



Project: Garfield Co., CO (NAD83)  
 Site: PA Pad  
 Well: PA 14-23  
 Wellbore: OH  
 Design: Plan #3  
 Lat: 39.500029  
 Long: -107.964150  
 GL: 5486.00  
 KB: KB=24' @ 5510.00usf (H&P 318)



WELL DETAILS: PA 14-23					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1616444.30	2304740.70	39.500029	-107.964150

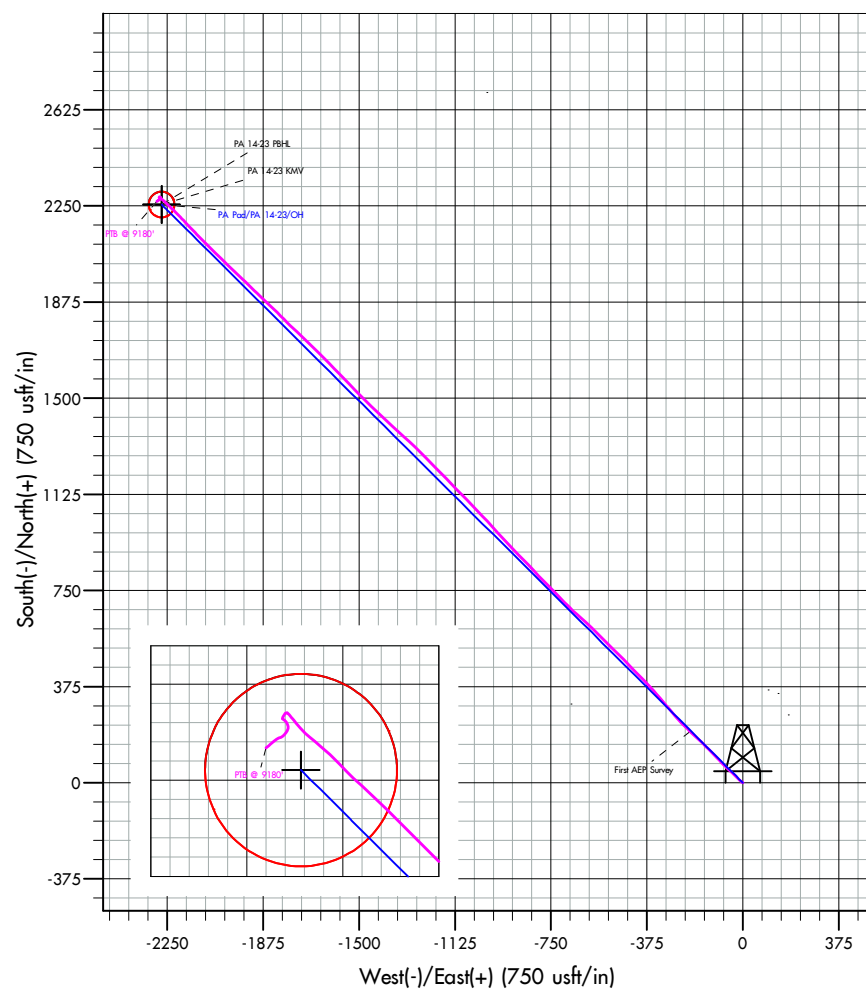
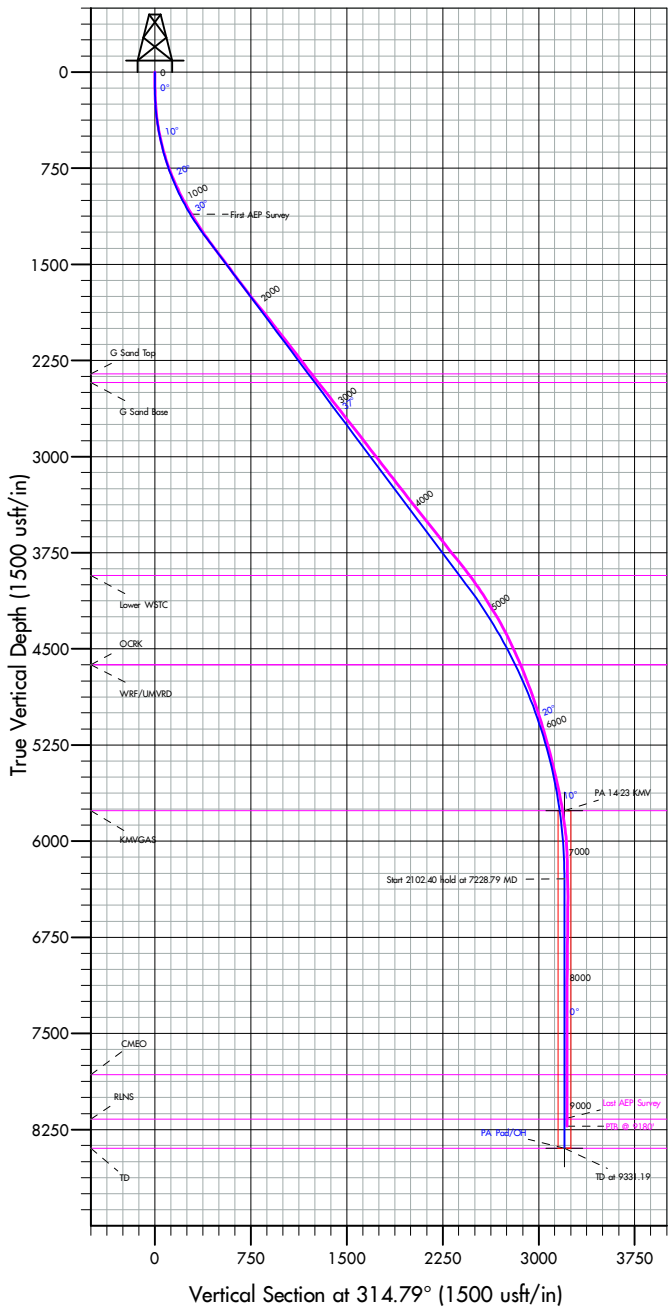
WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PA 14-23 KMV	5762.00	2255.32	-2271.70	1618760.40	2302531.00	Circle (Radius: 50.00)
PA 14-23 PBHL	8396.00	2255.32	-2271.70	1618760.40	2302531.00	Point

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.00
1350.47	36.91	314.79	1267.10	269.74	-271.70	3.00	314.79	382.86	Start 3417.38 hold at 1350.47 MD
4767.85	36.91	314.79	3999.41	1715.84	-1728.30	0.00	0.00	2435.39	Start DLS 1.50 TFO -180.00
6695.46	8.00	314.79	5762.00	2229.13	-2245.32	1.50	-180.00	3163.93	Start DLS 1.50 TFO 180.00
7228.79	0.00	0.00	6293.60	2255.32	-2271.70	1.50	180.00	3201.11	Start 2102.40 hold at 7228.79 MD
9331.19	0.00	0.00	8396.00	2255.32	-2271.70	0.00	0.00	3201.11	TD at 9331.19

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
2353.00	2708.64	G Sand Top
2423.00	2796.19	G Sand Base
3927.00	4677.28	Lower WSTC
4623.00	5499.74	OCRK
4623.00	5499.74	WRF/UMVRD
5762.00	6695.46	KMV/GAS
7821.00	8756.19	CMEO
8168.00	9103.19	RLNS
8396.00	9331.19	TD

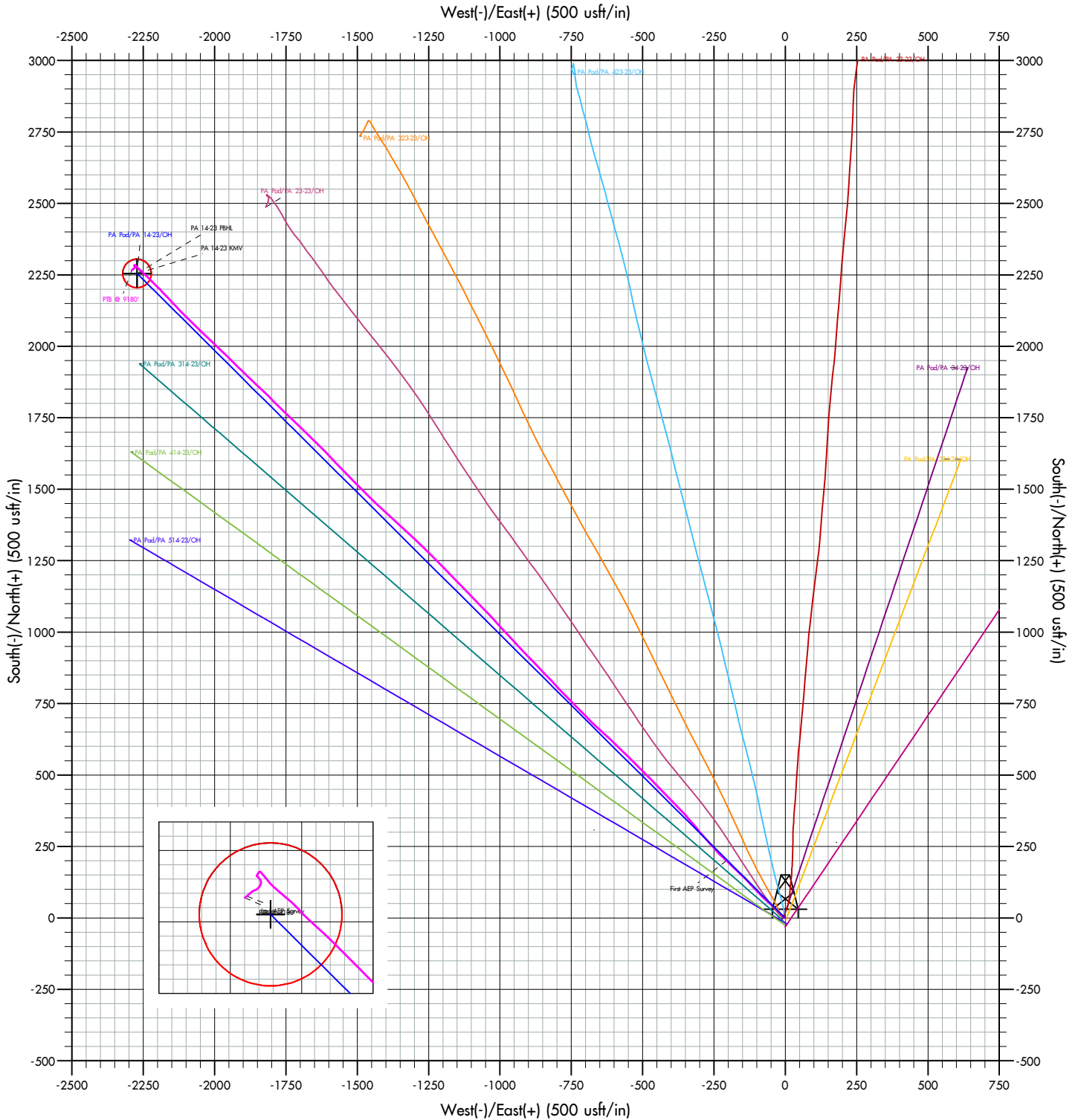
Azimuths to True North  
 Magnetic North: 9.17°

Magnetic Field  
 Strength: 51388.0nT  
 Dip Angle: 65.70°  
 Date: 8/15/2020  
 Model: HDGM2020





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Site: PA Pad  
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Wellbore: OH  
Design: Plan #3  
Lat: 39.500029  
Long: -107.964150  
GL: 5486.00  
KB: KB=24' @ 5510.00usft (H&P 318)





# ALTITUDE ENERGY PARTNERS LLC. SURVEY DATA CERTIFICATION

<b>ALTITUDE JOB NUMBER</b>		<b>OPERATOR</b>	
<b>WELL NAME</b>	<b>COUNTY &amp; STATE</b>		
<b>API WELL NUMBER</b>	<b>PROPOSED DIRECTION</b>		
<b>Latitude</b>	<b>Longitude</b>		

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH		SURVEY INSTRUMENT TYPE	
					MWD	
LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH	MAGNETIC DECLINATION OR TOTAL GRID		
				TOTAL CORRECTION USED		
				DECLINATION OR GRID		
PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH			

The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Altitude Energy Partners LLC. I am authorized and qualified to review the data, calculations and this report, and that the report represents a true and correct Directional Survey of this well based on the original data corrected to True North and obtained at the well site. Wellbore coordinates are calculated using Minimum curvature or other method.

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**PRINT MWD NAME ABOVE**

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**SIGN MWD NAME ABOVE**

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**TODAY'S DATE**



# **TEP Rocky Mountain LLC**

**Garfield Co., CO (NAD83)**

**PA Pad**

**PA 14-23**

**OH**

**Survey: Altitude MWD Survey**

## **Standard Survey Report**

**15 September, 2020**





# Altitude Energy Partners

## Survey Report



<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 14-23
<b>Project:</b>	Garfield Co., CO (NAD83)	<b>TVD Reference:</b>	KB=24' @ 5510.00usft (H&P 318)
<b>Site:</b>	PA Pad	<b>MD Reference:</b>	KB=24' @ 5510.00usft (H&P 318)
<b>Well:</b>	PA 14-23	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Garfield Co., 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		

<b>Site</b>	PA Pad				
<b>Site Position:</b>		<b>Northing:</b>	1,616,444.30 usft	<b>Latitude:</b>	39.500029
<b>From:</b>	Map	<b>Easting:</b>	2,304,740.70 usft	<b>Longitude:</b>	-107.964151
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	PA 14-23					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,616,444.30 usft	<b>Latitude:</b>	39.500029
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,304,740.70 usft	<b>Longitude:</b>	-107.964151
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	5,486.00 usft
<b>Grid Convergence:</b>	-1.55 °					

<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>
	HDGM2020	8/15/2020	9.17	65.70	51,388.00000000

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	314.79	

<b>Survey Program</b>	<b>Date</b>	9/15/2020			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
117.00	1,037.00	Gyro (OH)	GYD_GWD70	Gyrodata Stationary Tool GWD70 run in open hole up	
1,165.00	9,180.00	Altitude MWD Survey (OH)	MWD+ HGDM	OWSG MWD + HGDM	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
1,037.00	28.72	313.40	999.49	156.54	-160.25	224.01	0.00	0.00	0.00	
1,165.00	30.90	313.20	1,110.55	200.17	-206.56	287.61	1.70	1.70	-0.16	
<b>First AEP Survey</b>										
1,260.00	32.52	316.93	1,191.37	235.53	-241.78	337.52	2.68	1.71	3.93	
1,354.00	34.61	319.14	1,269.70	274.18	-276.51	389.40	2.58	2.22	2.35	
1,448.00	36.60	320.20	1,346.12	315.91	-311.91	443.92	2.22	2.12	1.13	
1,542.00	38.30	317.79	1,420.75	359.02	-349.43	500.92	2.39	1.81	-2.56	
1,636.00	37.14	316.21	1,495.10	401.08	-388.64	558.38	1.61	-1.23	-1.68	
1,730.00	35.73	315.49	1,570.73	441.14	-427.52	614.19	1.57	-1.50	-0.77	



# Altitude Energy Partners

## Survey Report



<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 14-23
<b>Project:</b>	Garfield Co., CO (NAD83)	<b>TVD Reference:</b>	KB=24' @ 5510.00usft (H&P 318)
<b>Site:</b>	PA Pad	<b>MD Reference:</b>	KB=24' @ 5510.00usft (H&P 318)
<b>Well:</b>	PA 14-23	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

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)	
1,824.00	37.91	315.43	1,645.97	481.29	-467.03	670.52	2.32	2.32	-0.06	
1,918.00	37.07	314.89	1,720.56	521.86	-507.37	727.73	0.96	-0.89	-0.57	
2,013.00	39.05	314.97	1,795.35	563.22	-548.83	786.29	2.08	2.08	0.08	
2,107.00	38.86	313.47	1,868.45	604.43	-591.18	845.39	1.02	-0.20	-1.60	
2,202.00	38.51	311.48	1,942.61	644.53	-634.96	904.71	1.36	-0.37	-2.09	
2,296.00	37.33	314.52	2,016.77	683.90	-677.22	962.43	2.35	-1.26	3.23	
2,390.00	38.15	315.84	2,091.11	724.72	-717.77	1,019.96	1.22	0.87	1.40	
2,485.00	37.19	315.03	2,166.30	766.08	-758.50	1,078.01	1.14	-1.01	-0.85	
2,579.00	38.53	317.06	2,240.52	807.61	-798.53	1,135.68	1.95	1.43	2.16	
2,674.00	37.19	315.95	2,315.52	849.91	-838.65	1,193.96	1.58	-1.41	-1.17	
2,768.00	38.57	316.52	2,389.71	891.60	-878.57	1,251.65	1.51	1.47	0.61	
2,863.00	37.63	315.93	2,464.47	933.93	-919.12	1,310.25	1.06	-0.99	-0.62	
2,957.00	38.61	317.40	2,538.42	976.13	-958.93	1,368.24	1.42	1.04	1.56	
3,051.00	37.58	317.39	2,612.40	1,018.82	-998.19	1,426.18	1.10	-1.10	-0.01	
3,145.00	38.69	316.29	2,686.33	1,061.16	-1,037.90	1,484.19	1.38	1.18	-1.17	
3,240.00	37.27	315.56	2,761.21	1,103.16	-1,078.56	1,542.63	1.57	-1.49	-0.77	
3,334.00	38.17	316.41	2,835.57	1,144.52	-1,118.51	1,600.13	1.11	0.96	0.90	
3,428.00	37.28	315.77	2,909.92	1,185.96	-1,158.40	1,657.63	1.03	-0.95	-0.68	
3,522.00	38.35	315.23	2,984.18	1,227.06	-1,198.80	1,715.26	1.19	1.14	-0.57	
3,617.00	37.05	315.31	3,059.34	1,268.33	-1,239.68	1,773.35	1.37	-1.37	0.08	
3,711.00	38.84	313.70	3,133.47	1,308.83	-1,280.91	1,831.14	2.18	1.90	-1.71	
3,805.00	37.55	312.58	3,207.34	1,348.58	-1,323.32	1,889.24	1.56	-1.37	-1.19	
3,900.00	39.10	312.48	3,281.87	1,388.40	-1,366.73	1,948.10	1.63	1.63	-0.11	
3,994.00	37.66	312.68	3,355.56	1,427.89	-1,409.70	2,006.42	1.54	-1.53	0.21	
4,088.00	38.75	314.23	3,429.42	1,467.88	-1,451.89	2,064.53	1.54	1.16	1.65	
4,183.00	37.91	314.75	3,503.94	1,509.16	-1,493.93	2,123.45	0.95	-0.88	0.55	
4,277.00	39.21	316.24	3,577.45	1,550.95	-1,534.99	2,182.03	1.70	1.38	1.59	
4,372.00	38.23	316.38	3,651.57	1,593.92	-1,576.03	2,241.44	1.04	-1.03	0.15	
4,466.00	39.39	314.94	3,724.82	1,636.05	-1,617.21	2,300.34	1.56	1.23	-1.53	
4,561.00	38.14	314.82	3,798.89	1,678.02	-1,659.36	2,359.82	1.32	-1.32	-0.13	
4,655.00	37.77	313.92	3,873.01	1,718.45	-1,700.69	2,417.63	0.71	-0.39	-0.96	
4,750.00	36.65	313.37	3,948.67	1,758.10	-1,742.25	2,475.07	1.23	-1.18	-0.58	
4,844.00	34.91	315.24	4,024.92	1,796.47	-1,781.59	2,530.02	2.19	-1.85	1.99	
4,938.00	32.11	314.14	4,103.29	1,832.98	-1,818.47	2,581.91	3.05	-2.98	-1.17	
5,032.00	31.63	313.35	4,183.12	1,867.29	-1,854.32	2,631.53	0.68	-0.51	-0.84	
5,126.00	30.61	313.66	4,263.59	1,900.74	-1,889.56	2,680.10	1.10	-1.09	0.33	
5,230.00	27.51	314.70	4,354.49	1,935.92	-1,925.80	2,730.60	3.02	-2.98	1.00	
5,325.00	26.12	313.34	4,439.27	1,965.71	-1,956.60	2,773.45	1.60	-1.46	-1.43	
5,419.00	24.66	314.08	4,524.19	1,993.55	-1,985.74	2,813.75	1.59	-1.55	0.79	
5,504.00	23.25	313.83	4,601.87	2,017.51	-2,010.58	2,848.25	1.66	-1.66	-0.29	
5,608.00	21.41	312.92	4,698.07	2,044.65	-2,039.29	2,887.75	1.80	-1.77	-0.88	
5,693.00	21.12	315.09	4,777.28	2,066.06	-2,061.47	2,918.57	0.99	-0.34	2.55	
5,787.00	19.98	314.39	4,865.30	2,089.29	-2,084.90	2,951.57	1.24	-1.21	-0.74	



# Altitude Energy Partners

## Survey Report



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<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
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5,881.00	18.51	314.54	4,954.04	2,110.99	-2,107.01	2,982.55	1.56	-1.56	0.16	
5,976.00	17.77	317.17	5,044.32	2,132.20	-2,127.62	3,012.11	1.16	-0.78	2.77	
6,070.00	15.54	315.58	5,134.37	2,151.72	-2,146.18	3,039.04	2.42	-2.37	-1.69	
6,164.00	15.07	316.90	5,225.04	2,169.63	-2,163.35	3,063.84	0.62	-0.50	1.40	
6,259.00	15.70	316.47	5,316.63	2,187.97	-2,180.64	3,089.03	0.67	0.66	-0.45	
6,353.00	13.46	314.80	5,407.60	2,204.90	-2,197.16	3,112.69	2.42	-2.38	-1.78	
6,447.00	13.25	315.71	5,499.06	2,220.32	-2,212.45	3,134.40	0.32	-0.22	0.97	
6,541.00	11.75	314.26	5,590.83	2,234.71	-2,226.83	3,154.74	1.63	-1.60	-1.54	
6,636.00	10.68	312.01	5,684.01	2,247.36	-2,240.29	3,173.21	1.22	-1.13	-2.37	
6,730.00	8.72	316.75	5,776.67	2,258.38	-2,251.65	3,189.03	2.25	-2.09	5.04	
6,825.00	7.55	309.54	5,870.71	2,267.60	-2,261.40	3,202.44	1.63	-1.23	-7.59	
6,920.00	5.13	312.80	5,965.12	2,274.46	-2,269.33	3,212.91	2.57	-2.55	3.43	
7,014.00	3.55	321.87	6,058.85	2,279.60	-2,274.21	3,219.99	1.83	-1.68	9.65	
7,108.00	1.08	319.91	6,152.77	2,282.57	-2,276.58	3,223.77	2.63	-2.63	-2.09	
7,202.00	1.10	319.05	6,246.75	2,283.93	-2,277.74	3,225.55	0.03	0.02	-0.91	
7,297.00	0.97	316.06	6,341.74	2,285.19	-2,278.89	3,227.26	0.15	-0.14	-3.15	
7,391.00	1.32	210.02	6,435.73	2,284.83	-2,279.99	3,227.78	1.96	0.37	-112.81	
7,485.00	1.26	219.62	6,529.70	2,283.10	-2,281.19	3,227.41	0.24	-0.06	10.21	
7,580.00	0.50	119.82	6,624.69	2,282.09	-2,281.49	3,226.92	1.51	-0.80	-105.05	
7,674.00	0.47	127.01	6,718.69	2,281.65	-2,280.83	3,226.14	0.07	-0.03	7.65	
7,768.00	0.52	133.84	6,812.69	2,281.12	-2,280.22	3,225.33	0.08	0.05	7.27	
7,862.00	0.60	139.14	6,906.68	2,280.45	-2,279.59	3,224.41	0.10	0.09	5.64	
7,957.00	0.39	146.14	7,001.68	2,279.81	-2,279.08	3,223.60	0.23	-0.22	7.37	
8,051.00	0.66	159.96	7,095.67	2,279.04	-2,278.72	3,222.80	0.32	0.29	14.70	
8,145.00	0.55	163.98	7,189.67	2,278.09	-2,278.41	3,221.91	0.13	-0.12	4.28	
8,240.00	0.74	197.52	7,284.66	2,277.07	-2,278.47	3,221.23	0.44	0.20	35.31	
8,334.00	0.92	203.04	7,378.65	2,275.80	-2,278.94	3,220.67	0.21	0.19	5.87	
8,428.00	0.74	219.16	7,472.64	2,274.63	-2,279.62	3,220.34	0.31	-0.19	17.15	
8,522.00	0.62	218.47	7,566.64	2,273.76	-2,280.32	3,220.22	0.13	-0.13	-0.73	
8,617.00	0.64	228.63	7,661.63	2,273.01	-2,281.04	3,220.20	0.12	0.02	10.69	
8,710.00	0.78	247.83	7,754.62	2,272.43	-2,282.02	3,220.48	0.29	0.15	20.65	
8,804.00	0.76	257.12	7,848.62	2,272.05	-2,283.22	3,221.07	0.13	-0.02	9.88	
8,898.00	0.80	231.47	7,942.61	2,271.50	-2,284.34	3,221.47	0.37	0.04	-27.29	
8,992.00	1.42	231.49	8,036.59	2,270.37	-2,285.76	3,221.69	0.66	0.66	0.02	
9,086.00	1.75	227.24	8,130.55	2,268.67	-2,287.73	3,221.88	0.37	0.35	-4.52	
9,115.00	1.70	231.52	8,159.54	2,268.10	-2,288.39	3,221.95	0.48	-0.17	14.76	
<b>Last AEP Survey</b>										
9,180.00	1.70	231.52	8,224.51	2,266.90	-2,289.90	3,222.18	0.00	0.00	0.00	
<b>PTB @ 9180'</b>										



**Altitude Energy Partners**  
Survey Report



<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 14-23
<b>Project:</b>	Garfield Co., CO (NAD83)	<b>TVD Reference:</b>	KB=24' @ 5510.00usft (H&P 318)
<b>Site:</b>	PA Pad	<b>MD Reference:</b>	KB=24' @ 5510.00usft (H&P 318)
<b>Well:</b>	PA 14-23	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,165.00	1,110.55	200.17	-206.56	First AEP Survey
9,115.00	8,159.54	2,268.10	-2,288.39	Last AEP Survey
9,180.00	8,224.51	2,266.90	-2,289.90	PTB @ 9180'

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_