



#### Well Details: SG 523-26

+N/-S	+E/-W	North	East	Latitude	Longitude	Slot
0.00	0.00	1584773.70	2272320.90	39.4106432	-108.0758111	

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well SG 523-26, True North  
 Vertical (TVD) Reference: GL 5076' & RKB 24' @ 5100.00usft  
 Section (VS) Reference: Slot - (0.00N, 0.00E)  
 Measured Depth Reference: GL 5076' & RKB 24' @ 5100.00usft  
 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

17:38, November 16 2018  
 Created By: Mel Mireles Jr.



## 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.	SG 523-26
County & State	Garfield County, CO
SDI Job No.	OP.014375
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 5,723 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

16-Nov-18

Date

### Mel Mireles Jr.

Grand Junction Assistant Well Planner  
Scientific Drilling - Colorado District



## **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**SG 32-26 Pad**

**SG 523-26**

**OH**

**Design: OH**

## **Standard Survey Report**

**16 November, 2018**



<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well SG 523-26
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5076' & RKB 24' @ 5100.00usft
<b>Site:</b>	SG 32-26 Pad	<b>MD Reference:</b>	GL 5076' & RKB 24' @ 5100.00usft
<b>Well:</b>	SG 523-26	<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		SG 32-26 Pad			
Site Position:		Northing:	1,584,791.50 usft	Latitude:	39.4106932
From:	Map	Easting:	2,272,334.80 usft	Longitude:	-108.0757637
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.62 °

Well	SG 523-26					
Well Position	+N/-S	0.00 usft	Northing:	1,584,773.70 usft	Latitude:	39.4106432
	+E/-W	0.00 usft	Easting:	2,272,320.90 usft	Longitude:	-108.0758111
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,076.00 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	11/6/2018	9.35	65.57	51,660

<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	203.02	

<b>Survey Program</b>	<b>Date</b>	11/16/2018			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
122.00	305.00	Survey #1 - Gyro MWD Survey (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5	
376.00	958.00	Survey #2 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM	
1,081.00	5,723.00	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	0.18	154.16	122.00	-0.17	0.08	0.13	0.15	0.15	0.00	
<b>First SDI Gyro MWD Survey</b>										
213.00	2.64	207.42	212.97	-2.16	-0.82	2.31	2.79	2.70	58.53	
305.00	4.84	201.36	304.76	-7.66	-3.21	8.30	2.43	2.39	-6.59	
<b>Last SDI Gyro MWD Survey</b>										
376.00	7.67	204.55	375.34	-14.76	-6.27	16.03	4.01	3.99	4.49	
<b>First SDI Surface MWD Survey</b>										

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well SG 523-26
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5076' & RKB 24' @ 5100.00usft
<b>Site:</b>	SG 32-26 Pad	<b>MD Reference:</b>	GL 5076' & RKB 24' @ 5100.00usft
<b>Well:</b>	SG 523-26	<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)
468.00	11.43	206.05	466.04	-28.54	-12.83	31.28	4.10	4.09	1.63
557.00	14.77	203.59	552.72	-46.86	-21.24	51.44	3.80	3.75	-2.76
650.00	17.32	198.63	642.09	-70.85	-30.41	77.10	3.11	2.74	-5.33
744.00	20.47	197.71	731.01	-99.77	-39.88	107.42	3.37	3.35	-0.98
838.00	22.56	195.69	818.46	-132.80	-49.76	141.68	2.36	2.22	-2.15
932.00	24.65	195.64	904.59	-169.04	-59.92	179.01	2.22	2.22	-0.05
958.00	25.50	194.28	928.14	-179.68	-62.76	189.92	3.95	3.27	-5.23
Last SDI Surface MWD Survey									
1,081.00	27.41	195.71	1,038.26	-232.60	-76.96	244.17	1.64	1.55	1.16
First SDI Production MWD Survey									
1,175.00	30.59	198.12	1,120.46	-276.17	-90.26	289.48	3.60	3.38	2.56
1,269.00	34.66	199.68	1,199.62	-324.09	-106.71	340.02	4.42	4.33	1.66
1,364.00	37.17	195.42	1,276.56	-377.21	-123.44	395.45	3.73	2.64	-4.48
1,458.00	41.19	194.85	1,349.41	-434.53	-138.93	454.26	4.29	4.28	-0.61
1,552.00	40.12	191.92	1,420.73	-494.09	-153.12	514.62	2.33	-1.14	-3.12
1,646.00	38.97	192.10	1,493.22	-552.62	-165.58	573.37	1.23	-1.22	0.19
1,741.00	41.07	191.13	1,565.96	-612.46	-177.86	633.25	2.31	2.21	-1.02
1,835.00	43.22	190.50	1,635.66	-674.41	-189.69	694.89	2.33	2.29	-0.67
1,930.00	42.84	190.09	1,705.10	-738.19	-201.28	758.13	0.50	-0.40	-0.43
2,024.00	42.49	189.47	1,774.22	-800.97	-212.10	820.14	0.58	-0.37	-0.66
2,118.00	42.09	193.16	1,843.77	-862.97	-224.50	882.05	2.68	-0.43	3.93
2,213.00	41.17	193.45	1,914.78	-924.39	-239.02	944.26	0.99	-0.97	0.31
2,307.00	42.20	194.58	1,984.98	-985.04	-254.16	1,006.00	1.36	1.10	1.20
2,402.00	42.27	192.83	2,055.32	-1,047.07	-269.29	1,069.01	1.24	0.07	-1.84
2,496.00	40.43	196.56	2,125.89	-1,107.12	-285.00	1,130.43	3.27	-1.96	3.97
2,591.00	40.31	198.21	2,198.27	-1,165.84	-303.38	1,191.66	1.13	-0.13	1.74
2,685.00	38.68	198.32	2,270.81	-1,222.61	-322.12	1,251.24	1.74	-1.73	0.12
2,779.00	39.05	197.78	2,344.00	-1,278.69	-340.40	1,310.00	0.53	0.39	-0.57
2,873.00	40.49	198.21	2,416.25	-1,335.88	-358.98	1,369.90	1.56	1.53	0.46
2,968.00	39.27	198.79	2,489.15	-1,393.65	-378.30	1,430.62	1.34	-1.28	0.61
3,062.00	35.94	200.24	2,563.61	-1,447.71	-397.43	1,487.86	3.67	-3.54	1.54
3,157.00	32.83	198.14	2,642.00	-1,498.35	-415.10	1,541.38	3.50	-3.27	-2.21
3,251.00	31.09	195.87	2,721.75	-1,545.92	-429.67	1,590.86	2.25	-1.85	-2.41
3,345.00	28.48	194.18	2,803.33	-1,591.00	-441.80	1,637.09	2.92	-2.78	-1.80
3,439.00	24.92	192.93	2,887.29	-1,632.05	-451.72	1,678.75	3.83	-3.79	-1.33
3,533.00	22.77	191.14	2,973.26	-1,669.20	-459.67	1,716.05	2.41	-2.29	-1.90
3,627.00	19.88	190.94	3,060.82	-1,702.75	-466.22	1,749.49	3.08	-3.07	-0.21
3,722.00	16.47	190.63	3,151.07	-1,731.85	-471.77	1,778.45	3.59	-3.59	-0.33
3,816.00	13.46	188.64	3,241.87	-1,755.77	-475.87	1,802.07	3.25	-3.20	-2.12
3,910.00	10.54	187.36	3,333.80	-1,775.12	-478.62	1,820.95	3.12	-3.11	-1.36
3,912.42	10.46	187.36	3,336.18	-1,775.55	-478.68	1,821.37	3.41	-3.41	0.18
SG 523-26 KMVrev									
3,919.37	10.22	187.38	3,343.02	-1,776.79	-478.84	1,822.57	3.41	-3.41	0.19
SG 523-26 KMV									

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well SG 523-26
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5076' & RKB 24' @ 5100.00usft
<b>Site:</b>	SG 32-26 Pad	<b>MD Reference:</b>	GL 5076' & RKB 24' @ 5100.00usft
<b>Well:</b>	SG 523-26	<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)
4,005.00	7.30	187.61	3,427.64	-1,789.72	-480.53	1,835.13	3.41	-3.41	0.27
4,099.00	3.66	195.80	3,521.20	-1,798.53	-482.14	1,843.87	3.95	-3.87	8.71
4,194.00	1.76	152.89	3,616.10	-1,802.75	-482.30	1,847.82	2.80	-2.00	-45.17
4,288.00	0.24	84.14	3,710.08	-1,804.01	-481.45	1,848.65	1.80	-1.62	-73.14
4,383.00	0.35	164.25	3,805.08	-1,804.27	-481.17	1,848.78	0.41	0.12	84.33
4,477.00	0.73	226.32	3,899.08	-1,804.96	-481.53	1,849.55	0.69	0.40	66.03
4,572.00	1.21	246.71	3,994.06	-1,805.77	-482.88	1,850.83	0.61	0.51	21.46
4,666.00	1.29	250.85	4,088.04	-1,806.51	-484.80	1,852.26	0.13	0.09	4.40
4,760.00	1.56	251.55	4,182.01	-1,807.27	-487.01	1,853.82	0.29	0.29	0.74
4,855.00	0.24	194.75	4,277.00	-1,807.87	-488.29	1,854.87	1.52	-1.39	-59.79
4,949.00	0.89	235.94	4,370.99	-1,808.47	-488.94	1,855.68	0.77	0.69	43.82
5,044.00	1.58	252.67	4,465.97	-1,809.27	-490.80	1,857.15	0.81	0.73	17.61
5,138.00	1.73	242.55	4,559.93	-1,810.31	-493.30	1,859.08	0.35	0.16	-10.77
5,232.00	3.35	241.85	4,653.84	-1,812.26	-496.98	1,862.31	1.72	1.72	-0.74
5,327.00	3.94	246.25	4,748.64	-1,814.88	-502.41	1,866.85	0.69	0.62	4.63
5,421.00	2.11	238.83	4,842.51	-1,817.08	-506.85	1,870.61	1.99	-1.95	-7.89
5,515.00	2.65	245.63	4,936.43	-1,818.87	-510.31	1,873.61	0.65	0.57	7.23
5,610.00	2.90	244.81	5,031.32	-1,820.80	-514.49	1,877.02	0.27	0.26	-0.86
5,663.00	3.08	240.95	5,084.24	-1,822.06	-516.95	1,879.14	0.51	0.34	-7.28
Last SDI Production MWD Survey									
5,723.00	3.08	240.95	5,144.16	-1,823.63	-519.76	1,881.68	0.00	0.00	0.00
Projection to TD - SG 523-26 PBHL									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
122.00	122.00	-0.17	0.08	First SDI Gyro MWD Survey
305.00	304.76	-7.66	-3.21	Last SDI Gyro MWD Survey
376.00	375.34	-14.76	-6.27	First SDI Surface MWD Survey
958.00	928.14	-179.68	-62.76	Last SDI Surface MWD Survey
1,081.00	1,038.26	-232.60	-76.96	First SDI Production MWD Survey
5,663.00	5,084.24	-1,822.06	-516.95	Last SDI Production MWD Survey
5,723.00	5,144.16	-1,823.63	-519.76	Projection to TD

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