



**Scientific  
Drilling**

## Survey Certification

7327 West Barton Road  
Casper, WY 82604  
(307)-472-6621 Fax (307) 472-5439

<b>Operator</b>	TEP Rocky Mountain LLC
<b>Well Name &amp; No.</b>	SG 322-22
<b>API #</b>	05-045-24012
<b>County &amp; State</b>	Garfield County, CO
<b>SDI Job #</b>	OP.024503
<b>Rig</b>	H&P 318
<b>Survey Date</b>	26-Mar-2020

I, Seth M. Burstad, having personal knowledge of all the facts, hereby  
certify that the attached directional survey run from a measured depth of 0 feet to a  
measured depth of 6198 feet is true and correct as determined from all available records.

*Seth M. Burstad*

Signature

27-Mar-2020

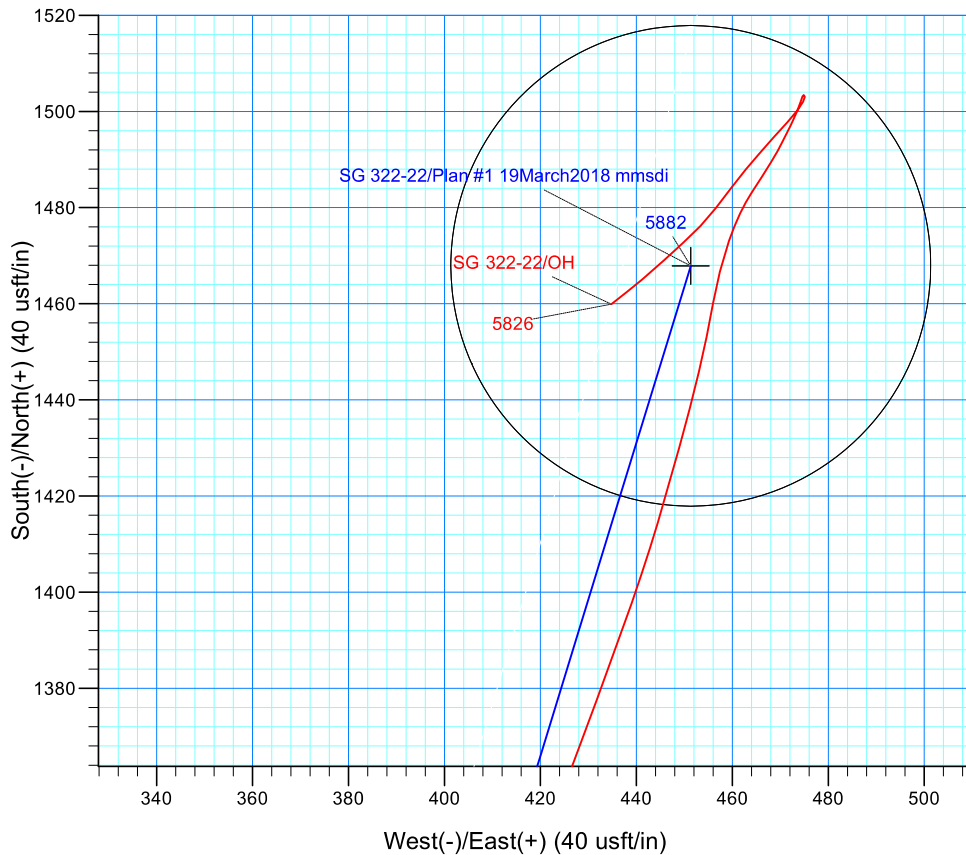
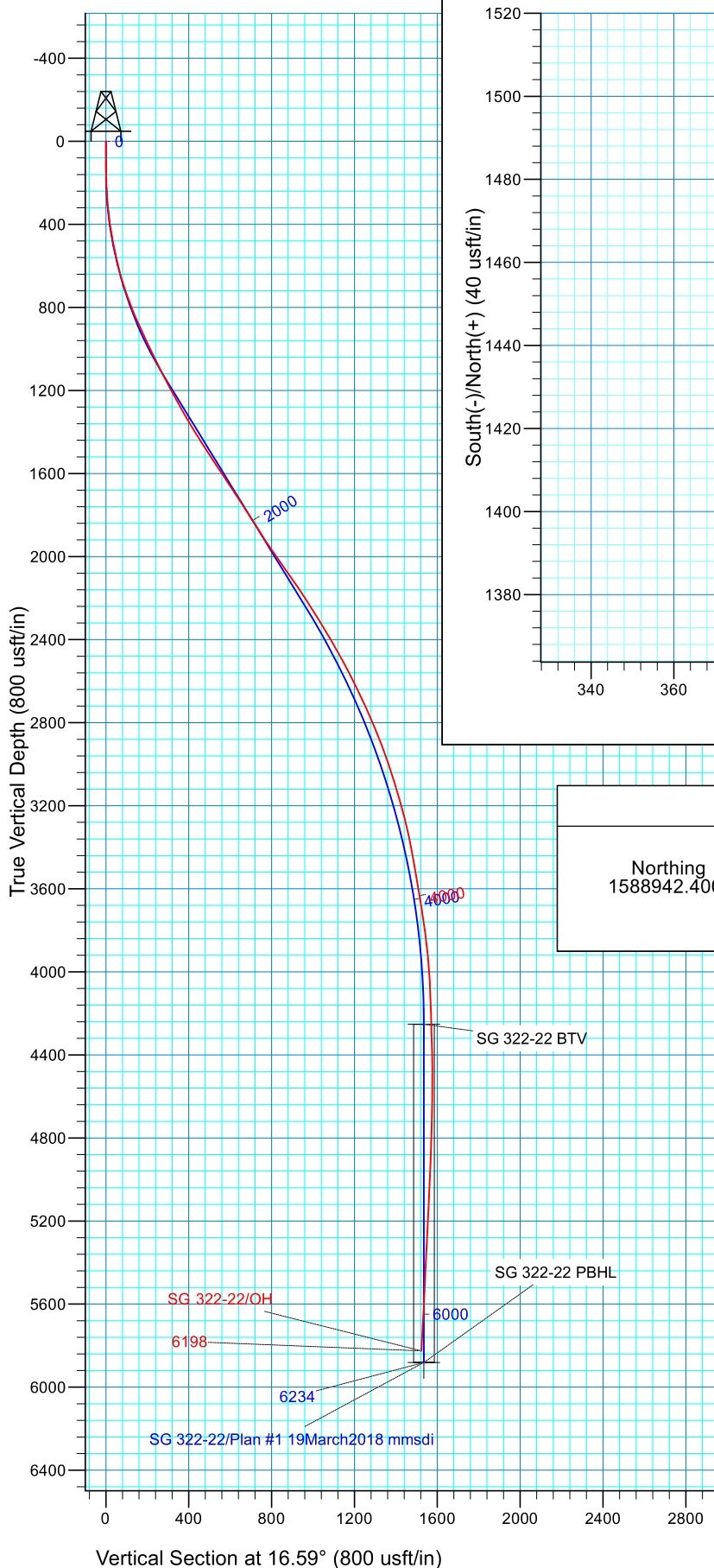
Date

### **Seth M. Burstad**

Rockies Region Well Planner  
Scientific Drilling - Rocky Mountain District



Project: Garfield County, CO NAD83  
Site: SG 23-22 Pad  
Well: SG 322-22  
Wellbore: OH  
Design: OH



#### WELL DETAILS: SG 322-22

GL 5665' & RKB 24' @ 5689.00usft5665.00  
Northing Easting Latitude Longitude  
1588942.4000 2265672.3000 39.4215638 -108.0997549

#### PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well SG 322-22 - Slot SG 322-22 (B3), True North  
Vertical (TVD) Reference: GL 5665' & RKB 24' @ 5689.00usft  
Section (VS) Reference: Slot - SG 322-22 (B3)(0.00N, 0.00E)  
Measured Depth Reference: GL 5665' & RKB 24' @ 5689.00usft  
Calculation Method: Minimum Curvature  
Local North: True  
Location:

# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**SG 23-22 Pad**

**SG 322-22 - Slot SG 322-22 (B3)**

**OH**

**Design: OH**

## **Standard Survey Report**

**27 March, 2020**



# Scientific Drilling, Intl

## Survey Report

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well SG 322-22 - Slot SG 322-22 (B3)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Well:</b>	SG 322-22	<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

<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 23-22 Pad			
Site Position:		Northing:	1,588,957.4000 usft	Latitude:	39.4216042
From:	Map	Easting:	2,265,662.2000 usft	Longitude:	-108.0997922
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.64 °

Well	SG 322-22 - Slot SG 322-22 (B3)					
Well Position	+N/-S	0.00 usft	Northing:	1,588,942.4000 usft	Latitude:	39.4215639
	+E/-W	0.00 usft	Easting:	2,265,672.3000 usft	Longitude:	-108.0997550
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,665.00 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	3/19/2018	9.47	65.62	51,729.10000000

<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	16.59	

<b>Survey Program</b>	<b>Date</b>	3/25/2020			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
122.00	950.00	Survey #1 - SDI Surface Gyro Survey (OH)	Gyro MWD 105	Gyro MWD Error Model Ver 1.0.5	
1,075.00	6,198.00	Survey #2 - 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	0.53	65.13	122.00	0.24	0.51	0.37	0.43	0.43	0.00	
<b>First SDI Gyro Surface Survey</b>										
213.00	2.55	19.60	212.96	2.32	1.57	2.67	2.43	2.22	-50.03	
304.00	4.84	15.56	303.77	7.93	3.28	8.53	2.53	2.52	-4.44	
395.00	8.18	13.01	394.17	17.94	5.77	18.84	3.68	3.67	-2.80	
486.00	10.65	14.50	483.94	32.39	9.33	33.70	2.73	2.71	1.64	
576.00	13.11	12.66	572.00	50.40	13.65	52.20	2.77	2.73	-2.04	
667.00	16.01	16.88	660.07	72.48	19.56	75.05	3.39	3.19	4.64	
761.00	20.06	18.98	749.44	100.14	28.57	104.13	4.36	4.31	2.23	

# Scientific Drilling, Intl

## Survey Report

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well SG 322-22 - Slot SG 322-22 (B3)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Well:</b>	SG 322-22	<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

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)
856.00	23.14	15.12	837.76	133.58	38.74	139.08	3.57	3.24	-4.06
950.00	25.43	12.48	923.44	171.12	47.92	177.68	2.70	2.44	-2.81
<b>Last SDI Gyro Surface Survey</b>									
1,075.00	25.76	12.66	1,036.17	223.83	59.68	231.55	0.27	0.26	0.14
<b>First SDI MWD Production Survey</b>									
1,170.00	27.41	14.56	1,121.13	265.14	69.70	274.00	1.95	1.74	2.00
1,264.00	28.20	15.98	1,204.27	307.43	81.25	317.84	1.10	0.84	1.51
1,359.00	29.15	15.79	1,287.62	351.28	93.73	363.42	1.00	1.00	-0.20
1,453.00	31.68	15.18	1,368.68	397.14	106.42	410.99	2.71	2.69	-0.65
1,548.00	32.67	16.29	1,449.09	445.83	120.15	461.57	1.21	1.04	1.17
1,642.00	33.01	15.32	1,528.07	494.87	134.03	512.54	0.67	0.36	-1.03
1,736.00	33.73	17.34	1,606.57	544.48	148.57	564.24	1.41	0.77	2.15
1,831.00	33.85	16.80	1,685.52	594.99	164.08	617.07	0.34	0.13	-0.57
1,925.00	32.78	15.44	1,764.08	644.58	178.42	668.69	1.39	-1.14	-1.45
2,019.00	32.34	17.98	1,843.31	693.03	192.96	719.27	1.53	-0.47	2.70
2,114.00	32.76	19.33	1,923.38	741.45	209.31	770.35	0.88	0.44	1.42
2,208.00	35.98	19.59	2,000.96	791.48	226.99	823.34	3.43	3.43	0.28
2,302.00	35.15	18.73	2,077.43	843.12	244.94	877.96	1.03	-0.88	-0.91
2,396.00	34.08	18.69	2,154.79	893.69	262.07	931.32	1.14	-1.14	-0.04
2,490.00	32.94	19.09	2,233.16	942.79	278.87	983.17	1.24	-1.21	0.43
2,585.00	31.69	18.34	2,313.45	990.89	295.17	1,033.92	1.38	-1.32	-0.79
2,680.00	30.04	18.82	2,394.99	1,037.09	310.69	1,082.62	1.76	-1.74	0.51
2,774.00	29.62	17.49	2,476.54	1,081.51	325.26	1,129.36	0.83	-0.45	-1.41
2,869.00	27.17	19.50	2,560.10	1,124.36	339.56	1,174.51	2.77	-2.58	2.12
2,963.00	25.76	18.97	2,644.25	1,163.91	353.37	1,216.35	1.52	-1.50	-0.56
3,057.00	24.44	18.84	2,729.37	1,201.63	366.29	1,256.19	1.41	-1.40	-0.14
3,152.00	23.41	19.28	2,816.21	1,238.04	378.86	1,294.68	1.10	-1.08	0.46
3,246.00	20.75	21.52	2,903.31	1,271.17	391.14	1,329.93	2.97	-2.83	2.38
3,340.00	19.08	21.30	2,991.68	1,300.98	402.83	1,361.83	1.78	-1.78	-0.23
3,435.00	17.61	20.97	3,081.85	1,328.86	413.61	1,391.64	1.55	-1.55	-0.35
3,530.00	15.96	20.20	3,172.80	1,354.54	423.27	1,419.00	1.75	-1.74	-0.81
3,624.00	14.26	20.18	3,263.55	1,377.54	431.73	1,443.46	1.81	-1.81	-0.02
3,718.00	11.90	19.54	3,355.10	1,397.54	438.96	1,464.69	2.52	-2.51	-0.68
3,813.00	9.72	16.31	3,448.41	1,414.47	444.49	1,482.50	2.38	-2.29	-3.40
3,907.00	10.35	15.59	3,540.97	1,430.22	448.99	1,498.88	0.68	0.67	-0.77
4,002.00	9.28	13.37	3,634.58	1,445.89	453.05	1,515.06	1.19	-1.13	-2.34
4,096.00	8.42	9.84	3,727.46	1,460.05	455.98	1,529.46	1.08	-0.91	-3.76
4,190.00	8.12	19.30	3,820.49	1,473.09	459.35	1,542.93	1.48	-0.32	10.06
4,285.00	5.32	33.56	3,914.84	1,483.10	464.01	1,553.84	3.41	-2.95	15.01
4,379.00	3.83	31.28	4,008.53	1,489.41	468.04	1,561.05	1.60	-1.59	-2.43
4,473.00	2.45	26.69	4,102.39	1,493.89	470.58	1,566.06	1.49	-1.47	-4.88
4,568.00	2.03	25.81	4,197.32	1,497.22	472.22	1,569.72	0.44	-0.44	-0.93
4,662.00	1.72	23.49	4,291.27	1,500.01	473.51	1,572.77	0.34	-0.33	-2.47

# Scientific Drilling, Intl

## Survey Report

<b>Company:</b>	TEP Rocky Mountain LLC	<b>Local Co-ordinate Reference:</b>	Well SG 322-22 - Slot SG 322-22 (B3)
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Site:</b>	SG 23-22 Pad	<b>MD Reference:</b>	GL 5665' & RKB 24' @ 5689.00usft
<b>Well:</b>	SG 322-22	<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

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)	
4,757.00	1.30	15.33	4,386.23	1,502.36	474.36	1,575.26	0.50	-0.44	-8.59	
4,851.00	0.30	85.70	4,480.22	1,503.41	474.89	1,576.41	1.31	-1.06	74.86	
4,945.00	0.44	176.82	4,574.22	1,503.06	475.16	1,576.16	0.57	0.15	96.94	
5,040.00	0.95	210.38	4,669.22	1,502.02	474.78	1,575.05	0.67	0.54	35.33	
5,134.00	1.57	216.56	4,763.19	1,500.31	473.62	1,573.09	0.67	0.66	6.57	
5,229.00	2.42	222.64	4,858.13	1,497.79	471.48	1,570.06	0.92	0.89	6.40	
5,323.00	2.59	221.43	4,952.04	1,494.74	468.73	1,566.35	0.19	0.18	-1.29	
5,418.00	2.77	221.57	5,046.94	1,491.41	465.79	1,562.32	0.19	0.19	0.15	
5,512.00	2.83	219.44	5,140.83	1,487.92	462.81	1,558.12	0.13	0.06	-2.27	
5,606.00	3.22	217.60	5,234.70	1,484.04	459.72	1,553.52	0.43	0.41	-1.96	
5,701.00	3.02	217.34	5,329.56	1,479.94	456.58	1,548.69	0.21	-0.21	-0.27	
5,795.00	2.94	224.10	5,423.43	1,476.24	453.40	1,544.24	0.38	-0.09	7.19	
5,890.00	3.08	227.42	5,518.30	1,472.76	449.82	1,539.89	0.24	0.15	3.49	
5,983.00	3.52	226.96	5,611.14	1,469.12	445.90	1,535.28	0.47	0.47	-0.49	
6,078.00	4.03	230.40	5,705.94	1,465.00	441.19	1,529.99	0.59	0.54	3.62	
6,138.00	3.85	231.85	5,765.80	1,462.41	437.98	1,526.59	0.34	-0.30	2.42	
Last SDI MWD Production Survey										
6,198.00	3.85	231.85	5,825.66	1,459.93	434.82	1,523.30	0.00	0.00	0.00	
Projection to TD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
122.00	122.00	0.24	0.51	First SDI Gyro Surface Survey	
950.00	923.44	171.12	47.92	Last SDI Gyro Surface Survey	
1,075.00	1,036.17	223.83	59.68	First SDI MWD Production Survey	
6,138.00	5,765.80	1,462.41	437.98	Last SDI MWD Production Survey	
6,198.00	5,825.66	1,459.93	434.82	Projection to TD	

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