.00
6,600.00	4.65	300.26	5,948.65	1,338.34	-2,293.74	2,655.63	1.50	-1.50	0.00
6,700.00	3.15	300.26	6,048.41	1,341.77	-2,299.62	2,662.44	1.50	-1.50	0.00
6,800.00	1.65	300.26	6,148.32	1,343.88	-2,303.24	2,666.64	1.50	-1.50	0.00
6,900.00	0.15	300.26	6,248.31	1,344.68	-2,304.61	2,668.21	1.50	-1.50	0.00
6,910.29	0.00	0.00	6,258.60	1,344.69	-2,304.62	2,668.23	1.50	-1.50	0.00
Start 2102.40 hold at 6910.29 MD									
7,000.00	0.00	0.00	6,348.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
7,100.00	0.00	0.00	6,448.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
7,200.00	0.00	0.00	6,548.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
7,300.00	0.00	0.00	6,648.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
7,400.00	0.00	0.00	6,748.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
7,500.00	0.00	0.00	6,848.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
7,600.00	0.00	0.00	6,948.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
7,700.00	0.00	0.00	7,048.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
7,800.00	0.00	0.00	7,148.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
7,900.00	0.00	0.00	7,248.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,000.00	0.00	0.00	7,348.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,100.00	0.00	0.00	7,448.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,200.00	0.00	0.00	7,548.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,300.00	0.00	0.00	7,648.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,400.00	0.00	0.00	7,748.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,437.69	0.00	0.00	7,786.00	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00

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Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 514-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

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)
CMEO									
8,500.00	0.00	0.00	7,848.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,600.00	0.00	0.00	7,948.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,700.00	0.00	0.00	8,048.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,784.69	0.00	0.00	8,133.00	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
RLNS									
8,800.00	0.00	0.00	8,148.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
8,900.00	0.00	0.00	8,248.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
9,000.00	0.00	0.00	8,348.31	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
9,012.69	0.00	0.00	8,361.00	1,344.69	-2,304.62	2,668.23	0.00	0.00	0.00
TD at 9012.69 - TD - PA 514-23 PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PA 514-23 KMV	0.00	0.00	5,727.00	1,344.69	-2,304.62	1,617,829.40	2,302,479.80	39.5036620	-107.9722931
- plan misses target center by 36.82usft at 6382.02usft MD (5732.01 TVD, 1326.31 N, -2273.12 E)									
- Circle (radius 50.00)									
PA 514-23 PBHL	0.00	0.00	8,361.00	1,344.69	-2,304.62	1,617,829.40	2,302,479.80	39.5036620	-107.9722931
- plan misses target center by 0.01usft at 9012.69usft MD (8361.00 TVD, 1344.69 N, -2304.62 E)									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,061.91	9 5/8" Casing @ 1100' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,555.72	2,318.00	G SAND TOP		0.00	0.00	
2,636.88	2,388.00	GSAND BASE		0.00	0.00	
4,380.76	3,892.00	LOWER WSTC		0.00	0.00	
5,181.25	4,588.00	OCRK		0.00	0.00	
5,181.25	4,588.00	WRFK/UMVRD		0.00	0.00	
6,376.96	5,727.00	KMVGAS		0.00	0.00	
8,437.69	7,786.00	CMEO		0.00	0.00	
8,784.69	8,133.00	RLNS		0.00	0.00	
9,012.69	8,361.00	TD		0.00	0.00	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 514-23 - Slot PA 514-23 (B6)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5486' & RKB 24' @ 5510.00usft
Site:	PA 31-26 Pad	North Reference:	True
Well:	PA 514-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 19Jun2019mmsdi		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
155.00	155.00	0.00	0.00	Start Build 3.00
1,168.59	1,121.67	132.39	-226.91	Start 3714.53 hold at 1168.59 MD
4,883.12	4,325.26	1,079.90	-1,850.80	Start Drop -1.50
6,376.96	5,727.00	1,325.95	-2,272.51	Start Drop -1.50
6,910.29	6,258.60	1,344.69	-2,304.62	Start 2102.40 hold at 6910.29 MD
9,012.69	8,361.00	1,344.69	-2,304.62	TD at 9012.69