



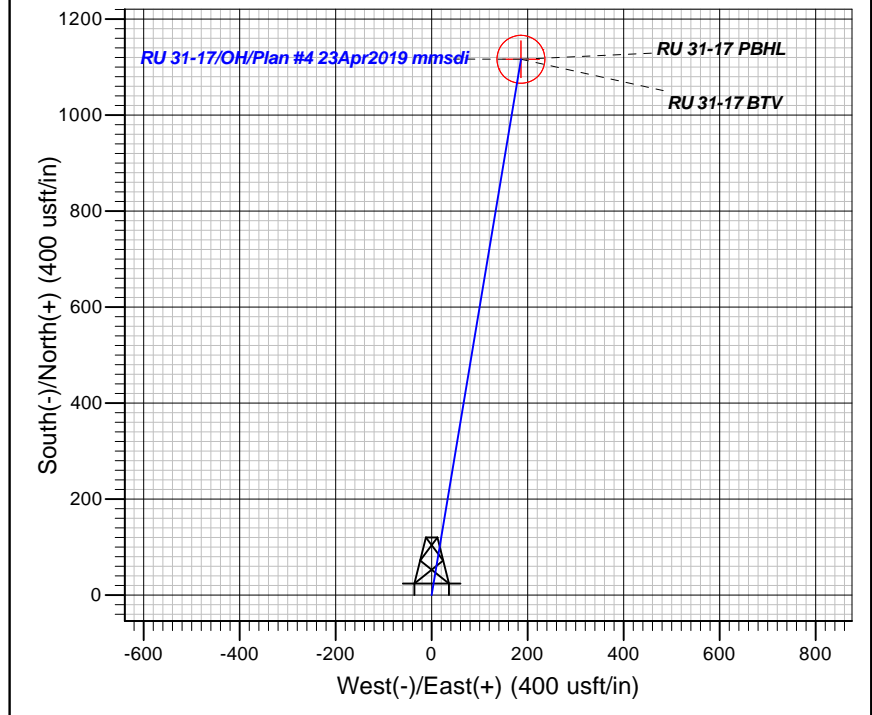
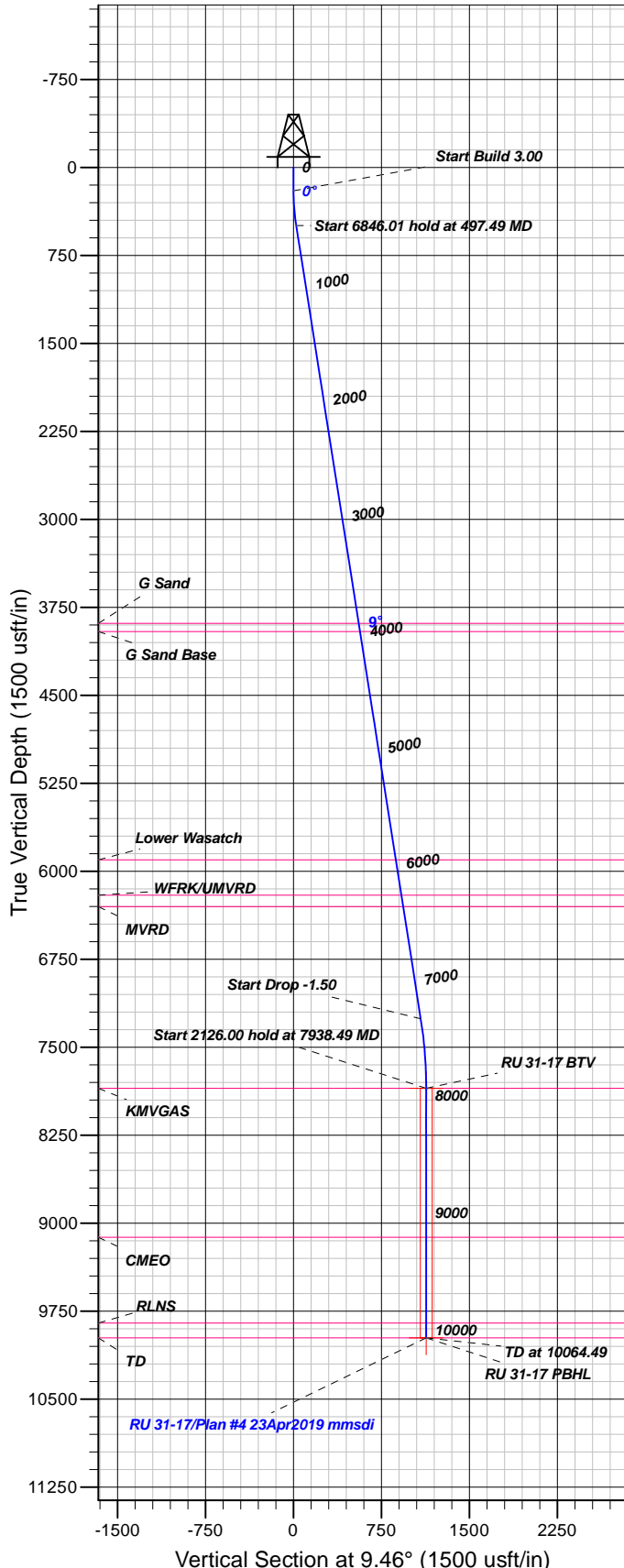
Azimuths to True North
Magnetic North: 9.30°

Magnetic Field
Strength: 51715.5nT
Dip Angle: 65.63°
Date: 2/9/2017
Model: HDGM

Well Details: RU 31-17

GL 7864' & RKB 24' @ 7888.00usft (H&P 318)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1596993.60	2351752.90	39.4500275	-107.7958606	RU 31-17



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3887.00	3929.76	G Sand
3957.00	4000.61	G Sand Base
5903.00	5970.46	Lower Wasatch
6205.00	6276.16	WFRK/UMVRD
6302.00	6374.35	MVRD
7852.00	7938.49	KMVGAS
9121.00	9207.49	CMEO
9853.00	9939.49	RLNS
9978.00	10064.49	TD

Plan: Plan #4 23Apr2019 mmsdi

17:30, April 29 2019
Created By: Mel Mireles

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

CASING DETAILS

TVD	MD	Name	Size
1091.50	1100.00	9 5/8" @ 1100' MD	9.62

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	497.49	8.92	9.46	496.29	22.81	3.80	3.00	9.46	23.12	
4	7343.51	8.92	9.46	7259.42	1070.44	178.36	0.00	0.001085.20		
5	7938.49	0.00	0.00	7852.00	1116.06	185.96	1.50	180.001131.44		RU 31-17 BTM
6	10064.49	0.00	0.00	9978.00	1116.06	185.96	0.00	0.001131.44		RU 31-17 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RU 31-17 BTM	7852.00	1116.06	185.961598104.60	2351967.00	39.4530916	-107.7952020		Circle (Radius: 50.00)
- plan hits target center								
RU 31-17 PBHL	9978.00	1116.06	185.961598104.60	2351967.00	39.4530916	-107.7952020		Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

RU 31-17 Pad

RU 31-17 - Slot RU 31-17

OH

Plan: Plan #4 23Apr2019 mmsdi

Standard Planning Report

29 April, 2019



www.scientificdrilling.com



Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 31-17 - Slot RU 31-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 31-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4 23Apr2019 mmsdi		

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	RU 31-17 Pad			
Site Position:		Northing:	1,596,940.40 usft	Latitude: 39.4498852
From: Map		Easting:	2,351,805.70 usft	Longitude: -107.7956689
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.45 °

Well	RU 31-17 - Slot RU 31-17			
Well Position	+N/-S	51.85 usft	Northing:	1,596,993.60 usft
	+E/-W	-54.13 usft	Easting:	2,351,752.90 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	7,864.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/9/2017	9.30	65.63	51,716

Design	Plan #4 23Apr2019 mmsdi			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	9.46

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
497.49	8.92	9.46	496.29	22.81	3.80	3.00	3.00	0.00	9.46	
7,343.51	8.92	9.46	7,259.42	1,070.44	178.36	0.00	0.00	0.00	0.00	
7,938.49	0.00	0.00	7,852.00	1,116.06	185.96	1.50	-1.50	0.00	180.00	RU 31-17 BTV
10,064.49	0.00	0.00	9,978.00	1,116.06	185.96	0.00	0.00	0.00	0.00	RU 31-17 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 31-17 - Slot RU 31-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 31-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4 23Apr2019 mmsdi		

Planned 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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
300.00	3.00	9.46	299.95	2.58	0.43	2.62	3.00	3.00	0.00
400.00	6.00	9.46	399.63	10.32	1.72	10.46	3.00	3.00	0.00
497.49	8.92	9.46	496.29	22.81	3.80	23.12	3.00	3.00	0.00
Start 6846.01 hold at 497.49 MD									
500.00	8.92	9.46	498.77	23.19	3.86	23.51	0.00	0.00	0.00
600.00	8.92	9.46	597.56	38.49	6.41	39.03	0.00	0.00	0.00
700.00	8.92	9.46	696.35	53.80	8.96	54.54	0.00	0.00	0.00
800.00	8.92	9.46	795.14	69.10	11.51	70.05	0.00	0.00	0.00
900.00	8.92	9.46	893.93	84.40	14.06	85.57	0.00	0.00	0.00
1,000.00	8.92	9.46	992.71	99.71	16.61	101.08	0.00	0.00	0.00
1,100.00	8.92	9.46	1,091.50	115.01	19.16	116.59	0.00	0.00	0.00
9 5/8" @ 1100' MD									
1,200.00	8.92	9.46	1,190.29	130.31	21.71	132.11	0.00	0.00	0.00
1,300.00	8.92	9.46	1,289.08	145.61	24.26	147.62	0.00	0.00	0.00
1,400.00	8.92	9.46	1,387.87	160.92	26.81	163.14	0.00	0.00	0.00
1,500.00	8.92	9.46	1,486.66	176.22	29.36	178.65	0.00	0.00	0.00
1,600.00	8.92	9.46	1,585.45	191.52	31.91	194.16	0.00	0.00	0.00
1,700.00	8.92	9.46	1,684.24	206.83	34.46	209.68	0.00	0.00	0.00
1,800.00	8.92	9.46	1,783.03	222.13	37.01	225.19	0.00	0.00	0.00
1,900.00	8.92	9.46	1,881.82	237.43	39.56	240.70	0.00	0.00	0.00
2,000.00	8.92	9.46	1,980.61	252.73	42.11	256.22	0.00	0.00	0.00
2,100.00	8.92	9.46	2,079.40	268.04	44.66	271.73	0.00	0.00	0.00
2,200.00	8.92	9.46	2,178.19	283.34	47.21	287.25	0.00	0.00	0.00
2,300.00	8.92	9.46	2,276.98	298.64	49.76	302.76	0.00	0.00	0.00
2,400.00	8.92	9.46	2,375.76	313.94	52.31	318.27	0.00	0.00	0.00
2,500.00	8.92	9.46	2,474.55	329.25	54.86	333.79	0.00	0.00	0.00
2,600.00	8.92	9.46	2,573.34	344.55	57.41	349.30	0.00	0.00	0.00
2,700.00	8.92	9.46	2,672.13	359.85	59.96	364.81	0.00	0.00	0.00
2,800.00	8.92	9.46	2,770.92	375.16	62.51	380.33	0.00	0.00	0.00
2,900.00	8.92	9.46	2,869.71	390.46	65.06	395.84	0.00	0.00	0.00
3,000.00	8.92	9.46	2,968.50	405.76	67.61	411.36	0.00	0.00	0.00
3,100.00	8.92	9.46	3,067.29	421.06	70.16	426.87	0.00	0.00	0.00
3,200.00	8.92	9.46	3,166.08	436.37	72.71	442.38	0.00	0.00	0.00
3,300.00	8.92	9.46	3,264.87	451.67	75.26	457.90	0.00	0.00	0.00
3,400.00	8.92	9.46	3,363.66	466.97	77.81	473.41	0.00	0.00	0.00
3,500.00	8.92	9.46	3,462.45	482.28	80.36	488.92	0.00	0.00	0.00
3,600.00	8.92	9.46	3,561.24	497.58	82.91	504.44	0.00	0.00	0.00
3,700.00	8.92	9.46	3,660.03	512.88	85.46	519.95	0.00	0.00	0.00
3,800.00	8.92	9.46	3,758.81	528.18	88.01	535.47	0.00	0.00	0.00
3,900.00	8.92	9.46	3,857.60	543.49	90.56	550.98	0.00	0.00	0.00
3,929.76	8.92	9.46	3,887.00	548.04	91.31	555.60	0.00	0.00	0.00
G Sand									
4,000.00	8.92	9.46	3,956.39	558.79	93.11	566.49	0.00	0.00	0.00
4,000.61	8.92	9.46	3,957.00	558.88	93.12	566.59	0.00	0.00	0.00
G Sand Base									
4,100.00	8.92	9.46	4,055.18	574.09	95.66	582.01	0.00	0.00	0.00
4,200.00	8.92	9.46	4,153.97	589.39	98.21	597.52	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 31-17 - Slot RU 31-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 31-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4 23Apr2019 mmsdi		

Planned 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)
4,300.00	8.92	9.46	4,252.76	604.70	100.75	613.03	0.00	0.00	0.00
4,400.00	8.92	9.46	4,351.55	620.00	103.30	628.55	0.00	0.00	0.00
4,500.00	8.92	9.46	4,450.34	635.30	105.85	644.06	0.00	0.00	0.00
4,600.00	8.92	9.46	4,549.13	650.61	108.40	659.58	0.00	0.00	0.00
4,700.00	8.92	9.46	4,647.92	665.91	110.95	675.09	0.00	0.00	0.00
4,800.00	8.92	9.46	4,746.71	681.21	113.50	690.60	0.00	0.00	0.00
4,900.00	8.92	9.46	4,845.50	696.51	116.05	706.12	0.00	0.00	0.00
5,000.00	8.92	9.46	4,944.29	711.82	118.60	721.63	0.00	0.00	0.00
5,100.00	8.92	9.46	5,043.08	727.12	121.15	737.14	0.00	0.00	0.00
5,200.00	8.92	9.46	5,141.86	742.42	123.70	752.66	0.00	0.00	0.00
5,300.00	8.92	9.46	5,240.65	757.73	126.25	768.17	0.00	0.00	0.00
5,400.00	8.92	9.46	5,339.44	773.03	128.80	783.69	0.00	0.00	0.00
5,500.00	8.92	9.46	5,438.23	788.33	131.35	799.20	0.00	0.00	0.00
5,600.00	8.92	9.46	5,537.02	803.63	133.90	814.71	0.00	0.00	0.00
5,700.00	8.92	9.46	5,635.81	818.94	136.45	830.23	0.00	0.00	0.00
5,800.00	8.92	9.46	5,734.60	834.24	139.00	845.74	0.00	0.00	0.00
5,900.00	8.92	9.46	5,833.39	849.54	141.55	861.25	0.00	0.00	0.00
5,970.46	8.92	9.46	5,903.00	860.32	143.35	872.19	0.00	0.00	0.00
Lower Wasatch									
6,000.00	8.92	9.46	5,932.18	864.84	144.10	876.77	0.00	0.00	0.00
6,100.00	8.92	9.46	6,030.97	880.15	146.65	892.28	0.00	0.00	0.00
6,200.00	8.92	9.46	6,129.76	895.45	149.20	907.80	0.00	0.00	0.00
6,276.16	8.92	9.46	6,205.00	907.11	151.14	919.61	0.00	0.00	0.00
WFRK/UMVRD									
6,300.00	8.92	9.46	6,228.55	910.75	151.75	923.31	0.00	0.00	0.00
6,374.35	8.92	9.46	6,302.00	922.13	153.65	934.84	0.00	0.00	0.00
MVRD									
6,400.00	8.92	9.46	6,327.34	926.06	154.30	938.82	0.00	0.00	0.00
6,500.00	8.92	9.46	6,426.13	941.36	156.85	954.34	0.00	0.00	0.00
6,600.00	8.92	9.46	6,524.91	956.66	159.40	969.85	0.00	0.00	0.00
6,700.00	8.92	9.46	6,623.70	971.96	161.95	985.36	0.00	0.00	0.00
6,800.00	8.92	9.46	6,722.49	987.27	164.50	1,000.88	0.00	0.00	0.00
6,900.00	8.92	9.46	6,821.28	1,002.57	167.05	1,016.39	0.00	0.00	0.00
7,000.00	8.92	9.46	6,920.07	1,017.87	169.60	1,031.91	0.00	0.00	0.00
7,100.00	8.92	9.46	7,018.86	1,033.18	172.15	1,047.42	0.00	0.00	0.00
7,200.00	8.92	9.46	7,117.65	1,048.48	174.70	1,062.93	0.00	0.00	0.00
7,300.00	8.92	9.46	7,216.44	1,063.78	177.25	1,078.45	0.00	0.00	0.00
7,343.51	8.92	9.46	7,259.42	1,070.44	178.36	1,085.20	0.00	0.00	0.00
Start Drop -1.50									
7,400.00	8.08	9.46	7,315.29	1,078.68	179.73	1,093.55	1.50	-1.50	0.00
7,500.00	6.58	9.46	7,414.47	1,091.26	181.83	1,106.30	1.50	-1.50	0.00
7,600.00	5.08	9.46	7,513.95	1,101.27	183.49	1,116.45	1.50	-1.50	0.00
7,700.00	3.58	9.46	7,613.67	1,108.71	184.73	1,124.00	1.50	-1.50	0.00
7,800.00	2.08	9.46	7,713.54	1,113.58	185.54	1,128.93	1.50	-1.50	0.00
7,900.00	0.58	9.46	7,813.51	1,115.86	185.93	1,131.25	1.50	-1.50	0.00
7,938.49	0.00	0.00	7,852.00	1,116.06	185.96	1,131.44	1.50	-1.50	-24.58
Start 2126.00 hold at 7938.49 MD - KMGAS - RU 31-17 BTV									
8,000.00	0.00	0.00	7,913.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00
8,100.00	0.00	0.00	8,013.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00
8,200.00	0.00	0.00	8,113.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00
8,300.00	0.00	0.00	8,213.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 31-17 - Slot RU 31-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 31-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4 23Apr2019 mmsdi		

Planned 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)	
8,400.00	0.00	0.00	8,313.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,413.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,513.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,613.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,713.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,813.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,913.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,100.00	0.00	0.00	9,013.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,113.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,207.49	0.00	0.00	9,121.00	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
CMEO										
9,300.00	0.00	0.00	9,213.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,313.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,413.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,513.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,700.00	0.00	0.00	9,613.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,800.00	0.00	0.00	9,713.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,900.00	0.00	0.00	9,813.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
9,939.49	0.00	0.00	9,853.00	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
RLNS										
10,000.00	0.00	0.00	9,913.51	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
10,064.49	0.00	0.00	9,978.00	1,116.06	185.96	1,131.44	0.00	0.00	0.00	
TD at 10064.49 - TD - RU 31-17 PBHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RU 31-17 BTV	0.00	0.00	7,852.00	1,116.06	185.96	1,598,104.60	2,351,967.00	39.4530916	-107.7952020
- plan hits target center									
- Circle (radius 50.00)									
RU 31-17 PBHL	0.00	0.00	9,978.00	1,116.06	185.96	1,598,104.60	2,351,967.00	39.4530916	-107.7952020
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,091.50	9 5/8" @ 1100' MD	9.62	9.62	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RU 31-17 - Slot RU 31-17
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Project:	Garfield County, CO NAD83	MD Reference:	GL 7864' & RKB 24' @ 7888.00usft (H&P 318)
Site:	RU 31-17 Pad	North Reference:	True
Well:	RU 31-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #4 23Apr2019 mmsdi		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,929.76	3,887.00	G Sand		0.00	0.00
4,000.61	3,957.00	G Sand Base		0.00	0.00
5,970.46	5,903.00	Lower Wasatch		0.00	0.00
6,276.16	6,205.00	WFRK/UMVRD		0.00	0.00
6,374.35	6,302.00	MVRD		0.00	0.00
7,938.49	7,852.00	KMVGAS		0.00	0.00
9,207.49	9,121.00	CMEO		0.00	0.00
9,939.49	9,853.00	RLNS		0.00	0.00
10,064.49	9,978.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
200.00	200.00	0.00	0.00	Start Build 3.00
497.49	496.29	22.81	3.80	Start 6846.01 hold at 497.49 MD
7,343.51	7,259.42	1,070.44	178.36	Start Drop -1.50
7,938.49	7,852.00	1,116.06	185.96	Start 2126.00 hold at 7938.49 MD
10,064.49	9,978.00	1,116.06	185.96	TD at 10064.49