



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

Survey Certification

Operator	TEP Rocky Mountain LLC
Well Name & No.	SG 521-22
API #	05-045-24005
County & State	Garfield County, CO
SDI Job #	OP.024248
Rig	H&P 516
Survey Date	12-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 6381 feet is true and correct as determined from all available records.

Seth M. Burstad

Signature

13-Mar-2020

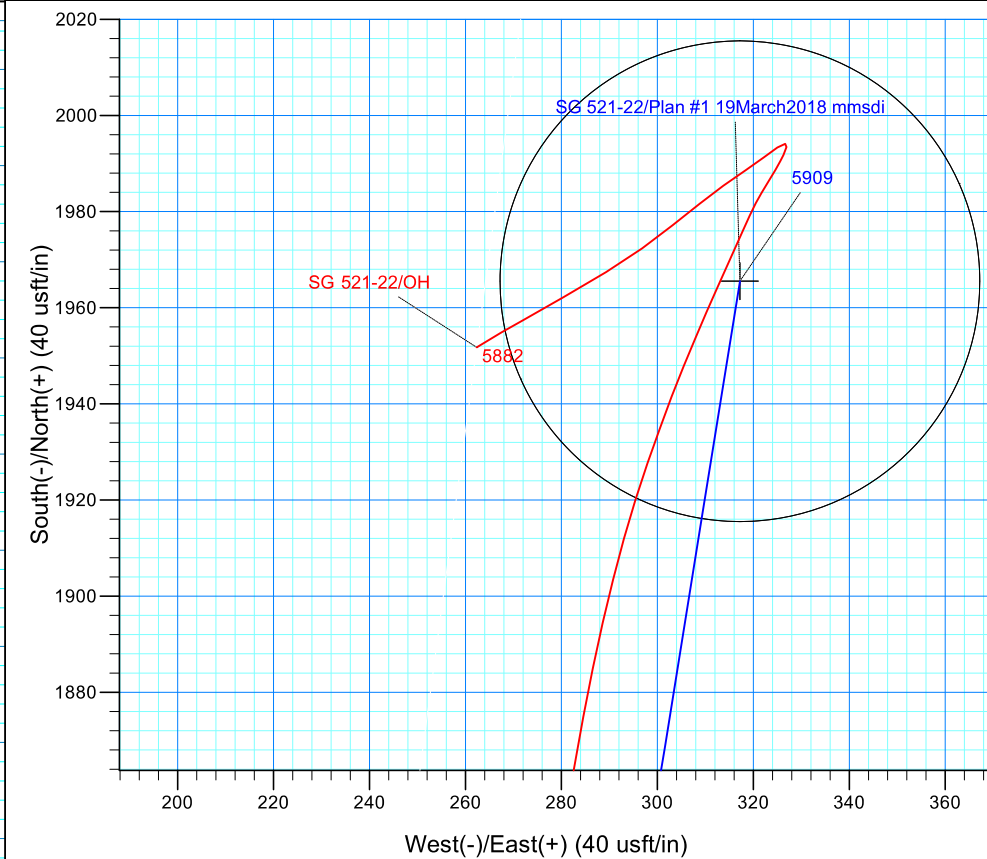
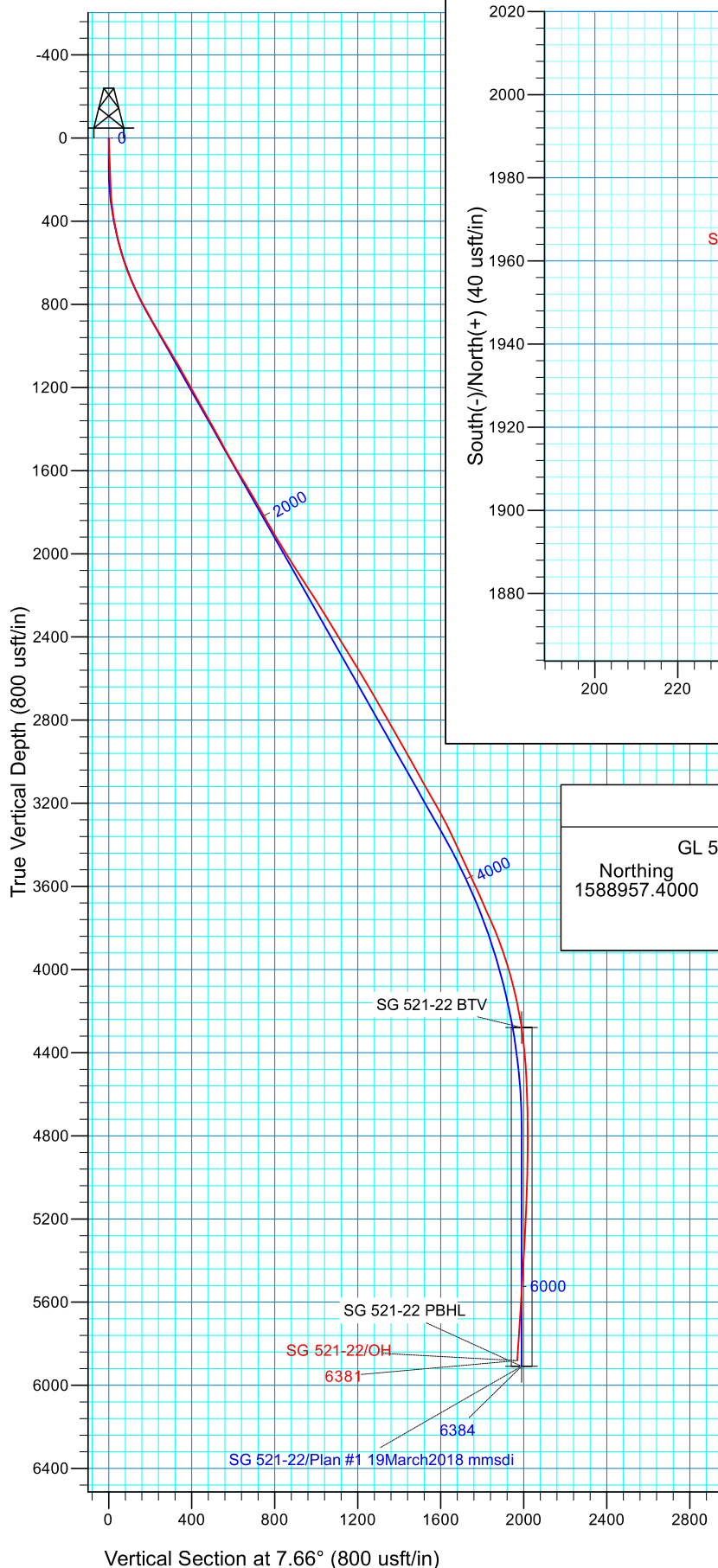
Date

Seth M. Burstad

Rockies Region Well Planner
Scientific Drilling - Rocky Mountain District



Project: Garfield County, CO NAD83
 Site: SG 23-22 Pad
 Well: SG 521-22
 Wellbore: OH
 Design: OH



WELL DETAILS: SG 521-22

GL 5665' & RKB 24' @ 5689.00usft (H&P 318)		5665.00	
Northings	Easting	Latitude	Longitude
1588957.4000	2265672.2000	39.4216050	-108.0997568

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 521-22 - Slot SG 521-22 (B1), True North
 Vertical (TVD) Reference: GL 5665' & RKB 24' @ 5689.00usft (H&P 318)
 Section (VS) Reference: Slot - SG 521-22 (B1)(0.00N, 0.00E)
 Measured Depth Reference: GL 5665' & RKB 24' @ 5689.00usft (H&P 318)
 Calculation Method: Minimum Curvature
 Local North: True
 Location:

TEP Rocky Mountain LLC

Garfield County, CO NAD83

SG 23-22 Pad

SG 521-22 - Slot SG 521-22 (B1)

OH

Design: OH

Standard Survey Report

13 March, 2020



Scientific Drilling, Intl

Survey Report

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well SG 521-22 - Slot SG 521-22 (B1)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 5665' & RKB 24' @ 5689.00usft (H&P 318)
Site:	SG 23-22 Pad	MD Reference:	GL 5665' & RKB 24' @ 5689.00usft (H&P 318)
Well:	SG 521-22	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction

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 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 521-22 - Slot SG 521-22 (B1)					
Well Position	+N/-S	0.00 usft	Northing:	1,588,957.4000 usft	Latitude:	39.4216050
	+E/-W	0.00 usft	Easting:	2,265,672.2000 usft	Longitude:	-108.0997568
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,665.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	3/6/2020	9.27	65.55	51,521.40000000

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	7.66	

Survey Program	Date	3/13/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
284.00	931.00	Survey #1 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM	
931.00	6,381.00	Survey #2 - 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	
284.00	4.90	351.03	283.65	11.99	-1.89	11.63	1.73	1.73	0.00	
First SDI MWD Surface Survey										
375.00	8.44	358.47	374.03	22.51	-2.68	21.95	4.00	3.89	8.18	
466.00	12.70	358.54	463.46	39.19	-3.11	38.43	4.68	4.68	0.08	
556.00	16.21	357.77	550.60	61.64	-3.85	60.58	3.91	3.90	-0.86	
648.00	20.64	1.37	637.86	90.70	-3.96	89.36	4.97	4.82	3.91	
742.00	25.90	6.23	724.19	127.70	-1.34	126.38	5.95	5.60	5.17	
837.00	28.68	7.35	808.61	170.94	3.83	169.93	2.98	2.93	1.18	
931.00	30.01	10.12	890.55	216.46	10.85	215.97	2.02	1.41	2.95	

Scientific Drilling, Intl

Survey Report

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well SG 521-22 - Slot SG 521-22 (B1)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 5665' & RKB 24' @ 5689.00usft (H&P 318)
Site:	SG 23-22 Pad	MD Reference:	GL 5665' & RKB 24' @ 5689.00usft (H&P 318)
Well:	SG 521-22	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
Last SDI MWD Surface Survey									
986.00	30.44	10.64	938.08	243.69	15.84	243.63	0.92	0.78	0.95
First SDI MWD Production Survey									
1,080.00	31.25	10.28	1,018.78	291.08	24.59	291.76	0.88	0.86	-0.38
1,174.00	30.12	11.53	1,099.62	338.19	33.65	339.65	1.38	-1.20	1.33
1,269.00	28.40	12.14	1,182.49	383.63	43.17	385.96	1.84	-1.81	0.64
1,363.00	29.26	8.12	1,264.85	428.23	51.11	431.23	2.26	0.91	-4.28
1,458.00	30.43	7.60	1,347.25	475.07	57.58	478.50	1.26	1.23	-0.55
1,552.00	28.05	6.63	1,429.27	520.62	63.28	524.41	2.58	-2.53	-1.03
1,646.00	29.02	7.51	1,511.85	565.18	68.81	569.31	1.12	1.03	0.94
1,740.00	30.26	8.68	1,593.55	611.20	75.36	615.79	1.46	1.32	1.24
1,835.00	32.14	11.06	1,674.81	659.67	83.82	664.96	2.37	1.98	2.51
1,929.00	29.46	10.50	1,755.54	706.95	92.84	713.01	2.87	-2.85	-0.60
2,024.00	29.76	12.24	1,838.14	752.96	102.09	759.85	0.96	0.32	1.83
2,117.00	30.19	9.94	1,918.70	798.55	111.02	806.22	1.32	0.46	-2.47
2,212.00	32.24	10.03	1,999.94	847.03	119.56	855.41	2.16	2.16	0.09
2,306.00	32.60	9.76	2,079.29	896.68	128.22	905.77	0.41	0.38	-0.29
2,401.00	33.07	9.10	2,159.11	947.49	136.66	957.25	0.62	0.49	-0.69
2,495.00	32.35	8.10	2,238.21	997.72	144.26	1,008.04	0.96	-0.77	-1.06
2,590.00	31.62	7.74	2,318.78	1,047.56	151.19	1,058.36	0.79	-0.77	-0.38
2,684.00	30.83	7.31	2,399.17	1,095.87	157.57	1,107.09	0.87	-0.84	-0.46
2,779.00	31.66	9.09	2,480.39	1,144.63	164.61	1,156.36	1.31	0.87	1.87
2,873.00	31.28	8.54	2,560.56	1,193.13	172.13	1,205.42	0.51	-0.40	-0.59
2,967.00	30.43	8.71	2,641.26	1,240.79	179.36	1,253.62	0.91	-0.90	0.18
3,062.00	29.86	7.79	2,723.41	1,288.00	186.21	1,301.33	0.77	-0.60	-0.97
3,156.00	30.69	9.09	2,804.59	1,334.87	193.17	1,348.71	1.13	0.88	1.38
3,251.00	28.80	9.79	2,887.07	1,381.37	200.89	1,395.82	2.02	-1.99	0.74
3,345.00	29.94	8.38	2,968.99	1,426.89	208.16	1,441.90	1.42	1.21	-1.50
3,440.00	28.54	8.67	3,051.88	1,472.78	215.04	1,488.30	1.48	-1.47	0.31
3,534.00	29.72	8.31	3,133.99	1,518.04	221.79	1,534.05	1.27	1.26	-0.38
3,629.00	29.75	9.72	3,216.48	1,564.57	229.17	1,581.16	0.74	0.03	1.48
3,723.00	27.93	10.17	3,298.82	1,609.23	237.00	1,626.46	1.95	-1.94	0.48
3,817.00	24.28	9.10	3,383.22	1,650.00	243.95	1,667.79	3.92	-3.88	-1.14
3,912.00	24.59	10.06	3,469.71	1,688.75	250.49	1,707.06	0.53	0.33	1.01
4,006.00	25.30	10.29	3,554.94	1,727.77	257.49	1,746.67	0.76	0.76	0.24
4,100.00	24.19	11.66	3,640.31	1,766.39	264.97	1,785.95	1.33	-1.18	1.46
4,195.00	23.76	10.91	3,727.11	1,804.25	272.53	1,824.47	0.55	-0.45	-0.79
4,289.00	23.00	8.67	3,813.39	1,841.00	278.88	1,861.74	1.24	-0.81	-2.38
4,384.00	19.45	10.58	3,901.94	1,874.90	284.59	1,896.10	3.81	-3.74	2.01
4,478.00	16.77	14.23	3,991.27	1,903.44	290.79	1,925.21	3.09	-2.85	3.88
4,572.00	14.42	19.04	4,081.81	1,927.65	297.95	1,950.16	2.85	-2.50	5.12
4,666.00	12.07	22.29	4,173.31	1,947.81	305.49	1,971.15	2.62	-2.50	3.46
4,761.00	9.37	24.37	4,266.64	1,964.05	312.45	1,988.17	2.87	-2.84	2.19

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Survey Report

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Site:	SG 23-22 Pad	MD Reference:	GL 5665' & RKB 24' @ 5689.00usft (H&P 318)
Well:	SG 521-22	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)	
4,855.00	6.69	23.72	4,359.71	1,976.03	317.81	2,000.76	2.85	-2.85	-0.69	
4,950.00	3.97	31.42	4,454.29	1,983.91	321.76	2,009.09	2.95	-2.86	8.11	
5,044.00	2.85	29.86	4,548.12	1,988.71	324.62	2,014.23	1.20	-1.19	-1.66	
5,139.00	1.38	25.32	4,643.06	1,991.80	326.28	2,017.51	1.56	-1.55	-4.78	
5,233.00	0.82	15.72	4,737.04	1,993.47	326.95	2,019.25	0.63	-0.60	-10.21	
5,328.00	0.55	268.13	4,832.03	1,994.11	326.68	2,019.85	1.18	-0.28	-113.25	
5,422.00	1.71	238.47	4,926.01	1,993.36	325.03	2,018.89	1.34	1.23	-31.55	
5,517.00	2.53	231.70	5,020.95	1,991.32	322.18	2,016.49	0.90	0.86	-7.13	
5,611.00	3.24	235.93	5,114.83	1,988.54	318.35	2,013.23	0.79	0.76	4.50	
5,705.00	3.56	235.16	5,208.66	1,985.39	313.75	2,009.49	0.34	0.34	-0.82	
5,799.00	3.95	230.58	5,302.46	1,981.66	308.85	2,005.15	0.52	0.41	-4.87	
5,893.00	4.89	232.71	5,396.18	1,977.18	303.17	1,999.95	1.01	1.00	2.27	
5,988.00	4.75	232.51	5,490.85	1,972.33	296.82	1,994.30	0.15	-0.15	-0.21	
6,082.00	6.25	240.10	5,584.41	1,967.41	289.30	1,988.42	1.77	1.60	8.07	
6,176.00	6.27	239.15	5,677.85	1,962.23	280.46	1,982.10	0.11	0.02	-1.01	
6,270.00	5.71	241.74	5,771.34	1,957.38	271.93	1,976.16	0.66	-0.60	2.76	
6,321.00	5.72	239.02	5,822.08	1,954.87	267.52	1,973.09	0.53	0.02	-5.33	
Last SDI MWD Production Survey										
6,381.00	5.72	239.02	5,881.79	1,951.80	262.39	1,969.36	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	
284.00	283.65	11.99	-1.89	First SDI MWD Surface Survey	
931.00	890.55	216.46	10.85	Last SDI MWD Surface Survey	
986.00	938.08	243.69	15.84	First SDI MWD Production Survey	
6,321.00	5,822.08	1,954.87	267.52	Last SDI MWD Production Survey	
6,381.00	5,881.79	1,951.80	262.39	Projection to TD	

Checked By: _____ Approved By: _____ Date: _____