



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 34-26
County & State	Garfield County, CO
SDI Job No.	OP.011259
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 153 feet to a measured depth of 8,383 feet is true and correct as determined from all available records.

Signature

 09-Jul-18

Date

Mel Mireles Jr.

Grand Junction Assistant Well Planner
Scientific Drilling - Colorado District



Scientific Drilling, Intl Survey Report

Company: TEP Rocky Mountain LLC	Local Co-ordinate Reference: Well PA 34-26 - Slot PA 34-26 (A9)
Project: Garfield County, CO NAD83	TVD Reference: GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
Site: PA 23-26 Pad	MD Reference: GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
Well: PA 34-26	North Reference: True
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: OH	Database: Grand Junction District

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 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 34-26 - Slot PA 34-26 (A9), A9						
Well Position	+N/-S	0.00 usft	Northing:	1,614,399.50 usft	Latitude:	39.4943565
	+E/-W	0.00 usft	Easting:	2,303,921.10 usft	Longitude:	-107.9668570
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,637.00 usft

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/29/2018	9.37	65.75	51,613

Design OH					
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	135.96	

Survey Program		Date 7/9/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
153.00	763.00	Survey #1 - Gyro MWD Survey (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5
835.00	1,084.00	Survey #2 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM
1,174.00	8,383.00	Survey #3 - Production MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM

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	
153.00	1.58	206.10	152.98	-1.89	-0.93	0.72	1.03	1.03	0.00	
First SDI Gyro MWD Survey										
213.00	3.34	199.42	212.92	-4.29	-1.87	1.78	2.97	2.93	-11.13	
306.00	1.58	145.37	305.84	-7.90	-2.05	4.25	2.94	-1.89	-58.12	
398.00	4.93	114.26	397.69	-10.57	2.28	9.18	3.99	3.64	-33.82	
490.00	6.86	140.10	489.21	-16.41	9.41	18.34	3.52	2.10	28.09	
581.00	9.68	149.85	579.26	-27.19	16.74	31.19	3.45	3.10	10.71	
673.00	11.88	148.45	669.63	-41.95	25.58	47.94	2.41	2.39	-1.52	



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Site:	PA 23-26 Pad	MD Reference:	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
Well:	PA 34-26	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)	
763.00	12.40	139.13	757.63	-57.16	36.75	66.64	2.25	0.58	-10.36	
Last SDI Gyro MWD Survey										
835.00	13.30	135.89	827.83	-68.95	47.58	82.64	1.60	1.25	-4.50	
First SDI Surface MWD Survey										
929.00	15.23	132.91	918.92	-85.12	64.15	105.78	2.20	2.05	-3.17	
1,024.00	15.21	134.81	1,010.59	-102.40	82.13	130.70	0.53	-0.02	2.00	
1,084.00	15.39	134.09	1,068.47	-113.49	93.43	146.53	0.44	0.30	-1.20	
Last SDI Surface MWD Survey										
1,174.00	16.28	136.26	1,155.05	-130.91	110.73	171.08	1.19	0.99	2.41	
First SDI Production MWD Survey										
1,268.00	16.51	135.18	1,245.23	-149.90	129.25	197.61	0.41	0.24	-1.15	
1,362.00	14.96	135.96	1,335.70	-168.10	147.11	223.10	1.66	-1.65	0.83	
1,457.00	13.39	139.97	1,427.81	-185.34	162.71	246.34	1.95	-1.65	4.22	
1,551.00	11.27	139.44	1,519.64	-200.65	175.68	266.37	2.26	-2.26	-0.56	
1,645.00	10.99	137.76	1,611.87	-214.26	187.68	284.49	0.46	-0.30	-1.79	
1,740.00	10.54	140.55	1,705.20	-227.68	199.28	302.20	0.72	-0.47	2.94	
1,834.00	10.02	141.07	1,797.69	-240.68	209.89	318.92	0.56	-0.55	0.55	
1,929.00	9.65	140.88	1,891.29	-253.29	220.10	335.08	0.39	-0.39	-0.20	
2,023.00	11.67	137.96	1,983.67	-266.46	231.44	352.44	2.22	2.15	-3.11	
2,117.00	11.31	136.83	2,075.78	-280.24	244.11	371.15	0.45	-0.38	-1.20	
2,212.00	10.67	137.60	2,169.04	-293.53	256.42	389.26	0.69	-0.67	0.81	
2,306.00	10.11	138.34	2,261.50	-306.12	267.77	406.20	0.61	-0.60	0.79	
2,400.00	9.18	139.58	2,354.17	-317.99	278.12	421.93	1.01	-0.99	1.32	
2,494.00	10.45	130.97	2,446.79	-329.29	289.42	437.91	2.06	1.35	-9.16	
2,589.00	9.49	131.85	2,540.36	-340.17	301.75	454.30	1.02	-1.01	0.93	
2,683.00	11.47	136.89	2,632.79	-352.16	313.92	471.38	2.32	2.11	5.36	
2,777.00	10.93	134.39	2,725.00	-365.22	326.67	489.63	0.77	-0.57	-2.66	
2,872.00	9.86	135.04	2,818.44	-377.28	338.86	506.77	1.13	-1.13	0.68	
2,966.00	9.32	134.76	2,911.12	-388.33	349.95	522.42	0.58	-0.57	-0.30	
3,060.00	10.35	138.12	3,003.74	-399.98	360.99	538.47	1.25	1.10	3.57	
3,154.00	9.94	140.13	3,096.27	-412.49	371.83	555.00	0.58	-0.44	2.14	
3,248.00	9.77	141.43	3,188.89	-424.95	382.00	571.03	0.30	-0.18	1.38	
3,343.00	9.70	137.77	3,282.52	-437.18	392.40	587.06	0.66	-0.07	-3.85	
3,437.00	11.11	139.19	3,374.97	-449.90	403.65	604.01	1.52	1.50	1.51	
3,531.00	10.82	139.65	3,467.25	-463.48	415.28	621.86	0.32	-0.31	0.49	
3,626.00	10.41	139.11	3,560.63	-476.76	426.67	639.33	0.44	-0.43	-0.57	
3,720.00	9.91	140.84	3,653.15	-489.46	437.34	655.87	0.62	-0.53	1.84	
3,814.00	11.20	136.04	3,745.56	-502.30	448.78	673.06	1.66	1.37	-5.11	
3,909.00	10.60	137.30	3,838.85	-515.36	461.11	691.02	0.68	-0.63	1.33	
4,003.00	9.53	139.09	3,931.40	-527.60	472.07	707.43	1.19	-1.14	1.90	
4,097.00	10.82	134.77	4,023.92	-539.69	483.43	724.03	1.59	1.37	-4.60	
4,192.00	10.44	137.83	4,117.29	-552.35	495.54	741.54	0.72	-0.40	3.22	
4,286.00	11.02	132.88	4,209.65	-564.78	507.84	759.03	1.16	0.62	-5.27	
4,380.00	11.18	133.35	4,301.89	-577.15	521.05	777.10	0.20	0.17	0.50	



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Project:	Garfield County, CO NAD83	TVD Reference:	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
Site:	PA 23-26 Pad	MD Reference:	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
Well:	PA 34-26	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)	
4,475.00	10.31	133.40	4,395.23	-589.31	533.93	794.80	0.92	-0.92	0.05	
4,569.00	9.64	135.15	4,487.80	-600.67	545.59	811.07	0.78	-0.71	1.86	
4,664.00	10.48	130.37	4,581.34	-611.91	557.78	827.62	1.25	0.88	-5.03	
4,758.00	10.79	129.09	4,673.73	-622.99	571.13	844.87	0.41	0.33	-1.36	
4,853.00	10.29	129.34	4,767.13	-633.98	584.59	862.12	0.53	-0.53	0.26	
4,947.00	9.36	130.57	4,859.75	-644.27	596.89	878.07	1.01	-0.99	1.31	
5,041.00	10.29	125.21	4,952.37	-654.08	609.56	893.93	1.39	0.99	-5.70	
5,136.00	11.77	125.09	5,045.61	-664.55	624.42	911.78	1.56	1.56	-0.13	
5,230.00	10.46	126.70	5,137.85	-675.16	639.10	929.62	1.43	-1.39	1.71	
5,324.00	10.64	130.04	5,230.26	-685.84	652.59	946.67	0.68	0.19	3.55	
5,419.00	8.88	132.77	5,323.88	-696.46	664.69	962.72	1.92	-1.85	2.87	
5,513.00	8.55	127.18	5,416.80	-705.61	675.58	976.87	0.97	-0.35	-5.95	
5,607.00	8.15	127.49	5,509.80	-713.89	686.44	990.37	0.43	-0.43	0.33	
5,701.00	6.69	129.08	5,603.01	-721.40	695.97	1,002.39	1.57	-1.55	1.69	
5,796.00	4.84	129.43	5,697.53	-727.43	703.37	1,011.87	1.95	-1.95	0.37	
5,890.00	3.75	127.64	5,791.26	-731.83	708.86	1,018.85	1.17	-1.16	-1.90	
5,984.00	3.93	128.53	5,885.05	-735.71	713.82	1,025.09	0.20	0.19	0.95	
6,078.00	2.88	116.39	5,978.88	-738.77	718.45	1,030.51	1.35	-1.12	-12.91	
6,172.00	1.35	137.10	6,072.82	-740.63	721.32	1,033.84	1.79	-1.63	22.03	
6,267.00	1.19	136.55	6,167.79	-742.16	722.76	1,035.94	0.17	-0.17	-0.58	
6,361.00	0.70	189.90	6,261.78	-743.44	723.33	1,037.26	1.02	-0.52	56.76	
6,456.00	0.76	194.85	6,356.78	-744.62	723.07	1,037.92	0.09	0.06	5.21	
6,550.00	1.04	206.45	6,450.76	-745.99	722.53	1,038.53	0.35	0.30	12.34	
6,644.00	1.84	182.12	6,544.73	-748.26	722.10	1,039.86	1.05	0.85	-25.88	
6,738.00	1.67	172.85	6,638.69	-751.12	722.21	1,042.00	0.35	-0.18	-9.86	
6,833.00	2.11	192.01	6,733.64	-754.21	722.02	1,044.09	0.80	0.46	20.17	
6,928.00	2.38	202.86	6,828.57	-757.74	720.89	1,045.84	0.53	0.28	11.42	
7,022.00	2.80	215.88	6,922.47	-761.40	718.79	1,047.01	0.77	0.45	13.85	
7,117.00	3.18	220.51	7,017.34	-765.28	715.71	1,047.66	0.47	0.40	4.87	
7,211.00	2.07	229.62	7,111.24	-768.36	712.73	1,047.80	1.26	-1.18	9.69	
7,305.00	1.58	245.27	7,205.20	-770.00	710.26	1,047.27	0.74	-0.52	16.65	
7,399.00	1.45	226.12	7,299.16	-771.37	708.22	1,046.83	0.55	-0.14	-20.37	
7,493.00	1.54	235.21	7,393.13	-772.92	706.33	1,046.63	0.27	0.10	9.67	
7,588.00	1.87	223.42	7,488.09	-774.77	704.21	1,046.49	0.51	0.35	-12.41	
7,683.00	2.29	205.75	7,583.03	-777.60	702.32	1,047.22	0.80	0.44	-18.60	
7,777.00	2.37	196.66	7,676.95	-781.16	700.95	1,048.82	0.40	0.09	-9.67	
7,872.00	2.30	189.58	7,771.87	-784.92	700.07	1,050.91	0.31	-0.07	-7.45	
7,966.00	1.38	183.26	7,865.82	-787.91	699.69	1,052.79	1.00	-0.98	-6.72	
8,060.00	1.58	205.80	7,959.79	-790.21	699.06	1,054.01	0.65	0.21	23.98	
8,154.00	1.42	203.08	8,053.76	-792.45	698.04	1,054.91	0.19	-0.17	-2.89	
8,249.00	1.82	218.19	8,148.72	-794.71	696.65	1,055.57	0.61	0.42	15.91	
8,323.00	1.85	214.33	8,222.68	-796.62	695.25	1,055.97	0.17	0.04	-5.22	
Last SDI Production MWD Survey										



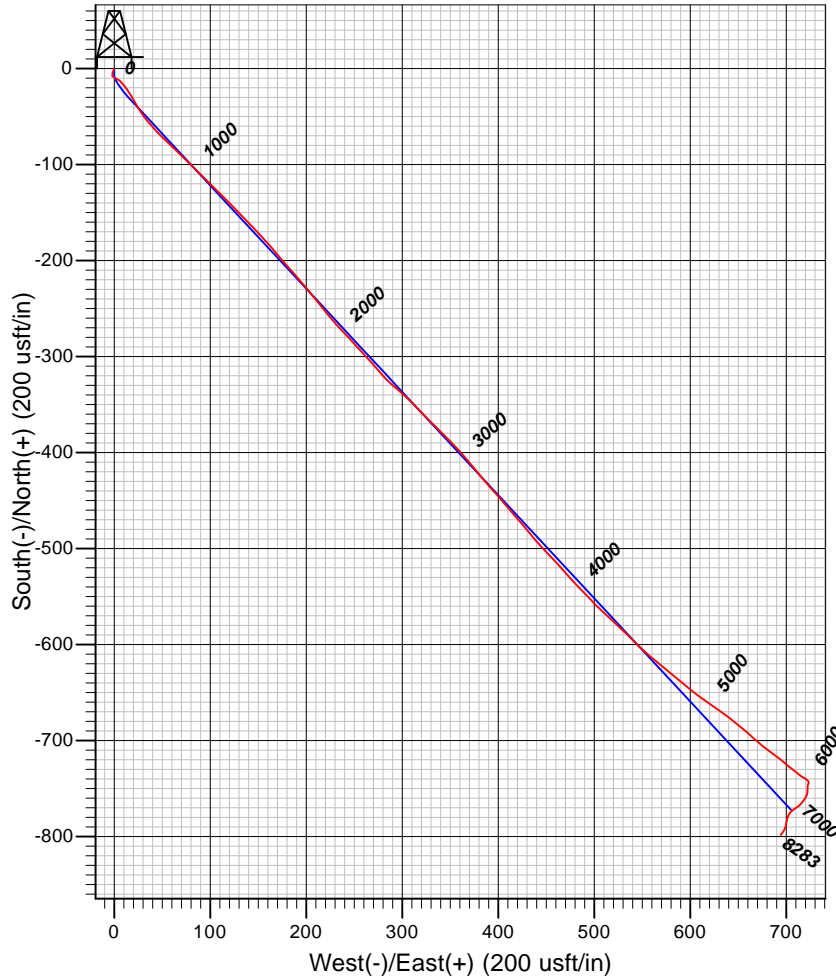
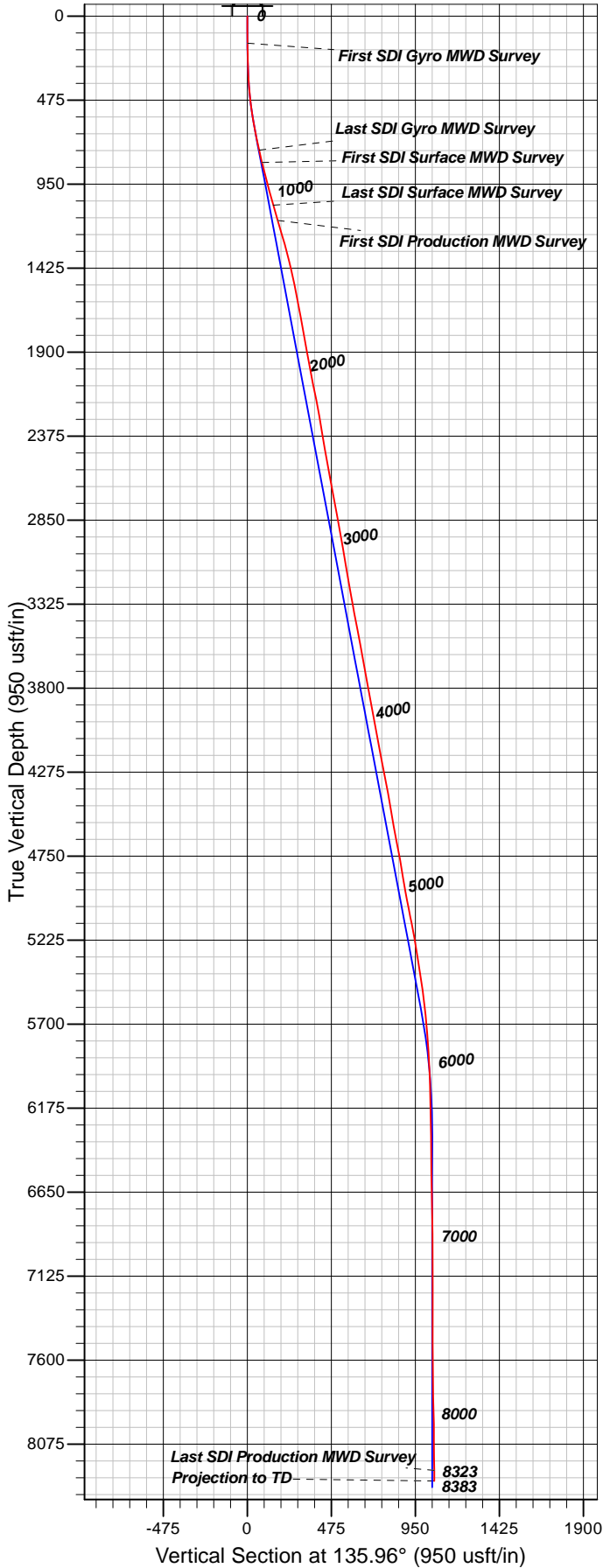
Scientific Drilling, Intl
Survey Report

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well PA 34-26 - Slot PA 34-26 (A9)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
Site:	PA 23-26 Pad	MD Reference:	GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
Well:	PA 34-26	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

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)
8,383.00	1.85	214.33	8,282.65	-798.22	694.16	1,056.36	0.00	0.00	0.00
Projection to TD - PBHL(PA 34-26)									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
153.00	152.98	-1.89	-0.93	First SDI Gyro MWD Survey
763.00	757.63	-57.16	36.75	Last SDI Gyro MWD Survey
835.00	827.83	-68.95	47.58	First SDI Surface MWD Survey
1,084.00	1,068.47	-113.49	93.43	Last SDI Surface MWD Survey
1,174.00	1,155.05	-130.91	110.73	First SDI Production MWD Survey
8,323.00	8,222.68	-796.62	695.25	Last SDI Production MWD Survey
8,383.00	8,282.65	-798.22	694.16	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



Well Details: PA 34-26

TVD Reference: GL 5637' & RKB 24' @ 5661.00usft (H&P 271) and Level: 5637.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1614399.50	2303921.10	39.4943564	-107.9668570 PA 34-26 (A9)

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well PA 34-26 - Slot PA 34-26 (A9), True North
 Vertical (TVD) Reference: GL 5637' & RKB 24' @ 5661.00usft (H&P 271)
 Section (VS) Reference: Slot - PA 34-26 (A9)(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

10:39, July 09 2018
 Created By: Mel Mireles Jr.