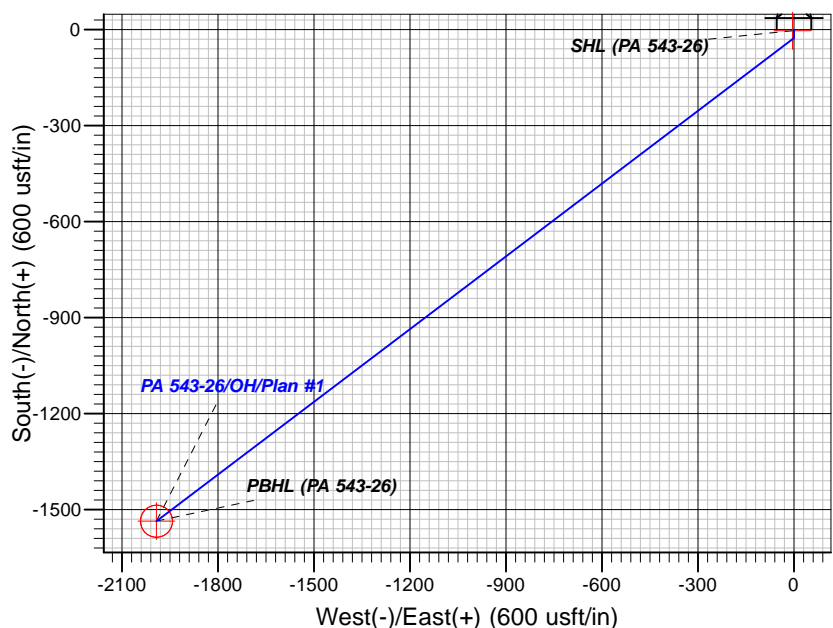


**T** **M** Azimuths to True North  
Magnetic North: 9.45°

Magnetic Field  
Strength: 51743.4nT  
Dip Angle: 65.82°  
Date: 5/23/2017  
Model: HDGM

Magnetic Field  
Strength: 51743.4snT  
Dip Angle: 65.82°  
Date: 5/23/2017  
Model: HDGM



TVDPATH	MDP	FORMATION
4203.00	4773.27	OHIO CREEK
4278.00	4871.34	UPPER MVRD
5428.00	6189.06	TOP OF GAS
6728.00	7497.90	COMEAL
7728.00	8497.90	RLNS

18:34, June 04 2017  
Created By: Mel Mireles

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone

## CASING DETAILS

TVD	MD	Name	Size
1099.24	1100.00	9 5/8" @ 1100' MD	9.62

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	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	350.00	5.00	180.00	349.75	-8.72	0.00	2.50	180.00	5.32	
4	750.00	0.00	0.00	749.24	-26.16	0.00	1.25	180.00	15.97	
5	1468.50	0.00	0.00	1467.74	-26.16	0.00	0.00	0.00	15.97	
6	2805.72	40.12	232.85	2698.35	-297.54	-358.11	3.00	232.85	465.28	
7	4942.07	40.12	232.85	4332.09	-1128.93	-1455.23	0.00	0.00	1814.78	
8	6947.90	0.00	0.00	6178.00	-1536.00	-1992.40	2.00	180.00	2515.74	
9	8647.90	0.00	0.00	7878.00	-1536.00	-1992.40	0.00	0.00	2515.74	PBHL (PA 543-26)

Name	TVD	+N/-S	+E/-W	Northing	Eastings	Latitude	Longitude	Shape
SHL (PA 543-26)	0.00	-3.35	-4.51	1615186.27	2308750.68	39.4968744	-107.9498247	Point
- plan misses target center by 5.62usft at 0.00usft (0.00 TVD, 0.00 N, 0.00 E)								
PBHL (PA 543-26)	7878.00	-1536.00	-1992.40	1613707.77	2306722.19	39.4926664	-107.9568687	Circle (Radius: 50.00)
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**PA 22-25 Pad**

**PA 543-26 - Slot PA 543-26 (A4)**

**OH**

**Plan: Plan #1**

## **Standard Planning Report**

**04 June, 2017**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well PA 543-26 - Slot PA 543-26 (A4)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5248.00usft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5248.00usft (Original Well Elev)
<b>Site:</b>	PA 22-25 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 543-26	<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		

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

<b>Well</b>	PA 543-26 - Slot PA 543-26 (A4), A4			
<b>Well Position</b>	<b>+N/-S</b>	3.45 usft	<b>Northing:</b>	1,615,189.49 usft
	<b>+E/-W</b>	27.02 usft	<b>Easting:</b>	2,308,755.28 usft
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	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	5/23/2017	9.45	65.82	51,743

<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	232.37

<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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
350.00	5.00	180.00	349.75	-8.72	0.00	2.50	2.50	0.00	180.00	
750.00	0.00	0.00	749.24	-26.16	0.00	1.25	-1.25	0.00	180.00	
1,468.50	0.00	0.00	1,467.74	-26.16	0.00	0.00	0.00	0.00	0.00	
2,805.72	40.12	232.85	2,698.35	-297.54	-358.11	3.00	3.00	0.00	232.85	
4,942.07	40.12	232.85	4,332.09	-1,128.93	-1,455.23	0.00	0.00	0.00	0.00	
6,947.90	0.00	0.00	6,178.00	-1,536.00	-1,992.40	2.00	-2.00	0.00	180.00	
8,647.90	0.00	0.00	7,878.00	-1,536.00	-1,992.40	0.00	0.00	0.00	0.00	PBHL (PA 543-26)

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well PA 543-26 - Slot PA 543-26 (A4)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5248.00usft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5248.00usft (Original Well Elev)
<b>Site:</b>	PA 22-25 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 543-26	<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 543-26)</b>									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	1.25	180.00	200.00	-0.55	0.00	0.33	2.50	2.50	0.00
300.00	3.75	180.00	299.89	-4.91	0.00	3.00	2.50	2.50	0.00
350.00	5.00	180.00	349.75	-8.72	0.00	5.32	2.50	2.50	0.00
400.00	4.38	180.00	399.58	-12.81	0.00	7.82	1.25	-1.25	0.00
500.00	3.13	180.00	499.36	-19.35	0.00	11.81	1.25	-1.25	0.00
600.00	1.88	180.00	599.27	-23.71	0.00	14.48	1.25	-1.25	0.00
700.00	0.63	180.00	699.24	-25.89	0.00	15.81	1.25	-1.25	0.00
750.00	0.00	0.00	749.24	-26.16	0.00	15.97	1.25	-1.25	0.00
800.00	0.00	0.00	799.24	-26.16	0.00	15.97	0.00	0.00	0.00
900.00	0.00	0.00	899.24	-26.16	0.00	15.97	0.00	0.00	0.00
1,000.00	0.00	0.00	999.24	-26.16	0.00	15.97	0.00	0.00	0.00
1,100.00	0.00	0.00	1,099.24	-26.16	0.00	15.97	0.00	0.00	0.00
<b>9 5/8" @ 1100' MD</b>									
1,200.00	0.00	0.00	1,199.24	-26.16	0.00	15.97	0.00	0.00	0.00
1,300.00	0.00	0.00	1,299.24	-26.16	0.00	15.97	0.00	0.00	0.00
1,400.00	0.00	0.00	1,399.24	-26.16	0.00	15.97	0.00	0.00	0.00
1,468.50	0.00	0.00	1,467.74	-26.16	0.00	15.97	0.00	0.00	0.00
1,500.00	0.94	232.85	1,499.24	-26.32	-0.21	16.23	3.00	3.00	0.00
1,600.00	3.95	232.85	1,599.13	-28.90	-3.61	20.50	3.00	3.00	0.00
1,700.00	6.95	232.85	1,698.67	-34.63	-11.17	29.99	3.00	3.00	0.00
1,800.00	9.95	232.85	1,797.58	-43.50	-22.87	44.67	3.00	3.00	0.00
1,900.00	12.95	232.85	1,895.58	-55.48	-38.69	64.51	3.00	3.00	0.00
2,000.00	15.95	232.85	1,992.40	-70.54	-58.56	89.45	3.00	3.00	0.00
2,100.00	18.95	232.85	2,087.79	-88.65	-82.46	119.43	3.00	3.00	0.00
2,200.00	21.95	232.85	2,181.48	-109.74	-110.29	154.35	3.00	3.00	0.00
2,300.00	24.95	232.85	2,273.22	-133.77	-142.00	194.13	3.00	3.00	0.00
2,400.00	27.95	232.85	2,362.74	-160.66	-177.49	238.66	3.00	3.00	0.00
2,500.00	30.95	232.85	2,449.82	-190.35	-216.66	287.81	3.00	3.00	0.00
2,600.00	33.95	232.85	2,534.20	-222.75	-259.42	341.45	3.00	3.00	0.00
2,700.00	36.95	232.85	2,615.66	-257.77	-305.63	399.44	3.00	3.00	0.00
2,800.00	39.95	232.85	2,693.97	-295.32	-355.18	461.60	3.00	3.00	0.00
2,805.72	40.12	232.85	2,698.35	-297.54	-358.11	465.28	3.00	3.00	0.00
2,900.00	40.12	232.85	2,770.45	-334.23	-406.53	526.03	0.00	0.00	0.00
3,000.00	40.12	232.85	2,846.92	-373.15	-457.89	590.46	0.00	0.00	0.00
3,100.00	40.12	232.85	2,923.39	-412.06	-509.24	654.89	0.00	0.00	0.00
3,200.00	40.12	232.85	2,999.87	-450.98	-560.60	719.33	0.00	0.00	0.00
3,300.00	40.12	232.85	3,076.34	-489.90	-611.95	783.76	0.00	0.00	0.00
3,400.00	40.12	232.85	3,152.81	-528.81	-663.31	848.19	0.00	0.00	0.00
3,500.00	40.12	232.85	3,229.29	-567.73	-714.66	912.62	0.00	0.00	0.00
3,600.00	40.12	232.85	3,305.76	-606.65	-766.02	977.06	0.00	0.00	0.00
3,700.00	40.12	232.85	3,382.23	-645.56	-817.37	1,041.49	0.00	0.00	0.00
3,800.00	40.12	232.85	3,458.71	-684.48	-868.72	1,105.92	0.00	0.00	0.00
3,900.00	40.12	232.85	3,535.18	-723.40	-920.08	1,170.35	0.00	0.00	0.00
4,000.00	40.12	232.85	3,611.65	-762.31	-971.43	1,234.79	0.00	0.00	0.00
4,100.00	40.12	232.85	3,688.13	-801.23	-1,022.79	1,299.22	0.00	0.00	0.00
4,200.00	40.12	232.85	3,764.60	-840.15	-1,074.14	1,363.65	0.00	0.00	0.00
4,300.00	40.12	232.85	3,841.07	-879.06	-1,125.50	1,428.08	0.00	0.00	0.00
4,400.00	40.12	232.85	3,917.55	-917.98	-1,176.85	1,492.51	0.00	0.00	0.00
4,500.00	40.12	232.85	3,994.02	-956.90	-1,228.21	1,556.95	0.00	0.00	0.00
4,600.00	40.12	232.85	4,070.49	-995.81	-1,279.56	1,621.38	0.00	0.00	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well PA 543-26 - Slot PA 543-26 (A4)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5248.00usft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5248.00usft (Original Well Elev)
<b>Site:</b>	PA 22-25 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 543-26	<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)	
4,700.00	40.12	232.85	4,146.97	-1,034.73	-1,330.92	1,685.81	0.00	0.00	0.00	
4,773.27	40.12	232.85	4,203.00	-1,063.24	-1,368.55	1,733.02	0.00	0.00	0.00	
<b>Ohio Creek</b>										
4,800.00	40.12	232.85	4,223.44	-1,073.65	-1,382.27	1,750.24	0.00	0.00	0.00	
4,871.34	40.12	232.85	4,278.00	-1,101.41	-1,418.91	1,796.21	0.00	0.00	0.00	
<b>Upper MVRD</b>										
4,900.00	40.12	232.85	4,299.92	-1,112.56	-1,433.63	1,814.68	0.00	0.00	0.00	
4,942.07	40.12	232.85	4,332.09	-1,128.93	-1,455.23	1,841.78	0.00	0.00	0.00	
5,000.00	38.96	232.85	4,376.76	-1,151.21	-1,484.62	1,878.66	2.00	-2.00	0.00	
5,100.00	36.96	232.85	4,455.61	-1,188.35	-1,533.64	1,940.16	2.00	-2.00	0.00	
5,200.00	34.96	232.85	4,536.55	-1,223.82	-1,580.44	1,998.88	2.00	-2.00	0.00	
5,274.28	33.47	232.85	4,597.97	-1,249.04	-1,613.73	2,040.64	2.00	-2.00	0.00	
<b>PA 543-26 MVRD</b>										
5,300.00	32.96	232.85	4,619.49	-1,257.55	-1,624.96	2,054.73	2.00	-2.00	0.00	
5,400.00	30.96	232.85	4,704.33	-1,289.52	-1,667.14	2,107.65	2.00	-2.00	0.00	
5,500.00	28.96	232.85	4,790.96	-1,319.68	-1,706.94	2,157.59	2.00	-2.00	0.00	
5,600.00	26.96	232.85	4,879.29	-1,347.99	-1,744.30	2,204.47	2.00	-2.00	0.00	
5,700.00	24.96	232.85	4,969.19	-1,374.43	-1,779.19	2,248.23	2.00	-2.00	0.00	
5,800.00	22.96	232.85	5,060.57	-1,398.95	-1,811.55	2,288.84	2.00	-2.00	0.00	
5,900.00	20.96	232.85	5,153.31	-1,421.53	-1,841.35	2,326.23	2.00	-2.00	0.00	
6,000.00	18.96	232.85	5,247.30	-1,442.15	-1,868.55	2,360.36	2.00	-2.00	0.00	
6,100.00	16.96	232.85	5,342.43	-1,460.77	-1,893.12	2,391.18	2.00	-2.00	0.00	
6,189.06	15.18	232.85	5,428.00	-1,475.65	-1,912.77	2,415.83	2.00	-2.00	0.00	
<b>Top of Gas</b>										
6,200.00	14.96	232.85	5,438.57	-1,477.37	-1,915.04	2,418.68	2.00	-2.00	0.00	
6,300.00	12.96	232.85	5,535.61	-1,491.94	-1,934.26	2,442.79	2.00	-2.00	0.00	
6,400.00	10.96	232.85	5,633.43	-1,504.45	-1,950.77	2,463.51	2.00	-2.00	0.00	
6,500.00	8.96	232.85	5,731.92	-1,514.90	-1,964.55	2,480.80	2.00	-2.00	0.00	
6,600.00	6.96	232.85	5,830.96	-1,523.26	-1,975.59	2,494.65	2.00	-2.00	0.00	
6,700.00	4.96	232.85	5,930.41	-1,529.53	-1,983.86	2,505.03	2.00	-2.00	0.00	
6,800.00	2.96	232.85	6,030.17	-1,533.70	-1,989.36	2,511.93	2.00	-2.00	0.00	
6,900.00	0.96	232.85	6,130.10	-1,535.76	-1,992.08	2,515.34	2.00	-2.00	0.00	
6,947.90	0.00	0.00	6,178.00	-1,536.00	-1,992.40	2,515.74	2.00	-2.00	0.00	
7,000.00	0.00	0.00	6,230.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,330.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,430.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
7,300.00	0.00	0.00	6,530.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
7,400.00	0.00	0.00	6,630.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
7,497.90	0.00	0.00	6,728.00	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
<b>Cameo</b>										
7,500.00	0.00	0.00	6,730.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
7,600.00	0.00	0.00	6,830.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
7,700.00	0.00	0.00	6,930.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,030.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,130.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,230.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,330.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
8,200.00	0.00	0.00	7,430.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
8,300.00	0.00	0.00	7,530.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
8,400.00	0.00	0.00	7,630.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
8,497.90	0.00	0.00	7,728.00	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	
<b>RLNS</b>										
8,500.00	0.00	0.00	7,730.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00	

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well PA 543-26 - Slot PA 543-26 (A4)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	WELL @ 5248.00usft (Original Well Elev)
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	WELL @ 5248.00usft (Original Well Elev)
<b>Site:</b>	PA 22-25 Pad	<b>North Reference:</b>	True
<b>Well:</b>	PA 543-26	<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)
8,600.00	0.00	0.00	7,830.10	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00
8,647.90	0.00	0.00	7,878.00	-1,536.00	-1,992.40	2,515.74	0.00	0.00	0.00
PA 543-26 PBHL - PBHL (PA 543-26)									

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									
SHL (PA 543-26)	0.00	0.00	0.00	-3.35	-4.51	1,615,186.27	2,308,750.68	39.4968745	-107.9498248
- plan misses target center by 5.62usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
PBHL (PA 543-26)	0.00	0.00	7,878.00	-1,536.00	-1,992.40	1,613,707.77	2,306,722.19	39.4926664	-107.9568687
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,099.24	9 5/8" @ 1100' MD	9.62	13.50	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,773.27	4,203.00	Ohio Creek		0.00		
4,871.34	4,278.00	Upper MVRD		0.00		
6,189.06	5,428.00	Top of Gas		0.00		
7,497.90	6,728.00	Cameo		0.00		
8,497.90	7,728.00	RLNS		0.00		