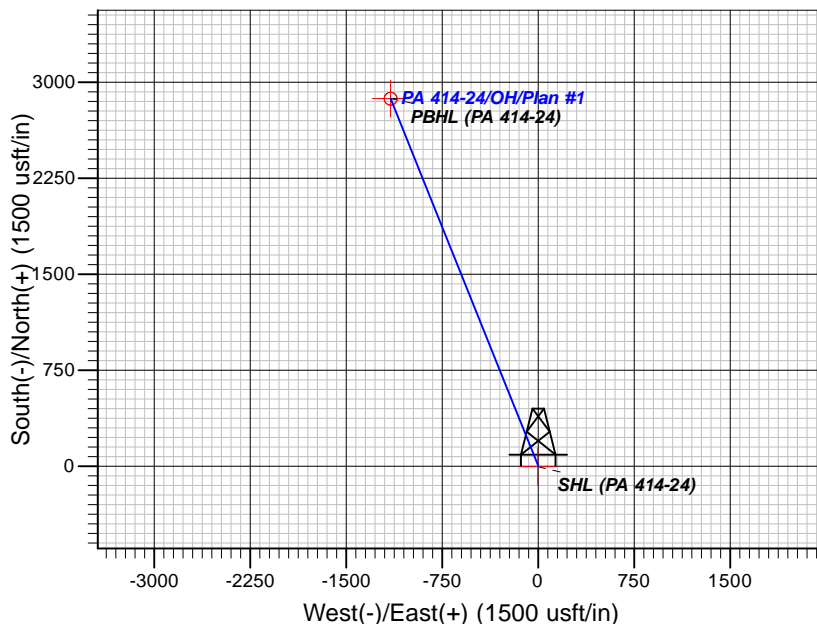
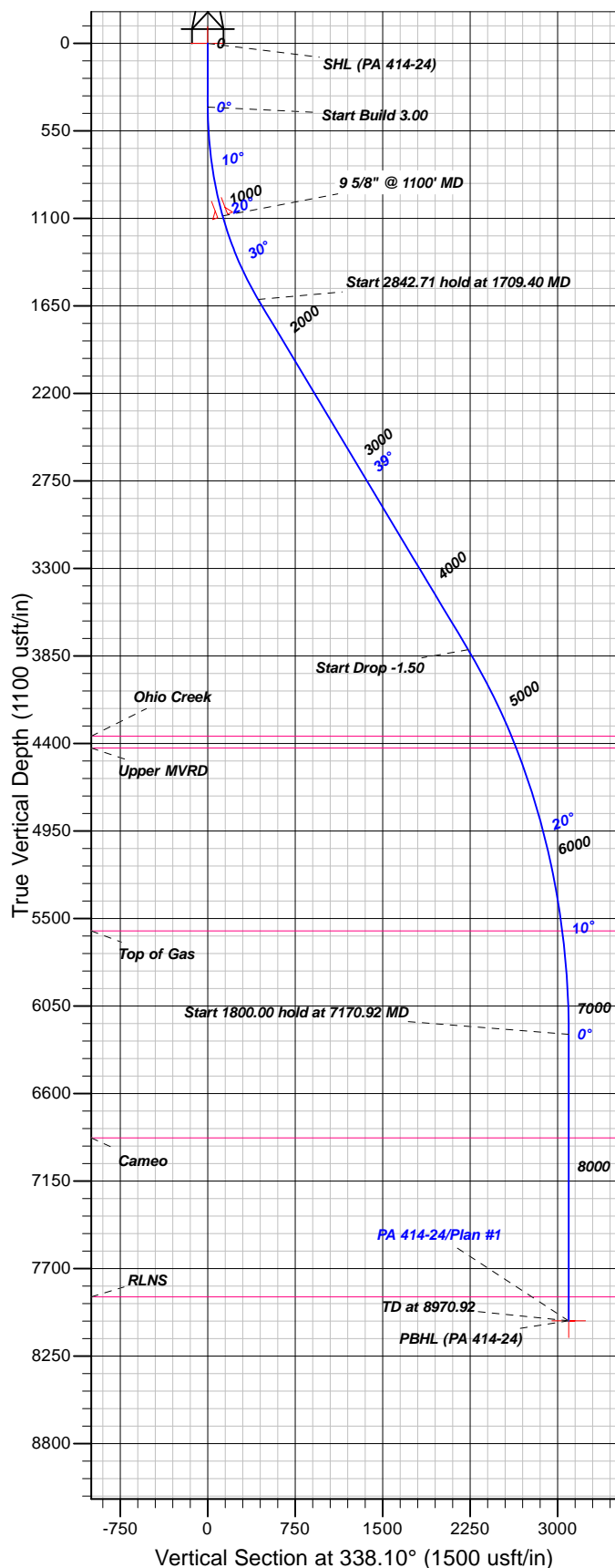


**T** **M** Azimuths to True North  
Magnetic North: 9.45°

Magnetic Field  
Strength: 51743.6nT  
Dip Angle: 65.82°  
Date: 5/22/2017  
Model: HDGM

Magnetic Field  
Strength: 51743.6snT  
Dip Angle: 65.82°  
Date: 5/22/2017  
Model: HDGM



TVDPATH	MDPATH	FORMATION
4352.99	5211.06	Ohio Creek
4427.99	5296.61	Upper MVRD
5577.99	6517.75	Top of Gas
6877.99	7820.92	Cameo
7877.98	8820.92	RLNS

Plan: Plan #1

23:10, June 03 2017  
Created By: Mel Mireles

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
1084.43	1100.00	9 5/8" @ 1100' MD	9.62

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1709.40	39.28	338.10	1609.21	400.42	-160.95	3.00	338.10	431.56	
4	4552.12	39.28	338.10	3809.58	2070.39	-832.20	0.00	0.00	2231.39	
5	7170.92	0.00	0.00	6227.99	2871.23	-1154.10	1.50	180.00	3094.50	
6	8970.92	0.00	0.00	8027.98	2871.23	-1154.10	0.00	0.00	3094.50	PBHL (PA 414-24)

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SHL (PA 414-24)	0.00	-3.31	-4.49	1615184.47	2308825.68	39.4968750	-107.9495589	Point
- plan misses target center by 5.58usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)								
PBHL (PA 414-24)	8027.98	2871.23	-1154.10	1618088.96	2307753.98	39.5047669	-107.9536331	Circle (Radius: 50.00)
- plan hits target center.								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**PA 22-25 Pad**

**PA 414-24 - Slot PA 414-24 (A14)**

**OH**

**Plan: Plan #1**

## **Standard Planning Report**

**03 June, 2017**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well PA 414-24 - Slot PA 414-24 (A14)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5247.99usft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5247.99usft (Original Well Elev)
<b>Site:</b>	PA 22-25 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 414-24	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

<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		PA 22-25 Pad			
Site Position:		Northing:		1,615,186.77 usft	
From:		Easting:		2,308,728.18 usft	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
Map		0.00 usft		13.20 in	
				39.4968742	
				-107.9499045	
				-1.55 °	

Well		PA 414-24 - Slot PA 414-24 (A14), A14				
Well Position	+N/-S	3.64 usft	Northing:	1,615,187.66 usft	Latitude:	39.4968842
	+E/-W	102.02 usft	Easting:	2,308,830.26 usft	Longitude:	-107.9495430
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,224.00 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>
	HDGM	5/22/2017	9.45	65.82	51,744

<b>Design</b>	Plan #1			
<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	338.10

<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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,709.40	39.28	338.10	1,609.21	400.42	-160.95	3.00	3.00	0.00	338.10	
4,552.12	39.28	338.10	3,809.58	2,070.39	-832.20	0.00	0.00	0.00	0.00	
7,170.92	0.00	0.00	6,227.99	2,871.23	-1,154.10	1.50	-1.50	0.00	180.00	
8,970.92	0.00	0.00	8,027.98	2,871.23	-1,154.10	0.00	0.00	0.00	0.00	PBHL (PA 414-24)

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well PA 414-24 - Slot PA 414-24 (A14)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5247.99usft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5247.99usft (Original Well Elev)
<b>Site:</b>	PA 22-25 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 414-24	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

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
<b>SHL (PA 414-24)</b>									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	3.00	338.10	499.95	2.43	-0.98	2.62	3.00	3.00	0.00
600.00	6.00	338.10	599.63	9.71	-3.90	10.46	3.00	3.00	0.00
700.00	9.00	338.10	698.77	21.82	-8.77	23.51	3.00	3.00	0.00
800.00	12.00	338.10	797.08	38.72	-15.57	41.74	3.00	3.00	0.00
900.00	15.00	338.10	894.31	60.38	-24.27	65.08	3.00	3.00	0.00
1,000.00	18.00	338.10	990.18	86.73	-34.86	93.48	3.00	3.00	0.00
1,100.00	21.00	338.10	1,084.43	117.70	-47.31	126.85	3.00	3.00	0.00
<b>9 5/8" @ 1100' MD</b>									
1,200.00	24.00	338.10	1,176.81	153.20	-61.58	165.12	3.00	3.00	0.00
1,300.00	27.00	338.10	1,267.06	193.14	-77.63	208.16	3.00	3.00	0.00
1,400.00	30.00	338.10	1,354.93	237.41	-95.43	255.87	3.00	3.00	0.00
1,500.00	33.00	338.10	1,440.18	285.89	-114.91	308.12	3.00	3.00	0.00
1,600.00	36.00	338.10	1,522.59	338.43	-136.04	364.75	3.00	3.00	0.00
1,700.00	39.00	338.10	1,601.91	394.91	-158.74	425.62	3.00	3.00	0.00
1,709.40	39.28	338.10	1,609.21	400.42	-160.95	431.56	3.00	3.00	0.00
1,800.00	39.28	338.10	1,679.33	453.64	-182.34	488.92	0.00	0.00	0.00
1,900.00	39.28	338.10	1,756.74	512.39	-205.96	552.23	0.00	0.00	0.00
2,000.00	39.28	338.10	1,834.14	571.13	-229.57	615.54	0.00	0.00	0.00
2,100.00	39.28	338.10	1,911.54	629.88	-253.18	678.86	0.00	0.00	0.00
2,200.00	39.28	338.10	1,988.95	688.62	-276.80	742.17	0.00	0.00	0.00
2,300.00	39.28	338.10	2,066.35	747.37	-300.41	805.49	0.00	0.00	0.00
2,400.00	39.28	338.10	2,143.75	806.12	-324.02	868.80	0.00	0.00	0.00
2,500.00	39.28	338.10	2,221.16	864.86	-347.63	932.11	0.00	0.00	0.00
2,600.00	39.28	338.10	2,298.56	923.61	-371.25	995.43	0.00	0.00	0.00
2,700.00	39.28	338.10	2,375.97	982.35	-394.86	1,058.74	0.00	0.00	0.00
2,800.00	39.28	338.10	2,453.37	1,041.10	-418.47	1,122.06	0.00	0.00	0.00
2,900.00	39.28	338.10	2,530.77	1,099.84	-442.09	1,185.37	0.00	0.00	0.00
3,000.00	39.28	338.10	2,608.18	1,158.59	-465.70	1,248.68	0.00	0.00	0.00
3,100.00	39.28	338.10	2,685.58	1,217.34	-489.31	1,312.00	0.00	0.00	0.00
3,200.00	39.28	338.10	2,762.99	1,276.08	-512.93	1,375.31	0.00	0.00	0.00
3,300.00	39.28	338.10	2,840.39	1,334.83	-536.54	1,438.62	0.00	0.00	0.00
3,400.00	39.28	338.10	2,917.79	1,393.57	-560.15	1,501.94	0.00	0.00	0.00
3,500.00	39.28	338.10	2,995.20	1,452.32	-583.77	1,565.25	0.00	0.00	0.00
3,600.00	39.28	338.10	3,072.60	1,511.07	-607.38	1,628.57	0.00	0.00	0.00
3,700.00	39.28	338.10	3,150.00	1,569.81	-630.99	1,691.88	0.00	0.00	0.00
3,800.00	39.28	338.10	3,227.41	1,628.56	-654.61	1,755.19	0.00	0.00	0.00
3,900.00	39.28	338.10	3,304.81	1,687.30	-678.22	1,818.51	0.00	0.00	0.00
4,000.00	39.28	338.10	3,382.22	1,746.05	-701.83	1,881.82	0.00	0.00	0.00
4,100.00	39.28	338.10	3,459.62	1,804.79	-725.44	1,945.14	0.00	0.00	0.00
4,200.00	39.28	338.10	3,537.02	1,863.54	-749.06	2,008.45	0.00	0.00	0.00
4,300.00	39.28	338.10	3,614.43	1,922.29	-772.67	2,071.76	0.00	0.00	0.00
4,400.00	39.28	338.10	3,691.83	1,981.03	-796.28	2,135.08	0.00	0.00	0.00
4,500.00	39.28	338.10	3,769.23	2,039.78	-819.90	2,198.39	0.00	0.00	0.00
4,552.12	39.28	338.10	3,809.58	2,070.39	-832.20	2,231.39	0.00	0.00	0.00
4,600.00	38.56	338.10	3,846.83	2,098.31	-843.42	2,261.47	1.50	-1.50	0.00
4,700.00	37.06	338.10	3,925.83	2,155.19	-866.29	2,322.78	1.50	-1.50	0.00
4,800.00	35.56	338.10	4,006.40	2,210.14	-888.37	2,382.00	1.50	-1.50	0.00
4,900.00	34.06	338.10	4,088.50	2,263.11	-909.67	2,439.09	1.50	-1.50	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well PA 414-24 - Slot PA 414-24 (A14)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5247.99usft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5247.99usft (Original Well Elev)
<b>Site:</b>	PA 22-25 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 414-24	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

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)	
5,000.00	32.56	338.10	4,172.07	2,314.07	-930.15	2,494.01	1.50	-1.50	0.00	
5,100.00	31.06	338.10	4,257.04	2,362.98	-949.81	2,546.72	1.50	-1.50	0.00	
5,200.00	29.56	338.10	4,343.37	2,409.81	-968.63	2,597.20	1.50	-1.50	0.00	
5,211.06	29.40	338.10	4,352.99	2,414.86	-970.66	2,602.64	1.50	-1.50	0.00	
<b>Ohio Creek</b>										
5,296.61	28.11	338.10	4,427.99	2,453.05	-986.01	2,643.80	1.50	-1.50	0.00	
<b>Upper MVRD</b>										
5,300.00	28.06	338.10	4,430.98	2,454.53	-986.61	2,645.39	1.50	-1.50	0.00	
5,400.00	26.56	338.10	4,519.83	2,497.10	-1,003.72	2,691.28	1.50	-1.50	0.00	
5,473.96	25.45	338.10	4,586.30	2,527.19	-1,015.82	2,723.71	1.50	-1.50	0.00	
<b>PA 414-24 MVRD</b>										
5,500.00	25.06	338.10	4,609.85	2,537.50	-1,019.96	2,734.82	1.50	-1.50	0.00	
5,600.00	23.56	338.10	4,700.98	2,575.71	-1,035.32	2,775.99	1.50	-1.50	0.00	
5,700.00	22.06	338.10	4,793.15	2,611.68	-1,049.78	2,814.77	1.50	-1.50	0.00	
5,800.00	20.56	338.10	4,886.31	2,645.40	-1,063.33	2,851.11	1.50	-1.50	0.00	
5,900.00	19.06	338.10	4,980.39	2,676.85	-1,075.97	2,885.01	1.50	-1.50	0.00	
6,000.00	17.56	338.10	5,075.32	2,706.01	-1,087.69	2,916.43	1.50	-1.50	0.00	
6,100.00	16.06	338.10	5,171.04	2,732.85	-1,098.48	2,945.35	1.50	-1.50	0.00	
6,200.00	14.56	338.10	5,267.49	2,757.35	-1,108.33	2,971.76	1.50	-1.50	0.00	
6,300.00	13.06	338.10	5,364.59	2,779.51	-1,117.23	2,995.64	1.50	-1.50	0.00	
6,400.00	11.56	338.10	5,462.29	2,799.29	-1,125.19	3,016.97	1.50	-1.50	0.00	
6,500.00	10.06	338.10	5,560.51	2,816.70	-1,132.18	3,035.73	1.50	-1.50	0.00	
6,517.75	9.80	338.10	5,577.99	2,819.54	-1,133.33	3,038.79	1.50	-1.50	0.00	
<b>Top of Gas</b>										
6,600.00	8.56	338.10	5,659.19	2,831.72	-1,138.22	3,051.91	1.50	-1.50	0.00	
6,700.00	7.06	338.10	5,758.26	2,844.33	-1,143.29	3,065.51	1.50	-1.50	0.00	
6,800.00	5.56	338.10	5,857.65	2,854.53	-1,147.39	3,076.50	1.50	-1.50	0.00	
6,900.00	4.06	338.10	5,957.29	2,862.32	-1,150.52	3,084.90	1.50	-1.50	0.00	
7,000.00	2.56	338.10	6,057.12	2,867.68	-1,152.68	3,090.68	1.50	-1.50	0.00	
7,100.00	1.06	338.10	6,157.07	2,870.62	-1,153.86	3,093.84	1.50	-1.50	0.00	
7,170.92	0.00	0.00	6,227.99	2,871.23	-1,154.10	3,094.50	1.50	-1.50	0.00	
7,200.00	0.00	0.00	6,257.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
7,300.00	0.00	0.00	6,357.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
7,400.00	0.00	0.00	6,457.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
7,500.00	0.00	0.00	6,557.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
7,600.00	0.00	0.00	6,657.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
7,700.00	0.00	0.00	6,757.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
7,800.00	0.00	0.00	6,857.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
7,820.92	0.00	0.00	6,877.99	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
<b>Cameo</b>										
7,900.00	0.00	0.00	6,957.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,057.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,157.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,200.00	0.00	0.00	7,257.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,300.00	0.00	0.00	7,357.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,400.00	0.00	0.00	7,457.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,500.00	0.00	0.00	7,557.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,600.00	0.00	0.00	7,657.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,700.00	0.00	0.00	7,757.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,800.00	0.00	0.00	7,857.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
8,820.92	0.00	0.00	7,877.98	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	
<b>RLNS</b>										
8,900.00	0.00	0.00	7,957.07	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00	

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well PA 414-24 - Slot PA 414-24 (A14)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5247.99usft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5247.99usft (Original Well Elev)
<b>Site:</b>	PA 22-25 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 414-24	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

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)
8,970.92	0.00	0.00	8,027.98	2,871.23	-1,154.10	3,094.50	0.00	0.00	0.00
PBHL (PA 414-24) - PA 414-24 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
SHL (PA 414-24) - plan misses target center by 5.58usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	-3.31	-4.49	1,615,184.47	2,308,825.68	39.4968751	-107.9495589
PBHL (PA 414-24) - plan hits target center - Circle (radius 50.00)	0.00	0.00	8,027.98	2,871.23	-1,154.10	1,618,088.96	2,307,753.99	39.5047669	-107.9536332

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,084.43	9 5/8" @ 1100' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,211.06	4,353.00	Ohio Creek		0.00		
5,296.61	4,428.00	Upper MVRD		0.00		
6,517.75	5,578.00	Top of Gas		0.00		
7,820.92	6,878.00	Cameo		0.00		
8,820.92	7,877.99	RLNS		0.00		