



## Directional Survey Certification

2948 I-70 Business Loop  
Grand Junction, CO 81504  
(970)-245-9447 Fax (970)-245-9454

Operator	TEP Rocky Mountain, LLC.
Well Name & No.	PA 12-26
County & State	Garfield County, CO
SDI Job No.	OP.011496
Rig	H&P 271

I, Mel Mireles Jr., having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 122 feet to a measured depth of 8,875 feet is true and correct as determined from all available records.

A handwritten signature in black ink, appearing to read 'Mel Mireles Jr.', written over a horizontal line.

Signature

27-Jul-18

Date

### Mel Mireles Jr.

Grand Junction Assistant Well Planner  
Scientific Drilling - Colorado District

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 12-26 - Slot PA 12-26 (A12)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
<b>Site:</b>	PA 23-26 Pad	<b>MD Reference:</b>	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
<b>Well:</b>	PA 12-26	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

<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 23-26 Pad			
Site Position:		Northing:	1,614,399.90 usft	Latitude:	39.4943598
From:	Map	Easting:	2,303,951.10 usft	Longitude:	-107.9667508
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.56 °

Well	PA 12-26 - Slot PA 12-26 (A12), A12					
Well Position	+N/-S	0.00 usft	Northing:	1,614,399.20 usft	Latitude:	39.4943539
	+E/-W	0.00 usft	Easting:	2,303,897.90 usft	Longitude:	-107.9669391
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,637.00 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	7/10/2018	9.37	65.75	51,610

<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	312.79	

<b>Survey Program</b>	<b>Date</b>	7/27/2018			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
122.00	854.00	Survey #1 - Gyro MWD Survey (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5	
928.00	1,052.00	Survey #2 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM	
1,173.00	8,875.00	Survey #3 - Production MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM	

<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>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
122.00	0.44	157.24	122.00	-0.43	0.18	-0.43	0.36	0.36	0.00	
<b>First SDI Gyro MWD Survey</b>										
213.00	0.70	155.74	212.99	-1.26	0.54	-1.26	0.29	0.29	-1.65	
305.00	1.41	269.74	304.98	-1.78	-0.36	-0.95	1.97	0.77	123.91	
397.00	3.78	300.59	396.89	-0.24	-4.10	2.85	2.90	2.58	33.53	
489.00	6.07	315.53	488.54	4.78	-10.12	10.67	2.83	2.49	16.24	
581.00	9.15	316.85	579.72	13.59	-18.53	22.83	3.35	3.35	1.43	
672.00	12.05	319.45	669.16	26.08	-29.66	39.48	3.23	3.19	2.86	

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well PA 12-26 - Slot PA 12-26 (A12)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
<b>Site:</b>	PA 23-26 Pad	<b>MD Reference:</b>	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
<b>Well:</b>	PA 12-26	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

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)
762.00	14.60	314.65	756.73	41.20	-43.84	60.16	3.09	2.83	-5.33
854.00	17.95	311.57	845.04	58.76	-62.70	85.93	3.76	3.64	-3.35
Last SDI Gyro MWD Survey									
928.00	20.77	311.57	914.85	75.03	-81.05	110.45	3.81	3.81	0.00
First SDI Surface MWD Survey									
1,025.00	23.41	314.57	1,004.72	99.97	-107.65	146.91	2.96	2.72	3.09
1,052.00	24.09	313.64	1,029.43	107.54	-115.46	157.78	2.88	2.52	-3.44
Last SDI Surface MWD Survey									
1,173.00	24.94	312.31	1,139.53	141.76	-152.20	207.99	0.84	0.70	-1.10
First SDI Production MWD Survey									
1,267.00	26.59	312.15	1,224.18	169.22	-182.45	248.84	1.76	1.76	-0.17
1,362.00	27.71	313.43	1,308.71	198.67	-214.25	292.19	1.33	1.18	1.35
1,456.00	28.66	317.49	1,391.57	230.31	-245.36	336.51	2.28	1.01	4.32
1,551.00	27.87	315.14	1,475.24	262.85	-276.42	381.41	1.44	-0.83	-2.47
1,645.00	28.17	315.57	1,558.23	294.27	-307.45	425.52	0.38	0.32	0.46
1,740.00	27.63	315.78	1,642.18	326.07	-338.51	469.92	0.58	-0.57	0.22
1,834.00	27.91	315.61	1,725.36	357.41	-369.10	513.66	0.31	0.30	-0.18
1,928.00	26.93	313.41	1,808.80	387.76	-399.96	556.92	1.50	-1.04	-2.34
2,023.00	28.23	314.45	1,893.00	418.28	-431.63	600.89	1.46	1.37	1.09
2,117.00	27.71	315.33	1,976.02	449.39	-462.86	644.95	0.71	-0.55	0.94
2,212.00	29.41	314.52	2,059.46	481.46	-495.02	690.33	1.84	1.79	-0.85
2,306.00	28.15	312.34	2,141.85	512.58	-527.87	735.58	1.74	-1.34	-2.32
2,401.00	29.10	314.52	2,225.24	543.87	-560.91	781.08	1.49	1.00	2.29
2,495.00	27.24	313.44	2,308.10	574.69	-592.83	825.44	2.05	-1.98	-1.15
2,589.00	28.47	315.08	2,391.21	605.35	-624.27	869.34	1.54	1.31	1.74
2,684.00	28.25	313.25	2,474.81	636.79	-656.64	914.45	0.94	-0.23	-1.93
2,778.00	27.50	313.56	2,557.90	666.99	-688.57	958.40	0.81	-0.80	0.33
2,873.00	28.05	313.94	2,641.96	697.60	-720.54	1,002.66	0.61	0.58	0.40
2,967.00	27.33	313.36	2,725.19	727.75	-752.15	1,046.34	0.82	-0.77	-0.62
3,062.00	26.15	313.28	2,810.03	757.08	-783.25	1,089.08	1.24	-1.24	-0.08
3,156.00	28.00	317.03	2,893.73	787.43	-813.37	1,131.80	2.68	1.97	3.99
3,250.00	27.46	315.80	2,976.93	819.11	-843.52	1,175.45	0.84	-0.57	-1.31
3,344.00	26.47	315.49	3,060.71	849.59	-873.32	1,218.02	1.06	-1.05	-0.33
3,439.00	28.23	315.63	3,145.09	880.75	-903.87	1,261.61	1.85	1.85	0.15
3,533.00	27.56	315.99	3,228.17	912.29	-934.53	1,305.53	0.73	-0.71	0.38
3,628.00	29.39	312.72	3,311.68	943.91	-966.93	1,350.79	2.53	1.93	-3.44
3,722.00	28.89	311.67	3,393.78	974.66	-1,000.84	1,396.56	0.76	-0.53	-1.12
3,816.00	27.23	311.63	3,476.73	1,004.04	-1,033.88	1,440.77	1.77	-1.77	-0.04
3,910.00	25.92	313.20	3,560.80	1,032.39	-1,064.93	1,482.81	1.58	-1.39	1.67
4,005.00	27.06	312.58	3,645.82	1,061.23	-1,095.98	1,525.19	1.23	1.20	-0.65
4,099.00	28.33	312.65	3,729.05	1,090.81	-1,128.13	1,568.87	1.35	1.35	0.07
4,194.00	27.33	312.98	3,813.06	1,120.95	-1,160.66	1,613.22	1.07	-1.05	0.35
4,288.00	26.14	313.62	3,897.01	1,149.94	-1,191.44	1,655.51	1.30	-1.27	0.68
4,383.00	27.26	312.80	3,981.88	1,179.16	-1,222.55	1,698.19	1.24	1.18	-0.86

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<b>Site:</b>	PA 23-26 Pad	<b>MD Reference:</b>	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
<b>Well:</b>	PA 12-26	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

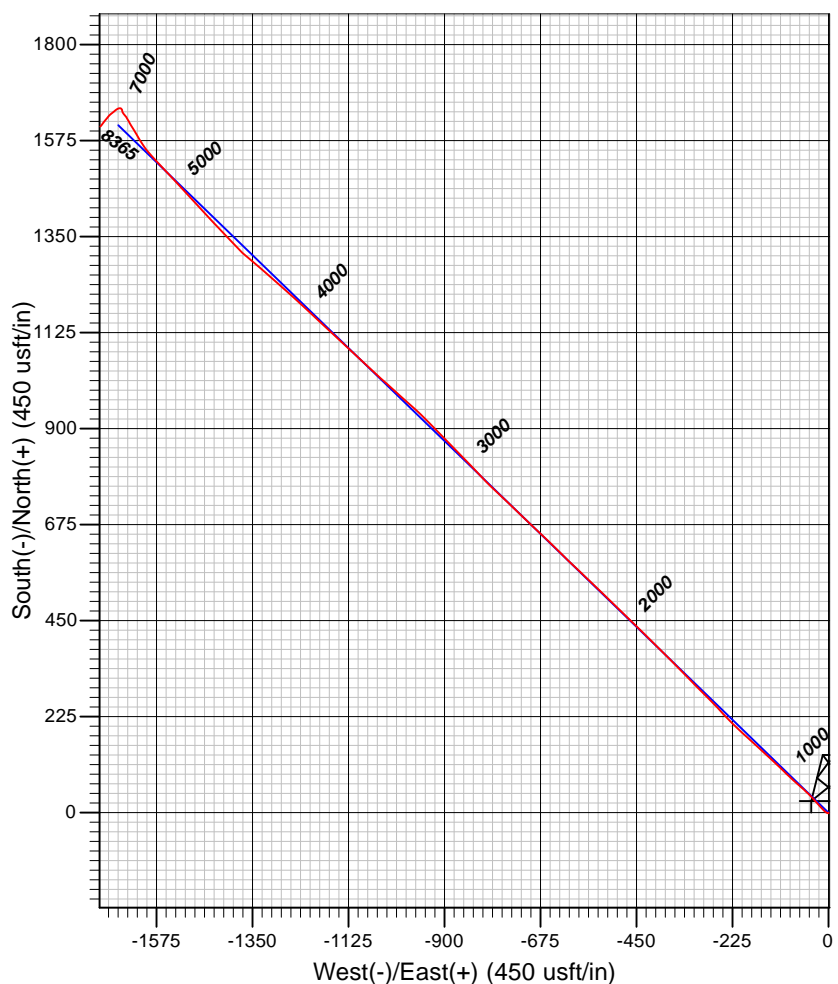
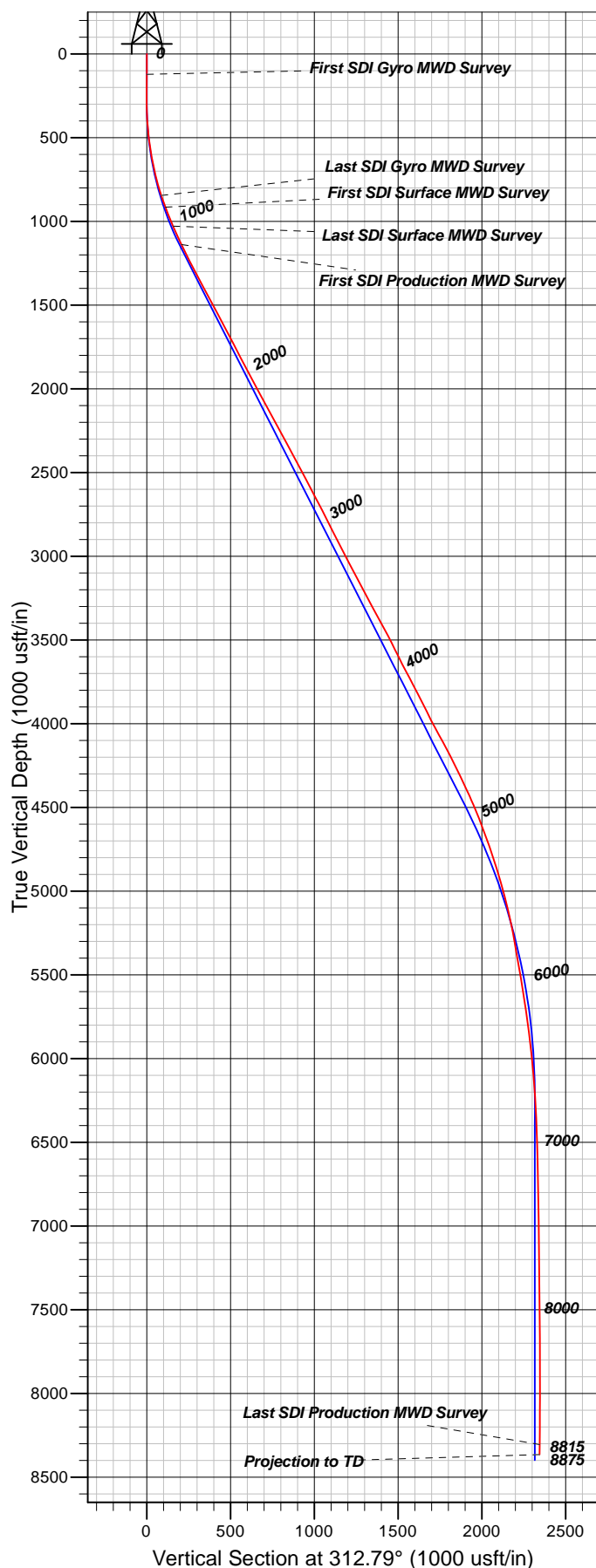
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,477.00	28.94	311.97	4,064.80	1,209.00	-1,255.26	1,742.46	1.83	1.79	-0.88
4,571.00	28.00	311.23	4,147.43	1,238.75	-1,288.76	1,787.26	1.07	-1.00	-0.79
4,666.00	26.80	311.43	4,231.77	1,267.62	-1,321.59	1,830.97	1.27	-1.26	0.21
4,760.00	25.34	309.65	4,316.21	1,294.48	-1,352.97	1,872.24	1.76	-1.55	-1.89
4,854.00	25.10	314.98	4,401.26	1,321.42	-1,382.57	1,912.25	2.43	-0.26	5.67
4,949.00	22.71	317.73	4,488.10	1,349.23	-1,409.16	1,950.66	2.78	-2.52	2.89
5,043.00	22.03	316.48	4,575.03	1,375.45	-1,433.50	1,986.33	0.88	-0.72	-1.33
5,137.00	19.43	316.30	4,662.94	1,399.54	-1,456.45	2,019.54	2.77	-2.77	-0.19
5,232.00	18.83	317.99	4,752.69	1,422.35	-1,477.63	2,050.58	0.86	-0.63	1.78
5,326.00	17.77	316.08	4,841.94	1,443.96	-1,497.73	2,080.01	1.30	-1.13	-2.03
5,421.00	16.65	318.77	4,932.68	1,464.64	-1,516.76	2,108.02	1.45	-1.18	2.83
5,515.00	15.30	317.04	5,023.05	1,483.84	-1,534.09	2,133.78	1.52	-1.44	-1.84
5,609.00	12.98	316.56	5,114.20	1,500.58	-1,549.80	2,156.69	2.47	-2.47	-0.51
5,703.00	11.50	316.40	5,206.06	1,515.04	-1,563.52	2,176.57	1.57	-1.57	-0.17
5,798.00	9.91	317.40	5,299.40	1,527.91	-1,575.58	2,194.17	1.69	-1.67	1.05
5,892.00	9.67	316.90	5,392.03	1,539.63	-1,586.45	2,210.11	0.27	-0.26	-0.53
5,986.00	9.63	320.89	5,484.70	1,551.50	-1,596.81	2,225.77	0.71	-0.04	4.24
6,081.00	9.95	328.14	5,578.32	1,564.63	-1,606.15	2,241.55	1.34	0.34	7.63
6,175.00	8.74	328.13	5,671.07	1,577.60	-1,614.21	2,256.27	1.29	-1.29	-0.01
6,269.00	8.25	328.67	5,764.04	1,589.42	-1,621.49	2,269.65	0.53	-0.52	0.57
6,364.00	7.91	328.74	5,858.10	1,600.83	-1,628.42	2,282.49	0.36	-0.36	0.07
6,458.00	6.67	329.60	5,951.34	1,611.07	-1,634.54	2,293.93	1.32	-1.32	0.91
6,553.00	4.92	330.78	6,045.85	1,619.38	-1,639.32	2,303.09	1.85	-1.84	1.24
6,647.00	4.37	328.83	6,139.54	1,625.97	-1,643.15	2,310.36	0.61	-0.59	-2.07
6,741.00	3.93	322.87	6,233.29	1,631.60	-1,646.94	2,316.98	0.65	-0.47	-6.34
6,835.00	2.75	321.16	6,327.13	1,635.92	-1,650.30	2,322.38	1.26	-1.26	-1.82
6,930.00	2.75	326.09	6,422.02	1,639.59	-1,653.00	2,326.85	0.25	0.00	5.19
7,024.00	1.81	346.51	6,515.95	1,642.91	-1,654.61	2,330.28	1.31	-1.00	21.72
7,119.00	1.67	349.89	6,610.91	1,645.73	-1,655.20	2,332.64	0.18	-0.15	3.56
7,212.00	1.02	333.08	6,703.88	1,647.80	-1,655.81	2,334.49	0.81	-0.70	-18.08
7,307.00	0.96	317.51	6,798.87	1,649.14	-1,656.73	2,336.08	0.29	-0.06	-16.39
7,402.00	0.68	300.04	6,893.86	1,650.01	-1,657.76	2,337.42	0.39	-0.29	-18.39
7,496.00	0.86	297.35	6,987.85	1,650.61	-1,658.87	2,338.65	0.20	0.19	-2.86
7,591.00	1.09	274.00	7,082.83	1,651.00	-1,660.40	2,340.04	0.48	0.24	-24.58
7,685.00	1.24	252.21	7,176.81	1,650.76	-1,662.26	2,341.23	0.49	0.16	-23.18
7,779.00	1.88	247.28	7,270.78	1,649.85	-1,664.65	2,342.37	0.70	0.68	-5.24
7,873.00	2.59	240.79	7,364.71	1,648.22	-1,667.93	2,343.67	0.80	0.76	-6.90
7,967.00	1.67	229.80	7,458.64	1,646.30	-1,670.83	2,344.49	1.07	-0.98	-11.69
8,062.00	1.67	227.95	7,553.60	1,644.48	-1,672.92	2,344.78	0.06	0.00	-1.95
8,157.00	2.07	234.23	7,648.55	1,642.55	-1,675.34	2,345.25	0.47	0.42	6.61
8,251.00	2.66	232.48	7,742.47	1,640.22	-1,678.44	2,345.95	0.63	0.63	-1.86
8,346.00	3.38	228.10	7,837.34	1,637.01	-1,682.28	2,346.58	0.80	0.76	-4.61
8,440.00	4.52	223.73	7,931.11	1,632.48	-1,686.90	2,346.90	1.25	1.21	-4.65

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<b>Well:</b>	PA 12-26	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Grand Junction District

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)
8,534.00	4.05	217.86	8,024.85	1,627.19	-1,691.50	2,346.67	0.68	-0.50	-6.24
8,628.00	3.94	217.52	8,118.62	1,622.01	-1,695.50	2,346.09	0.12	-0.12	-0.36
8,722.00	4.14	216.37	8,212.39	1,616.71	-1,699.48	2,345.42	0.23	0.21	-1.22
8,815.00	4.13	217.05	8,305.15	1,611.34	-1,703.49	2,344.71	0.05	-0.01	0.73
Last SDI Production MWD Survey									
8,875.00	4.13	217.05	8,364.99	1,607.89	-1,706.09	2,344.27	0.00	0.00	0.00
Projection to TD - PBHL(PA 12-26)									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
122.00	122.00	-0.43	0.18	First SDI Gyro MWD Survey
854.00	845.04	58.76	-62.70	Last SDI Gyro MWD Survey
928.00	914.85	75.03	-81.05	First SDI Surface MWD Survey
1,052.00	1,029.43	107.54	-115.46	Last SDI Surface MWD Survey
1,173.00	1,139.53	141.76	-152.20	First SDI Production MWD Survey
8,815.00	8,305.15	1,611.34	-1,703.49	Last SDI Production MWD Survey
8,875.00	8,364.99	1,607.89	-1,706.09	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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#### Well Details: PA 12-26

TVD Reference: GL 5637' & RKB 24' @ 5661.00usft (H&B 271) and Level: 5637.00  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.00 0.00 1614399.20 2303897.90 39.4943539 -107.9669391 PA 12-26 (A12)

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well PA 12-26 - Slot PA 12-26 (A12), True North  
 Vertical (TVD) Reference: GL 5637' & RKB 24' @ 5661.00usft (H&P 271)  
 Section (VS) Reference: Slot - PA 12-26 (A12)(0.00N, 0.00E)  
 Measured Depth Reference: GL 5637' & RKB 24' @ 5661.00usft (H&P 271)  
 Calculation Method: Minimum Curvature

#### 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

Plan: OH

11:28, July 27 2018  
 Created By: Mel Mireles Jr.