



TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 11-22 Pad

SG 314-15 - Slot SG 314-15 (A2)

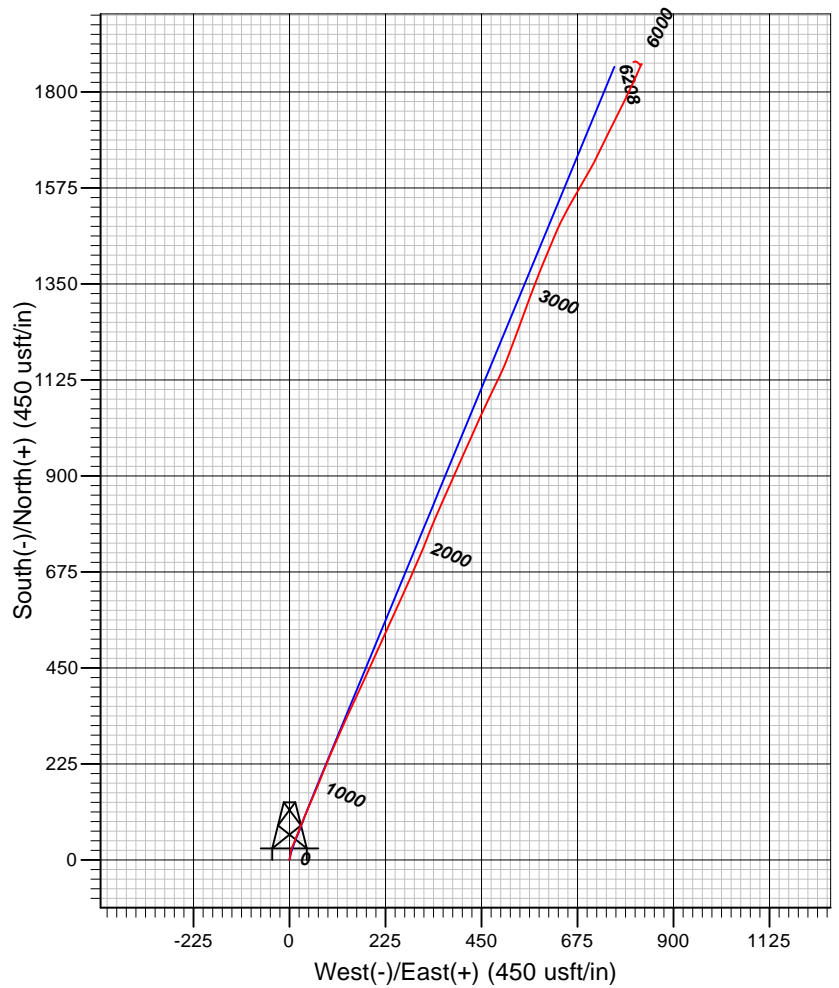
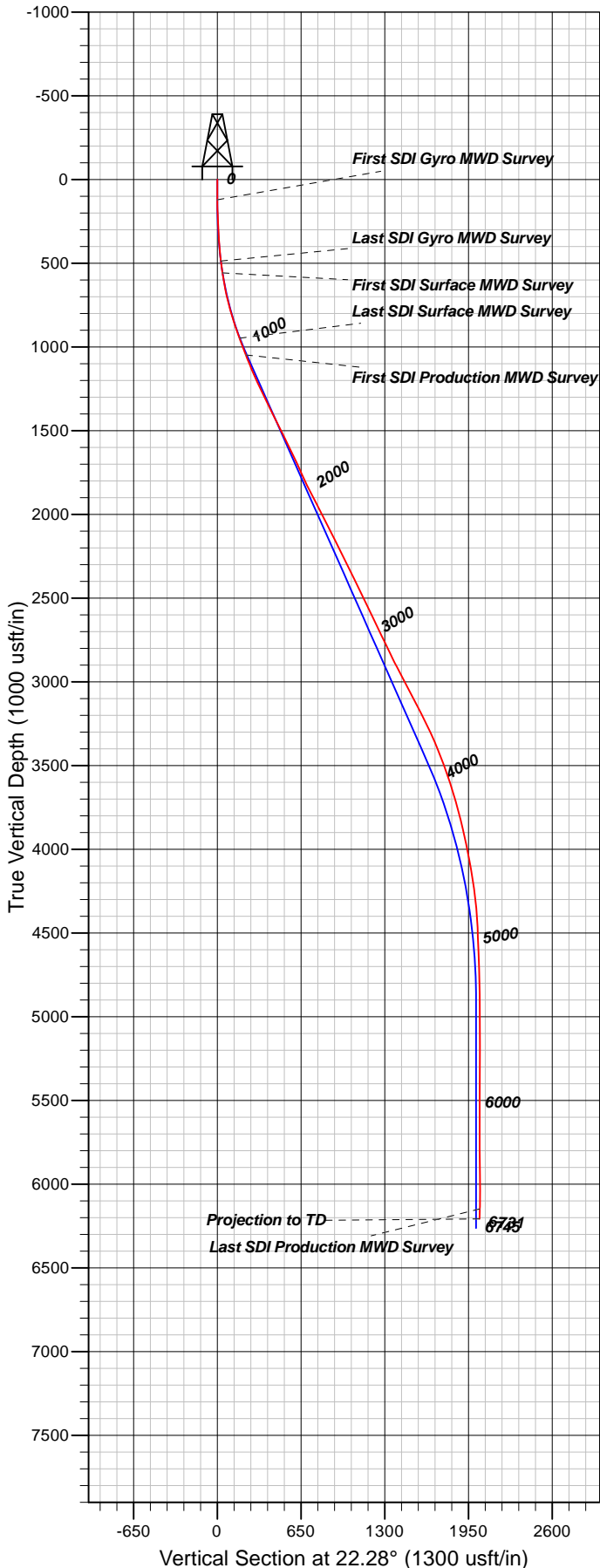
OH

Design: OH

Standard Survey Report

11 February, 2019





Well Details: SG 314-15

TVD Reference: GL 6092.4' & RKB 24' @ 6116.40usft						Grid Level: 6092.40	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot	
0.00	0.00	1591247.00	2264561.40	39.4278012	-108.1039195	SG 314-15 (A2)	

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well SG 314-15 - Slot SG 314-15 (A2), True North
 Vertical (TVD) Reference: GL 6092.4' & RKB 24' @ 6116.40usft
 Section (VS) Reference: Slot - SG 314-15 (A2)(0.00N, 0.00E)
 Measured Depth Reference: GL 6092.4' & RKB 24' @ 6116.40usft
 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

10:29, February 11 2019
 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	<u>TEP Rocky Mountain, LLC.</u>
Well Name & No.	<u>SG 314-15</u>
County & State	<u>Garfield County, CO</u>
SDI Job No.	<u>OP.016129</u>
Rig	<u>H&P 318</u>

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 6,731 feet is true and correct as determined from all available records.

Signature

11-Feb-19

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 SG 314-15 - Slot SG 314-15 (A2)
Project: Garfield County, CO NAD83	TVD Reference: GL 6092.4' & RKB 24' @ 6116.40usft
Site: SG 11-22 Pad	MD Reference: GL 6092.4' & RKB 24' @ 6116.40usft
Well: SG 314-15	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 SG 11-22 Pad					
Site Position:		Northing:	1,591,239.00 usft	Latitude:	39.4277783
From: Map		Easting:	2,264,548.70 usft	Longitude:	-108.1039637
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.64 °

Well SG 314-15 - Slot SG 314-15 (A2)						
Well Position	+N/-S	0.00 usft	Northing:	1,591,247.00 usft	Latitude:	39.4278012
	+E/-W	0.00 usft	Easting:	2,264,561.40 usft	Longitude:	-108.1039195
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,092.40 usft

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/26/2019	9.40	65.60	51,621

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	22.28	

Survey Program		Date 2/11/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
122.00	489.00	Survey #1 - Gyro MWD Survey (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5
561.00	974.00	Survey #2 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM
1,085.00	6,731.00	Survey #3 - Production MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM

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	
122.00	0.35	22.24	122.00	0.34	0.14	0.37	0.29	0.29	0.00	
First SDI Gyro MWD Survey										
213.00	3.26	18.37	212.94	3.06	1.06	3.23	3.20	3.20	-4.25	
306.00	3.78	359.65	305.77	8.63	1.88	8.70	1.35	0.56	-20.13	
398.00	5.89	7.91	397.44	16.34	2.51	16.07	2.41	2.29	8.98	
489.00	8.62	19.34	487.71	27.40	5.41	27.41	3.38	3.00	12.56	
Last SDI Gyro MWD Survey										



Scientific Drilling, Intl Survey Report

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well SG 314-15 - Slot SG 314-15 (A2)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Well:	SG 314-15	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)	
561.00	11.01	24.08	558.65	38.77	10.00	39.67	3.50	3.32	6.58	
First SDI Surface MWD Survey										
653.00	14.44	21.28	648.38	57.49	17.75	59.93	3.79	3.73	-3.04	
747.00	18.28	21.63	738.55	82.12	27.44	86.40	4.09	4.09	0.37	
842.00	21.82	22.94	827.78	112.24	39.82	118.96	3.76	3.73	1.38	
936.00	24.80	23.29	914.10	146.45	54.43	156.15	3.17	3.17	0.37	
974.00	25.50	23.46	948.50	161.27	60.84	172.29	1.85	1.84	0.45	
Last SDI Surface MWD Survey										
1,085.00	26.60	21.77	1,048.22	206.27	79.57	221.03	1.20	0.99	-1.52	
First SDI Production MWD Survey										
1,179.00	28.93	23.34	1,131.39	246.69	96.38	264.82	2.60	2.48	1.67	
1,273.00	30.91	22.41	1,212.86	289.89	114.59	311.70	2.16	2.11	-0.99	
1,368.00	31.94	25.06	1,293.93	335.22	134.54	361.20	1.81	1.08	2.79	
1,463.00	32.77	25.12	1,374.18	381.26	156.10	411.98	0.87	0.87	0.06	
1,557.00	33.07	24.51	1,453.09	427.63	177.54	463.02	0.48	0.32	-0.65	
1,651.00	33.82	24.41	1,531.52	474.79	198.99	514.78	0.80	0.80	-0.11	
1,746.00	31.50	24.03	1,611.50	521.54	220.02	566.02	2.45	-2.44	-0.40	
1,840.00	30.70	25.03	1,691.99	565.71	240.18	614.53	1.01	-0.85	1.06	
1,934.00	31.32	24.43	1,772.55	609.69	260.43	662.92	0.74	0.66	-0.64	
2,029.00	33.41	24.00	1,852.79	656.07	281.29	713.74	2.21	2.20	-0.45	
2,124.00	33.71	23.26	1,931.95	704.19	302.34	766.24	0.53	0.32	-0.78	
2,218.00	32.77	21.28	2,010.57	751.86	321.87	817.76	1.53	-1.00	-2.11	
2,313.00	33.69	22.98	2,090.04	800.08	341.49	869.81	1.38	0.97	1.79	
2,407.00	34.40	23.70	2,167.93	848.39	362.34	922.43	0.87	0.76	0.77	
2,502.00	32.65	23.70	2,247.12	896.43	383.43	974.88	1.84	-1.84	0.00	
2,595.00	32.16	24.27	2,325.64	941.97	403.69	1,024.70	0.62	-0.53	0.61	
2,690.00	31.50	24.43	2,406.35	987.62	424.34	1,074.77	0.70	-0.69	0.17	
2,784.00	32.44	24.24	2,486.10	1,032.96	444.85	1,124.50	1.01	1.00	-0.20	
2,878.00	33.04	25.67	2,565.16	1,079.05	466.30	1,175.28	1.04	0.64	1.52	
2,973.00	31.83	26.02	2,645.34	1,124.91	488.51	1,226.14	1.29	-1.27	0.37	
3,067.00	32.27	22.05	2,725.02	1,170.45	508.81	1,275.97	2.29	0.47	-4.22	
3,161.00	31.22	19.90	2,804.96	1,216.61	526.52	1,325.41	1.64	-1.12	-2.29	
3,256.00	33.27	19.20	2,885.31	1,264.38	543.48	1,376.03	2.19	2.16	-0.74	
3,350.00	34.88	21.47	2,963.17	1,313.74	561.79	1,428.66	2.18	1.71	2.41	
3,445.00	34.29	20.92	3,041.38	1,364.02	581.29	1,482.57	0.70	-0.62	-0.58	
3,539.00	34.53	22.99	3,118.93	1,413.28	601.15	1,535.69	1.27	0.26	2.20	
3,633.00	32.84	22.06	3,197.15	1,461.43	621.13	1,587.82	1.88	-1.80	-0.99	
3,728.00	31.83	27.33	3,277.43	1,507.57	642.31	1,638.54	3.15	-1.06	5.55	
3,822.00	28.99	29.98	3,358.50	1,549.33	665.08	1,685.82	3.34	-3.02	2.82	
3,916.00	27.75	29.95	3,441.21	1,588.03	687.39	1,730.08	1.32	-1.32	-0.03	
4,011.00	24.72	28.74	3,526.41	1,624.62	707.99	1,771.75	3.24	-3.19	-1.27	
4,105.00	22.68	25.94	3,612.48	1,658.15	725.37	1,809.37	2.48	-2.17	-2.98	
4,200.00	21.33	25.84	3,700.56	1,690.17	740.91	1,844.89	1.42	-1.42	-0.11	
4,294.00	18.79	27.18	3,788.85	1,719.03	755.28	1,877.04	2.75	-2.70	1.43	

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well SG 314-15 - Slot SG 314-15 (A2)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Well:	SG 314-15	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)	
4,389.00	16.95	25.92	3,879.26	1,745.10	768.32	1,906.11	1.98	-1.94	-1.33	
4,483.00	14.95	25.92	3,969.64	1,768.33	779.61	1,931.89	2.13	-2.13	0.00	
4,578.00	13.80	26.28	4,061.66	1,789.51	789.99	1,955.42	1.21	-1.21	0.38	
4,672.00	12.09	25.52	4,153.27	1,808.45	799.19	1,976.43	1.83	-1.82	-0.81	
4,767.00	9.90	23.24	4,246.52	1,824.93	806.70	1,994.53	2.35	-2.31	-2.40	
4,861.00	7.32	27.82	4,339.45	1,837.66	812.69	2,008.58	2.84	-2.74	4.87	
4,924.89	5.03	25.25	4,402.97	1,843.79	815.78	2,015.43	3.61	-3.58	-4.02	
SG 314-15 BTV										
4,926.85	4.96	25.14	4,404.93	1,843.95	815.86	2,015.60	3.61	-3.57	-5.92	
SG 314-15 25' Driller's BTV Target										
4,955.00	3.96	23.02	4,432.99	1,845.94	816.75	2,017.79	3.61	-3.56	-7.52	
5,050.00	3.08	18.72	4,527.81	1,851.38	818.85	2,023.61	0.97	-0.93	-4.53	
5,144.00	2.90	24.87	4,621.68	1,855.93	820.66	2,028.51	0.39	-0.19	6.54	
5,239.00	2.33	26.47	4,716.58	1,859.84	822.54	2,032.84	0.60	-0.60	1.68	
5,333.00	1.30	25.89	4,810.53	1,862.51	823.85	2,035.81	1.10	-1.10	-0.62	
5,428.00	1.17	23.57	4,905.51	1,864.36	824.71	2,037.85	0.15	-0.14	-2.44	
5,522.00	0.22	22.11	4,999.50	1,865.41	825.16	2,038.99	1.01	-1.01	-1.55	
5,616.00	0.29	1.75	5,093.50	1,865.82	825.24	2,039.39	0.12	0.07	-21.66	
5,711.00	0.73	200.26	5,188.50	1,865.49	825.04	2,039.01	1.06	0.46	-169.99	
5,805.00	0.63	223.52	5,282.49	1,864.55	824.47	2,037.93	0.31	-0.11	24.74	
5,899.00	1.18	204.41	5,376.48	1,863.30	823.72	2,036.49	0.66	0.59	-20.33	
5,994.00	0.95	297.32	5,471.47	1,862.77	822.61	2,035.58	1.63	-0.24	97.80	
6,089.00	1.38	330.22	5,566.45	1,864.12	821.35	2,036.35	0.82	0.45	34.63	
6,183.00	1.54	307.65	5,660.42	1,865.88	819.78	2,037.38	0.63	0.17	-24.01	
6,278.00	1.54	308.49	5,755.39	1,867.45	817.77	2,038.07	0.02	0.00	0.88	
6,372.00	1.16	319.74	5,849.36	1,868.96	816.17	2,038.87	0.49	-0.40	11.97	
6,467.00	0.89	295.40	5,944.35	1,870.01	814.88	2,039.35	0.53	-0.28	-25.62	
6,561.00	1.41	294.87	6,038.33	1,870.81	813.17	2,039.44	0.55	0.55	-0.56	
6,656.00	2.55	263.29	6,133.27	1,871.06	810.01	2,038.47	1.62	1.20	-33.24	
6,671.00	2.99	256.37	6,148.25	1,870.93	809.30	2,038.08	3.68	2.93	-46.13	
Last SDI Production MWD Survey										
6,731.00	2.99	256.37	6,208.17	1,870.19	806.26	2,036.24	0.00	0.00	0.00	
Projection to TD - SG 314-15 25' Driller's PBHL - SG 314-15 PBHL										



Scientific Drilling, Intl
Survey Report

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well SG 314-15 - Slot SG 314-15 (A2)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Site:	SG 11-22 Pad	MD Reference:	GL 6092.4' & RKB 24' @ 6116.40usft
Well:	SG 314-15	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
122.00	122.00	0.34	0.14	First SDI Gyro MWD Survey
489.00	487.71	27.40	5.41	Last SDI Gyro MWD Survey
561.00	558.65	38.77	10.00	First SDI Surface MWD Survey
974.00	948.50	161.27	60.84	Last SDI Surface MWD Survey
1,085.00	1,048.22	206.27	79.57	First SDI Production MWD Survey
6,671.00	6,148.25	1,870.93	809.30	Last SDI Production MWD Survey
6,731.00	6,208.17	1,870.19	806.26	Projection to TD

Checked By: _____ Approved By: _____ Date: _____