



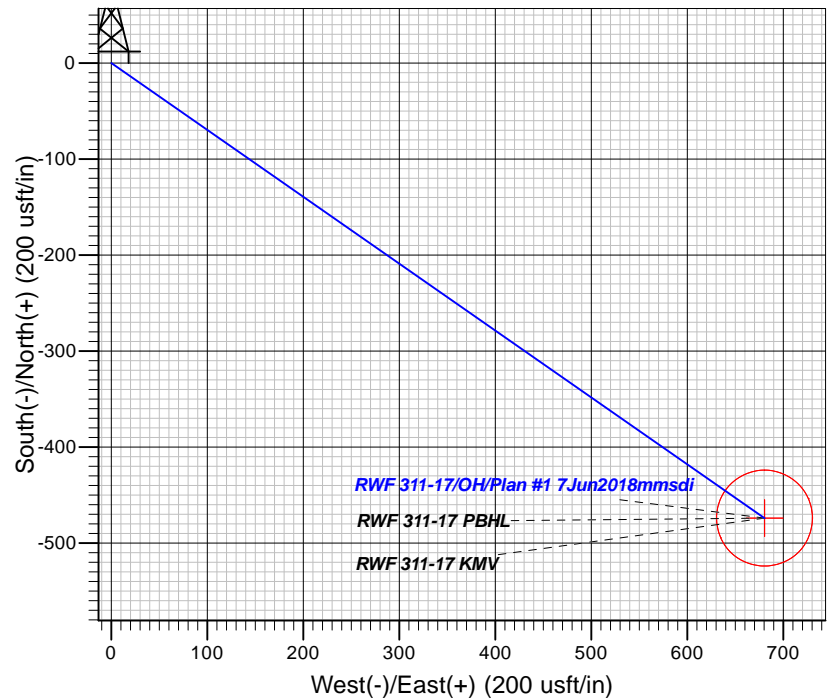
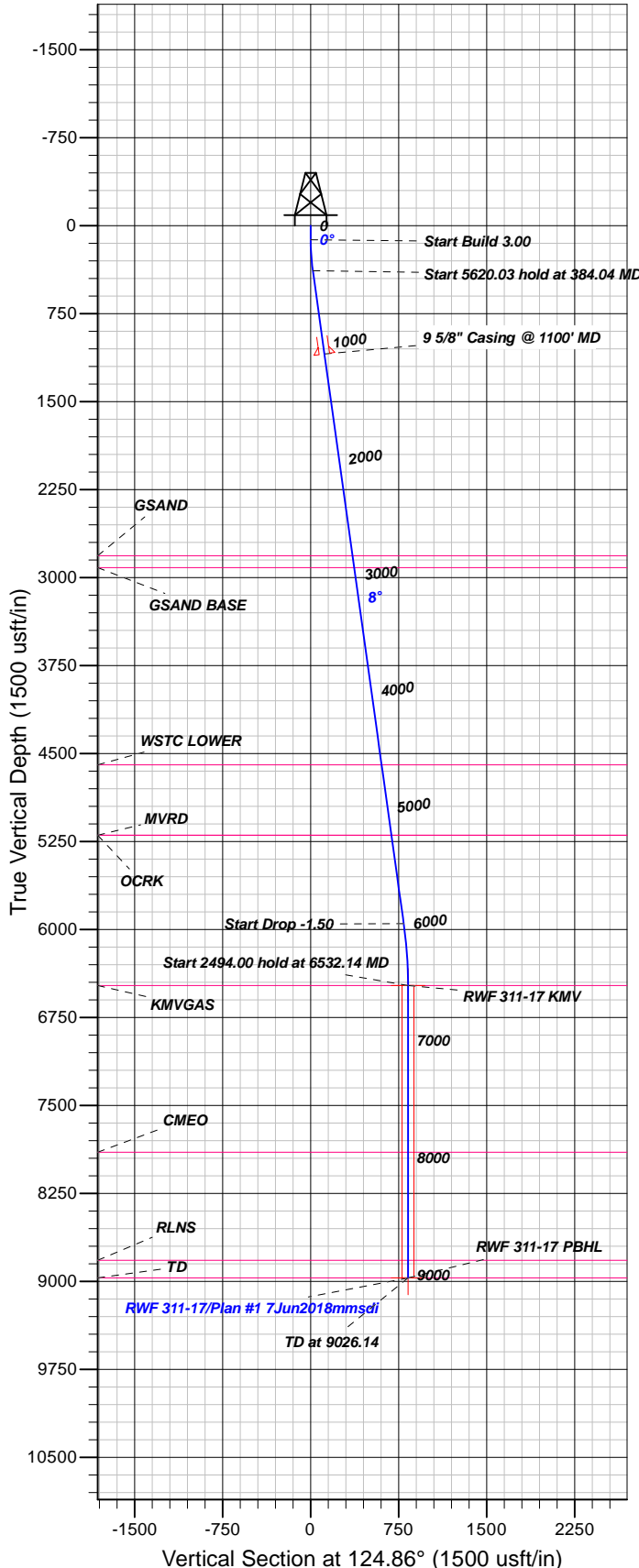
Azimuths to True North
Magnetic North: 9.43°

Magnetic Field
Strength: 51582.5nT
Dip Angle: 65.80°
Date: 6/7/2018
Model: HDGM

Well Details: RWF 311-17

GL 6174.5' & RKB 24' @ 6198.50usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1627398.20	2317156.70	39.5310080	-107.9212007	RWF 311-17 (A8)



FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
2814.00	2838.26	GSAND
2914.00	2939.22	GSAND BASE
4596.00	4637.42	WSTC LOWER
5196.00	5243.20	MVRD
5196.00	5243.20	OCRK
6476.00	6532.14	KMVGAS
7899.00	7955.14	CMEO
8819.00	8875.14	RLNS
8970.14	9026.28	TD

Plan: Plan #1 7Jun2018mmsdi

17:59, June 11 2018
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
1092.33	1100.00	5/8" Casing @ 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	120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	
3	384.04	7.92	124.86	383.20	-10.42	14.95	3.00	124.86	18.22	
4	6004.07	7.92	124.86	5949.60	-453.15	650.43	0.00	0.00	792.72	
5	6532.14	0.00	0.00	6476.00	-473.99	680.33	1.50	180.00	829.17	RWF 311-17 KMV
6	9026.14	0.00	0.00	8970.00	-473.99	680.33	0.00	0.00	829.17	RWF 311-17 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RWF 311-17 KMV	6476.00	-473.99	680.33	1626906.25	2317824.16	39.5297067	-107.9187888	Circle (Radius: 50.00)
- plan hits target center								
RWF 311-17 PBHL	8970.00	-473.99	680.33	1626906.25	2317824.16	39.5297067	-107.9187888	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

DOE 1-M-18

RWF 311-17 - Slot RWF 311-17 (A8)

OH

Plan: Plan #1 7Jun2018mmsdi

Standard Planning Report

11 June, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 311-17 - Slot RWF 311-17 (A8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 311-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

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		DOE 1-M-18			
Site Position:		Northing:	1,627,441.60 usft	Latitude:	39.5311260
From:	Map	Easting:	2,317,141.30 usft	Longitude:	-107.9212595
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.53 °

Well	RWF 311-17 - Slot RWF 311-17 (A8)					
Well Position	+N/-S	-42.97 usft	Northing:	1,627,398.20 usft	Latitude:	39.5310081
	+E/-W	16.55 usft	Easting:	2,317,156.70 usft	Longitude:	-107.9212008
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,174.50 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/7/2018	9.43	65.80	51,583

Design	Plan #1 7Jun2018mmsdi			
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	124.86

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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
384.04	7.92	124.86	383.20	-10.42	14.95	3.00	3.00	0.00	124.86	
6,004.07	7.92	124.86	5,949.60	-453.15	650.43	0.00	0.00	0.00	0.00	
6,532.14	0.00	0.00	6,476.00	-473.99	680.33	1.50	-1.50	0.00	180.00	RWF 311-17 KMV
9,026.14	0.00	0.00	8,970.00	-473.99	680.33	0.00	0.00	0.00	0.00	RWF 311-17 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 311-17 - Slot RWF 311-17 (A8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 311-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

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
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
200.00	2.40	124.86	199.98	-0.96	1.37	1.68	3.00	3.00	0.00
300.00	5.40	124.86	299.73	-4.85	6.95	8.48	3.00	3.00	0.00
384.04	7.92	124.86	383.20	-10.42	14.95	18.22	3.00	3.00	0.00
Start 5620.03 hold at 384.04 MD									
400.00	7.92	124.86	399.01	-11.67	16.76	20.42	0.00	0.00	0.00
500.00	7.92	124.86	498.05	-19.55	28.06	34.20	0.00	0.00	0.00
600.00	7.92	124.86	597.10	-27.43	39.37	47.98	0.00	0.00	0.00
700.00	7.92	124.86	696.15	-35.31	50.68	61.77	0.00	0.00	0.00
800.00	7.92	124.86	795.19	-43.19	61.99	75.55	0.00	0.00	0.00
900.00	7.92	124.86	894.24	-51.06	73.29	89.33	0.00	0.00	0.00
1,000.00	7.92	124.86	993.28	-58.94	84.60	103.11	0.00	0.00	0.00
1,100.00	7.92	124.86	1,092.33	-66.82	95.91	116.89	0.00	0.00	0.00
9 5/8" Casing @ 1100' MD									
1,200.00	7.92	124.86	1,191.37	-74.70	107.22	130.67	0.00	0.00	0.00
1,300.00	7.92	124.86	1,290.42	-82.58	118.52	144.45	0.00	0.00	0.00
1,400.00	7.92	124.86	1,389.47	-90.45	129.83	158.23	0.00	0.00	0.00
1,500.00	7.92	124.86	1,488.51	-98.33	141.14	172.01	0.00	0.00	0.00
1,600.00	7.92	124.86	1,587.56	-106.21	152.45	185.79	0.00	0.00	0.00
1,700.00	7.92	124.86	1,686.60	-114.09	163.75	199.58	0.00	0.00	0.00
1,800.00	7.92	124.86	1,785.65	-121.96	175.06	213.36	0.00	0.00	0.00
1,900.00	7.92	124.86	1,884.70	-129.84	186.37	227.14	0.00	0.00	0.00
2,000.00	7.92	124.86	1,983.74	-137.72	197.67	240.92	0.00	0.00	0.00
2,100.00	7.92	124.86	2,082.79	-145.60	208.98	254.70	0.00	0.00	0.00
2,200.00	7.92	124.86	2,181.83	-153.48	220.29	268.48	0.00	0.00	0.00
2,300.00	7.92	124.86	2,280.88	-161.35	231.60	282.26	0.00	0.00	0.00
2,400.00	7.92	124.86	2,379.92	-169.23	242.90	296.04	0.00	0.00	0.00
2,500.00	7.92	124.86	2,478.97	-177.11	254.21	309.82	0.00	0.00	0.00
2,600.00	7.92	124.86	2,578.02	-184.99	265.52	323.61	0.00	0.00	0.00
2,700.00	7.92	124.86	2,677.06	-192.87	276.83	337.39	0.00	0.00	0.00
2,800.00	7.92	124.86	2,776.11	-200.74	288.13	351.17	0.00	0.00	0.00
2,838.26	7.92	124.86	2,814.00	-203.76	292.46	356.44	0.00	0.00	0.00
GSAND									
2,900.00	7.92	124.86	2,875.15	-208.62	299.44	364.95	0.00	0.00	0.00
2,939.22	7.92	124.86	2,914.00	-211.71	303.88	370.35	0.00	0.00	0.00
GSAND BASE									
3,000.00	7.92	124.86	2,974.20	-216.50	310.75	378.73	0.00	0.00	0.00
3,100.00	7.92	124.86	3,073.25	-224.38	322.06	392.51	0.00	0.00	0.00
3,200.00	7.92	124.86	3,172.29	-232.25	333.36	406.29	0.00	0.00	0.00
3,300.00	7.92	124.86	3,271.34	-240.13	344.67	420.07	0.00	0.00	0.00
3,400.00	7.92	124.86	3,370.38	-248.01	355.98	433.85	0.00	0.00	0.00
3,500.00	7.92	124.86	3,469.43	-255.89	367.29	447.63	0.00	0.00	0.00
3,600.00	7.92	124.86	3,568.48	-263.77	378.59	461.42	0.00	0.00	0.00
3,700.00	7.92	124.86	3,667.52	-271.64	389.90	475.20	0.00	0.00	0.00
3,800.00	7.92	124.86	3,766.57	-279.52	401.21	488.98	0.00	0.00	0.00
3,900.00	7.92	124.86	3,865.61	-287.40	412.51	502.76	0.00	0.00	0.00
4,000.00	7.92	124.86	3,964.66	-295.28	423.82	516.54	0.00	0.00	0.00
4,100.00	7.92	124.86	4,063.70	-303.16	435.13	530.32	0.00	0.00	0.00
4,200.00	7.92	124.86	4,162.75	-311.03	446.44	544.10	0.00	0.00	0.00
4,300.00	7.92	124.86	4,261.80	-318.91	457.74	557.88	0.00	0.00	0.00
4,400.00	7.92	124.86	4,360.84	-326.79	469.05	571.66	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 311-17 - Slot RWF 311-17 (A8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 311-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

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)
4,500.00	7.92	124.86	4,459.89	-334.67	480.36	585.45	0.00	0.00	0.00
4,600.00	7.92	124.86	4,558.93	-342.54	491.67	599.23	0.00	0.00	0.00
4,637.42	7.92	124.86	4,596.00	-345.49	495.90	604.38	0.00	0.00	0.00
WSTC LOWER									
4,700.00	7.92	124.86	4,657.98	-350.42	502.97	613.01	0.00	0.00	0.00
4,800.00	7.92	124.86	4,757.03	-358.30	514.28	626.79	0.00	0.00	0.00
4,900.00	7.92	124.86	4,856.07	-366.18	525.59	640.57	0.00	0.00	0.00
5,000.00	7.92	124.86	4,955.12	-374.06	536.90	654.35	0.00	0.00	0.00
5,100.00	7.92	124.86	5,054.16	-381.93	548.20	668.13	0.00	0.00	0.00
5,200.00	7.92	124.86	5,153.21	-389.81	559.51	681.91	0.00	0.00	0.00
5,243.20	7.92	124.86	5,196.00	-393.22	564.40	687.87	0.00	0.00	0.00
OCRK - MVRD									
5,300.00	7.92	124.86	5,252.25	-397.69	570.82	695.69	0.00	0.00	0.00
5,400.00	7.92	124.86	5,351.30	-405.57	582.13	709.47	0.00	0.00	0.00
5,500.00	7.92	124.86	5,450.35	-413.45	593.43	723.26	0.00	0.00	0.00
5,600.00	7.92	124.86	5,549.39	-421.32	604.74	737.04	0.00	0.00	0.00
5,700.00	7.92	124.86	5,648.44	-429.20	616.05	750.82	0.00	0.00	0.00
5,800.00	7.92	124.86	5,747.48	-437.08	627.35	764.60	0.00	0.00	0.00
5,900.00	7.92	124.86	5,846.53	-444.96	638.66	778.38	0.00	0.00	0.00
6,000.00	7.92	124.86	5,945.58	-452.83	649.97	792.16	0.00	0.00	0.00
6,004.07	7.92	124.86	5,949.60	-453.15	650.43	792.72	0.00	0.00	0.00
Start Drop -1.50									
6,100.00	6.48	124.86	6,044.78	-460.03	660.30	804.75	1.50	-1.50	0.00
6,200.00	4.98	124.86	6,144.27	-465.74	668.49	814.74	1.50	-1.50	0.00
6,300.00	3.48	124.86	6,244.00	-469.96	674.55	822.11	1.50	-1.50	0.00
6,400.00	1.98	124.86	6,343.88	-472.68	678.46	826.88	1.50	-1.50	0.00
6,500.00	0.48	124.86	6,443.86	-473.91	680.22	829.03	1.50	-1.50	0.00
6,532.14	0.00	0.00	6,476.00	-473.99	680.33	829.17	1.50	-1.50	-388.46
Start 2494.00 hold at 6532.14 MD - KMGAS - RWF 311-17 KMW									
6,600.00	0.00	0.00	6,543.86	-473.99	680.33	829.17	0.00	0.00	0.00
6,700.00	0.00	0.00	6,643.86	-473.99	680.33	829.17	0.00	0.00	0.00
6,800.00	0.00	0.00	6,743.86	-473.99	680.33	829.17	0.00	0.00	0.00
6,900.00	0.00	0.00	6,843.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,000.00	0.00	0.00	6,943.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,100.00	0.00	0.00	7,043.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,200.00	0.00	0.00	7,143.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,300.00	0.00	0.00	7,243.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,400.00	0.00	0.00	7,343.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,500.00	0.00	0.00	7,443.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,600.00	0.00	0.00	7,543.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,700.00	0.00	0.00	7,643.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,800.00	0.00	0.00	7,743.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,900.00	0.00	0.00	7,843.86	-473.99	680.33	829.17	0.00	0.00	0.00
7,955.14	0.00	0.00	7,899.00	-473.99	680.33	829.17	0.00	0.00	0.00
CME0									
8,000.00	0.00	0.00	7,943.86	-473.99	680.33	829.17	0.00	0.00	0.00
8,100.00	0.00	0.00	8,043.86	-473.99	680.33	829.17	0.00	0.00	0.00
8,200.00	0.00	0.00	8,143.86	-473.99	680.33	829.17	0.00	0.00	0.00
8,300.00	0.00	0.00	8,243.86	-473.99	680.33	829.17	0.00	0.00	0.00
8,400.00	0.00	0.00	8,343.86	-473.99	680.33	829.17	0.00	0.00	0.00
8,500.00	0.00	0.00	8,443.86	-473.99	680.33	829.17	0.00	0.00	0.00
8,600.00	0.00	0.00	8,543.86	-473.99	680.33	829.17	0.00	0.00	0.00
8,700.00	0.00	0.00	8,643.86	-473.99	680.33	829.17	0.00	0.00	0.00

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Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 311-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

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)	
8,800.00	0.00	0.00	8,743.86	-473.99	680.33	829.17	0.00	0.00	0.00	
8,875.14	0.00	0.00	8,819.00	-473.99	680.33	829.17	0.00	0.00	0.00	
RLNS										
8,900.00	0.00	0.00	8,843.86	-473.99	680.33	829.17	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,943.86	-473.99	680.33	829.17	0.00	0.00	0.00	
9,026.14	0.00	0.00	8,970.00	-473.99	680.33	829.17	0.00	0.00	0.00	
TD at 9026.14 - RWF 311-17 PBHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
RWF 311-17 KMV	0.00	0.00	6,476.00	-473.99	680.33	1,626,906.25	2,317,824.16	39.5297067	-107.9187888	
- plan hits target center										
- Circle (radius 50.00)										
RWF 311-17 PBHL	0.00	0.00	8,970.00	-473.99	680.33	1,626,906.25	2,317,824.16	39.5297067	-107.9187888	
- plan hits target center										
- Point										

Casing Points										
Measured Depth (usft)	Vertical Depth (usft)	Name				Casing Diameter (in)	Hole Diameter (in)			
1,100.00	1,092.33	9 5/8" Casing @ 1100' MD				9.62	13.50			

Formations										
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)					
2,838.26	2,814.00	GSAND		0.00	0.00					
2,939.22	2,914.00	GSAND BASE		0.00	0.00					
4,637.42	4,596.00	WSTC LOWER		0.00	0.00					
5,243.20	5,196.00	OCRK		0.00	0.00					
5,243.20	5,196.00	MVRD		0.00	0.00					
6,532.14	6,476.00	KMVGAS		0.00	0.00					
7,955.14	7,899.00	CMEO		0.00	0.00					
8,875.14	8,819.00	RLNS		0.00	0.00					
9,026.28	8,970.14	TD		0.00	0.00					

Database:	Grand Junction District	Local Co-ordinate Reference:	Well RWF 311-17 - Slot RWF 311-17 (A8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6174.5' & RKB 24' @ 6198.50usft
Site:	DOE 1-M-18	North Reference:	True
Well:	RWF 311-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7Jun2018mmsdi		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.00	120.00	0.00	0.00	Start Build 3.00
384.04	383.20	-10.42	14.95	Start 5620.03 hold at 384.04 MD
6,004.07	5,949.60	-453.15	650.43	Start Drop -1.50
6,532.14	6,476.00	-473.99	680.33	Start 2494.00 hold at 6532.14 MD
9,026.14	8,970.00	-473.99	680.33	TD at 9026.14