



## 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.	TR 313-21-597
County & State	Garfield County, CO
SDI Job No.	420117DEFK412379 & OP.000072
Rig	H&P 271

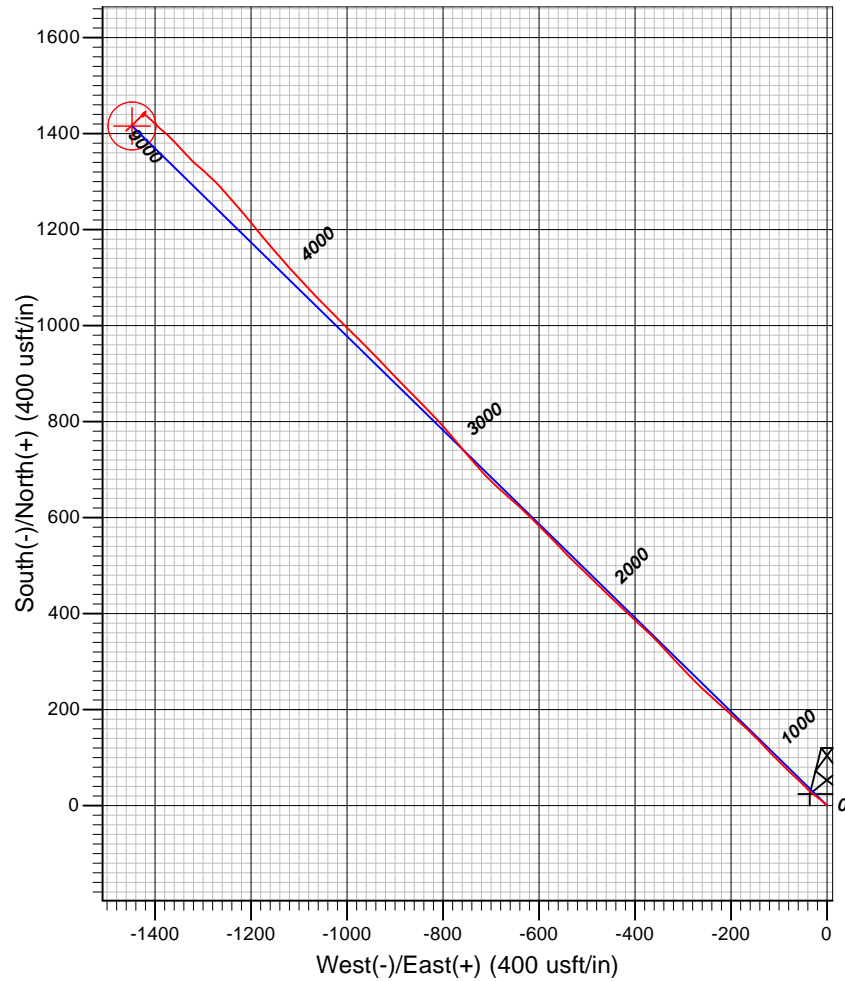
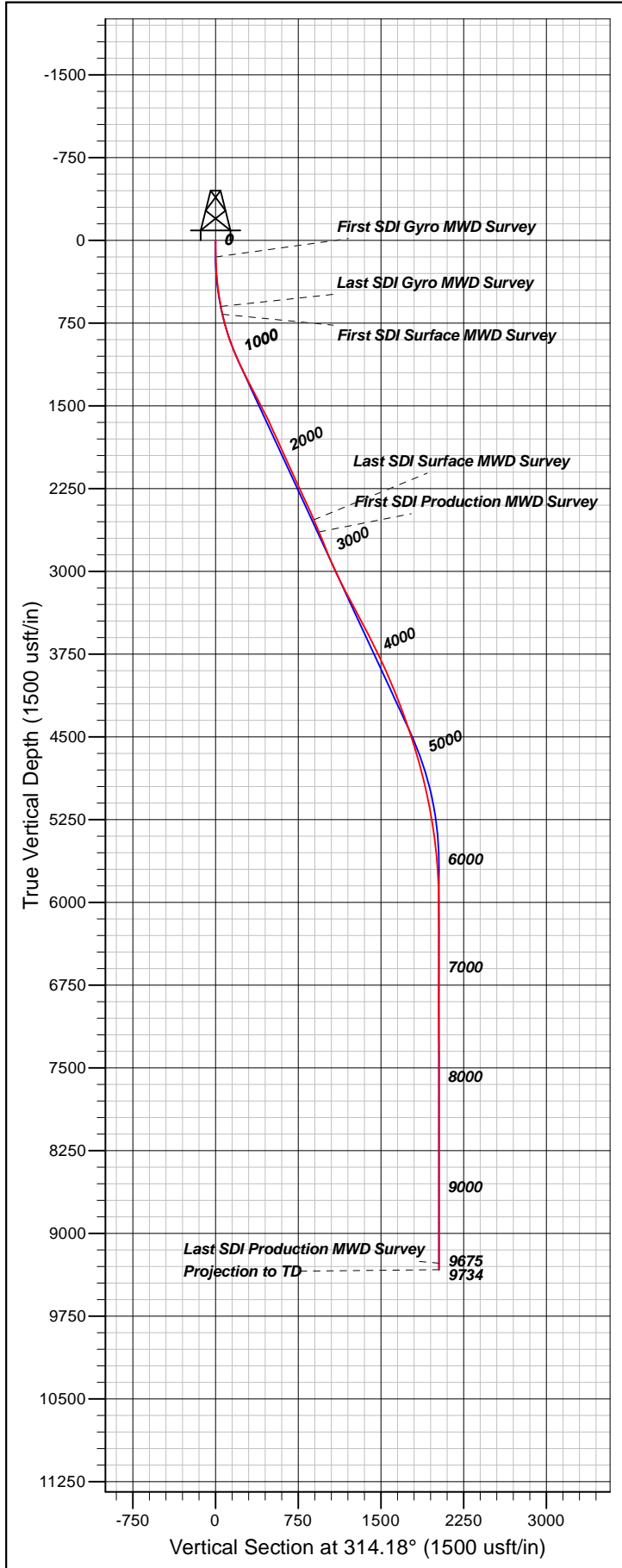
I, Mel Mireles Jr., having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 150 feet to a measured depth of 9,734 feet is true and correct as determined from all available records.

  
Signature

29-Mar-17

Date

**Mel Mireles Jr.**  
Grand Junction Assistant Well Planner  
Scientific Drilling - Colorado District



#### Well Details: Chevron TR 313-21-597

TVD Reference: GL 8292' & RKB 24' @ 8316.00usft (H&P 271)		Horizontal Reference: GL 8292' & RKB 24' @ 8316.00usft (H&P 271)		Slot	
+N/-S	+E/-W	North	East	Latitude	Longitude
0.00	0.00	1653221.70	2215060.90	39.5938430	-108.2858034

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Chevron TR 313-21-597 - Slot A5 (TR 313-21-597), True North  
 Vertical (TVD) Reference: GL 8292' & RKB 24' @ 8316.00usft (H&P 271)  
 Section (VS) Reference: Slot - A5 (TR 313-21-597)(0.00N, 0.00E)  
 Measured Depth Reference: GL 8292' & RKB 24' @ 8316.00usft (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

11:08, March 29 2017  
 Created By: Janie Collins

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well Chevron TR 313-21-597 - Slot A5 (TR 313-21-597)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 8292' & RKB 24' @ 8316.00usft (H&P 271)
<b>Site:</b>	TR 24-21-597 Pad	<b>MD Reference:</b>	GL 8292' & RKB 24' @ 8316.00usft (H&P 271)
<b>Well:</b>	Chevron TR 313-21-597	<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		

<b>Site</b>	TR 24-21-597 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,653,248.80 usft	<b>Latitude:</b> 39.5939185
<b>From:</b>	Map	<b>Easting:</b>	2,215,073.70 usft	<b>Longitude:</b> -108.2857609
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in	<b>Grid Convergence:</b> -1.76 °

<b>Well</b>	Chevron TR 313-21-597 - Slot A5 (TR 313-21-597)			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,653,221.70 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,215,060.90 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	8,292.00 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	1/18/2017	9.83	65.92	51,663
	HDGM	3/17/2017	9.82	65.92	51,644

<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	314.18

<b>Survey Program</b>	<b>Date</b>	3/29/2017		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
150.00	602.00	Survey #1 - Gyro MWD Survey (OH)	SDI Gyro MWD 104	SDI Gyro MWD Error Model Ver 1.0.4
673.00	2,716.00	Survey #2 - Surface MWD Survey (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1
2,835.00	9,734.00	Survey #3 - Production MWD (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1

<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	
150.00	1.14	300.41	149.99	0.76	-1.29	1.45	0.76	0.76	0.00	
<b>First SDI Gyro MWD Survey</b>										
240.00	2.55	316.85	239.94	2.67	-3.43	4.32	1.66	1.57	18.27	
331.00	4.57	317.02	330.76	6.80	-7.28	9.96	2.22	2.22	0.19	
422.00	7.04	307.35	421.29	12.84	-14.19	19.12	2.91	2.71	-10.63	
511.00	9.33	305.51	509.38	20.34	-24.40	31.67	2.59	2.57	-2.07	

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well Chevron TR 313-21-597 - Slot A5 (TR 313-21-597)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 8292' & RKB 24' @ 8316.00usft (H&P 271)
<b>Site:</b>	TR 24-21-597 Pad	<b>MD Reference:</b>	GL 8292' & RKB 24' @ 8316.00usft (H&P 271)
<b>Well:</b>	Chevron TR 313-21-597	<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)
602.00	10.65	313.68	599.00	30.43	-36.49	47.37	2.12	1.45	8.98
<b>Last SDI Gyro MWD Survey</b>									
673.00	12.07	316.82	668.61	40.37	-46.31	61.35	2.18	2.00	4.42
<b>First SDI Surface MWD Survey</b>									
765.00	14.89	311.78	758.07	55.27	-61.71	82.77	3.32	3.07	-5.48
858.00	17.85	314.11	847.29	73.15	-80.86	108.97	3.26	3.18	2.51
953.00	20.63	315.04	936.97	95.13	-103.15	140.27	2.94	2.93	0.98
1,047.00	22.76	316.73	1,024.31	120.09	-127.31	175.00	2.36	2.27	1.80
1,141.00	25.32	314.43	1,110.15	147.41	-154.14	213.27	2.90	2.72	-2.45
1,235.00	26.13	312.00	1,194.84	175.33	-183.87	254.06	1.41	0.86	-2.59
1,330.00	26.98	311.91	1,279.82	203.73	-215.46	296.50	0.90	0.89	-0.09
1,424.00	27.80	312.27	1,363.28	232.71	-247.55	339.71	0.89	0.87	0.38
1,519.00	27.71	315.29	1,447.35	263.31	-279.48	383.94	1.48	-0.09	3.18
1,614.00	27.44	316.68	1,531.56	294.94	-310.04	427.89	0.73	-0.28	1.46
1,708.00	25.89	318.18	1,615.56	325.99	-338.58	470.00	1.80	-1.65	1.60
1,803.00	24.56	314.17	1,701.51	355.21	-366.58	510.44	2.28	-1.40	-4.22
1,897.00	24.95	312.14	1,786.87	382.12	-395.29	549.79	0.99	0.41	-2.16
1,992.00	24.74	313.15	1,873.08	409.16	-424.65	589.69	0.50	-0.22	1.06
2,086.00	24.11	314.09	1,958.67	435.97	-452.79	628.56	0.79	-0.67	1.00
2,181.00	23.96	314.50	2,045.43	462.99	-480.49	667.25	0.24	-0.16	0.43
2,275.00	24.86	313.61	2,131.03	490.00	-508.41	706.09	1.03	0.96	-0.95
2,370.00	25.33	315.65	2,217.06	518.31	-537.07	746.38	1.04	0.49	2.15
2,464.00	24.73	315.78	2,302.23	546.78	-564.84	786.13	0.64	-0.64	0.14
2,559.00	24.75	315.34	2,388.51	575.16	-592.68	825.88	0.19	0.02	-0.46
2,653.00	24.28	314.88	2,474.04	602.79	-620.20	864.88	0.54	-0.50	-0.49
2,716.00	23.48	312.97	2,531.65	620.49	-638.57	890.38	1.77	-1.27	-3.03
<b>Last SDI Surface MWD Survey</b>									
2,835.00	22.31	311.05	2,641.27	651.48	-672.95	936.64	1.17	-0.98	-1.61
<b>First SDI Production MWD Survey</b>									
2,872.00	22.00	311.26	2,675.54	660.67	-683.45	950.57	0.86	-0.84	0.57
2,967.00	22.19	317.00	2,763.57	685.52	-709.07	986.26	2.28	0.20	6.04
3,061.00	21.64	318.31	2,850.78	711.45	-732.70	1,021.28	0.78	-0.59	1.39
3,156.00	24.18	320.28	2,938.28	739.50	-756.79	1,058.10	2.79	2.67	2.07
3,250.00	26.06	319.99	3,023.39	770.13	-782.37	1,097.79	2.00	2.00	-0.31
3,345.00	27.15	317.15	3,108.33	802.00	-810.53	1,140.20	1.76	1.15	-2.99
3,439.00	28.10	315.26	3,191.61	833.45	-840.70	1,183.75	1.37	1.01	-2.01
3,534.00	27.56	315.47	3,275.62	865.01	-871.86	1,228.09	0.58	-0.57	0.22
3,628.00	27.60	316.08	3,358.94	896.20	-902.21	1,271.60	0.30	0.04	0.65
3,723.00	27.79	316.03	3,443.06	927.99	-932.85	1,315.73	0.20	0.20	-0.05
3,817.00	28.26	315.60	3,526.04	959.66	-963.64	1,359.87	0.54	0.50	-0.46
3,912.00	26.70	314.21	3,610.32	990.61	-994.67	1,403.70	1.78	-1.64	-1.46
4,006.00	26.58	315.36	3,694.34	1,020.30	-1,024.59	1,445.85	0.56	-0.13	1.22
4,101.00	25.28	314.94	3,779.77	1,049.75	-1,053.88	1,487.38	1.38	-1.37	-0.44

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well Chevron TR 313-21-597 - Slot A5 (TR 313-21-597)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 8292' & RKB 24' @ 8316.00usft (H&P 271)
<b>Site:</b>	TR 24-21-597 Pad	<b>MD Reference:</b>	GL 8292' & RKB 24' @ 8316.00usft (H&P 271)
<b>Well:</b>	Chevron TR 313-21-597	<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)
4,195.00	24.56	318.05	3,865.02	1,078.46	-1,081.15	1,526.94	1.59	-0.77	3.31
4,290.00	23.61	317.09	3,951.75	1,107.08	-1,107.30	1,565.64	1.08	-1.00	-1.01
4,384.00	22.11	317.38	4,038.37	1,133.88	-1,132.10	1,602.11	1.60	-1.60	0.31
4,479.00	22.16	320.80	4,126.37	1,160.93	-1,155.53	1,637.76	1.36	0.05	3.60
4,574.00	21.17	320.45	4,214.66	1,188.04	-1,177.77	1,672.60	1.05	-1.04	-0.37
4,668.00	20.31	319.81	4,302.57	1,213.59	-1,199.11	1,705.71	0.95	-0.91	-0.68
4,762.00	19.38	320.17	4,390.98	1,238.03	-1,219.63	1,737.46	1.00	-0.99	0.38
4,857.00	18.55	318.75	4,480.83	1,261.49	-1,239.69	1,768.20	1.00	-0.87	-1.49
4,951.00	18.20	318.05	4,570.03	1,283.65	-1,259.36	1,797.75	0.44	-0.37	-0.74
5,046.00	15.74	313.74	4,660.89	1,303.60	-1,278.59	1,825.44	2.91	-2.59	-4.54
5,140.00	14.86	311.72	4,751.56	1,320.44	-1,296.80	1,850.23	1.09	-0.94	-2.15
5,235.00	13.81	310.67	4,843.60	1,335.93	-1,314.49	1,873.72	1.14	-1.11	-1.11
5,329.00	12.75	317.87	4,935.09	1,350.94	-1,329.96	1,895.27	2.09	-1.13	7.66
5,424.00	12.31	316.56	5,027.83	1,366.07	-1,343.96	1,915.85	0.55	-0.46	-1.38
5,519.00	11.90	317.03	5,120.72	1,380.59	-1,357.60	1,935.76	0.44	-0.43	0.49
5,613.00	10.46	313.83	5,212.93	1,393.59	-1,370.36	1,953.97	1.67	-1.53	-3.40
5,708.00	8.53	310.93	5,306.63	1,404.18	-1,381.90	1,969.63	2.09	-2.03	-3.05
5,802.00	7.71	312.24	5,399.68	1,412.98	-1,391.84	1,982.89	0.89	-0.87	1.39
5,897.00	5.19	314.27	5,494.08	1,420.27	-1,399.63	1,993.56	2.66	-2.65	2.14
5,991.00	5.36	311.99	5,587.68	1,426.17	-1,405.94	2,002.20	0.29	0.18	-2.43
6,056.87	4.14	316.50	5,653.32	1,429.96	-1,409.86	2,007.65	1.94	-1.85	6.85
TR 313-21-598 MVRD									
6,086.00	3.61	319.46	5,682.38	1,431.42	-1,411.18	2,009.61	1.94	-1.81	10.16
6,180.00	3.58	310.77	5,776.20	1,435.58	-1,415.33	2,015.49	0.58	-0.03	-9.24
6,274.00	2.64	299.33	5,870.06	1,438.56	-1,419.44	2,020.51	1.19	-1.00	-12.17
6,369.00	0.88	241.50	5,965.02	1,439.28	-1,421.99	2,022.84	2.42	-1.85	-60.87
6,464.00	1.41	226.73	6,060.00	1,438.13	-1,423.48	2,023.11	0.63	0.56	-15.55
6,558.00	0.79	317.08	6,153.99	1,437.81	-1,424.77	2,023.81	1.72	-0.66	96.12
6,653.00	0.70	289.66	6,248.98	1,438.49	-1,425.76	2,024.99	0.38	-0.09	-28.86
6,747.00	1.06	279.03	6,342.97	1,438.82	-1,427.16	2,026.22	0.42	0.38	-11.31
6,842.00	1.05	135.63	6,437.96	1,438.33	-1,427.42	2,026.07	2.11	-0.01	-150.95
6,937.00	1.07	158.98	6,532.94	1,436.88	-1,426.49	2,024.40	0.45	0.02	24.58
7,031.00	0.97	180.24	6,626.93	1,435.27	-1,426.18	2,023.05	0.41	-0.11	22.62
7,126.00	1.14	43.74	6,721.92	1,435.15	-1,425.53	2,022.50	2.06	0.18	-143.68
7,221.00	2.46	36.54	6,816.87	1,437.47	-1,423.66	2,022.77	1.41	1.39	-7.58
7,315.00	1.96	29.13	6,910.80	1,440.49	-1,421.68	2,023.46	0.61	-0.53	-7.88
7,410.00	1.42	28.16	7,005.76	1,442.95	-1,420.33	2,024.21	0.57	-0.57	-1.02
7,504.00	0.84	19.97	7,099.74	1,444.62	-1,419.55	2,024.81	0.64	-0.62	-8.71
7,598.00	0.35	19.92	7,193.74	1,445.54	-1,419.21	2,025.21	0.52	-0.52	-0.05
7,693.00	0.20	281.32	7,288.74	1,445.85	-1,419.28	2,025.47	0.45	-0.16	-103.79
7,787.00	0.70	225.41	7,382.74	1,445.48	-1,419.85	2,025.62	0.65	0.53	-59.48
7,882.00	0.11	234.97	7,477.73	1,445.02	-1,420.33	2,025.65	0.62	-0.62	10.06
7,977.00	0.44	235.77	7,572.73	1,444.76	-1,420.71	2,025.74	0.35	0.35	0.84

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well Chevron TR 313-21-597 - Slot A5 (TR 313-21-597)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 8292' & RKB 24' @ 8316.00usft (H&P 271)
<b>Site:</b>	TR 24-21-597 Pad	<b>MD Reference:</b>	GL 8292' & RKB 24' @ 8316.00usft (H&P 271)
<b>Well:</b>	Chevron TR 313-21-597	<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)
8,071.00	0.68	245.54	7,666.73	1,444.33	-1,421.52	2,026.02	0.27	0.26	10.39
8,166.00	0.88	232.62	7,761.72	1,443.65	-1,422.61	2,026.33	0.28	0.21	-13.60
8,260.00	1.40	241.54	7,855.70	1,442.66	-1,424.19	2,026.78	0.58	0.55	9.49
8,355.00	1.06	211.61	7,950.68	1,441.36	-1,425.67	2,026.93	0.75	-0.36	-31.51
8,449.00	1.32	206.25	8,044.66	1,439.65	-1,426.61	2,026.41	0.30	0.28	-5.70
8,544.00	1.34	212.08	8,139.63	1,437.73	-1,427.68	2,025.84	0.14	0.02	6.14
8,638.00	1.48	223.09	8,233.60	1,435.91	-1,429.09	2,025.59	0.32	0.15	11.71
8,733.00	1.90	223.90	8,328.56	1,433.88	-1,431.02	2,025.56	0.44	0.44	0.85
8,827.00	2.11	223.51	8,422.50	1,431.50	-1,433.30	2,025.53	0.22	0.22	-0.41
8,922.00	2.08	224.83	8,517.44	1,429.01	-1,435.72	2,025.53	0.06	-0.03	1.39
9,017.00	2.31	224.06	8,612.37	1,426.41	-1,438.26	2,025.54	0.24	0.24	-0.81
9,111.00	2.28	226.13	8,706.30	1,423.76	-1,440.93	2,025.60	0.09	-0.03	2.20
9,206.00	2.11	227.43	8,801.23	1,421.26	-1,443.58	2,025.77	0.19	-0.18	1.37
9,300.00	2.20	225.85	8,895.16	1,418.84	-1,446.15	2,025.92	0.11	0.10	-1.68
9,395.00	2.11	226.56	8,990.09	1,416.36	-1,448.73	2,026.04	0.10	-0.09	0.75
9,489.00	2.20	229.46	9,084.03	1,414.00	-1,451.35	2,026.28	0.15	0.10	3.09
9,584.00	2.64	228.48	9,178.94	1,411.36	-1,454.38	2,026.61	0.47	0.46	-1.03
9,675.00	3.08	226.12	9,269.83	1,408.28	-1,457.71	2,026.85	0.50	0.48	-2.59
Last SDI Production MWD Survey									
9,734.00	3.08	226.12	9,328.74	1,406.08	-1,459.99	2,026.96	0.00	0.00	0.00
Projection to TD - TR 313-21-598 PBHL									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
150.00	149.99	0.76	-1.29	First SDI Gyro MWD Survey
602.00	599.00	30.43	-36.49	Last SDI Gyro MWD Survey
673.00	668.61	40.37	-46.31	First SDI Surface MWD Survey
2,716.00	2,531.65	620.49	-638.57	Last SDI Surface MWD Survey
2,835.00	2,641.27	651.48	-672.95	First SDI Production MWD Survey
9,675.00	9,269.83	1,408.28	-1,457.71	Last SDI Production MWD Survey
9,734.00	9,328.74	1,406.08	-1,459.99	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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