



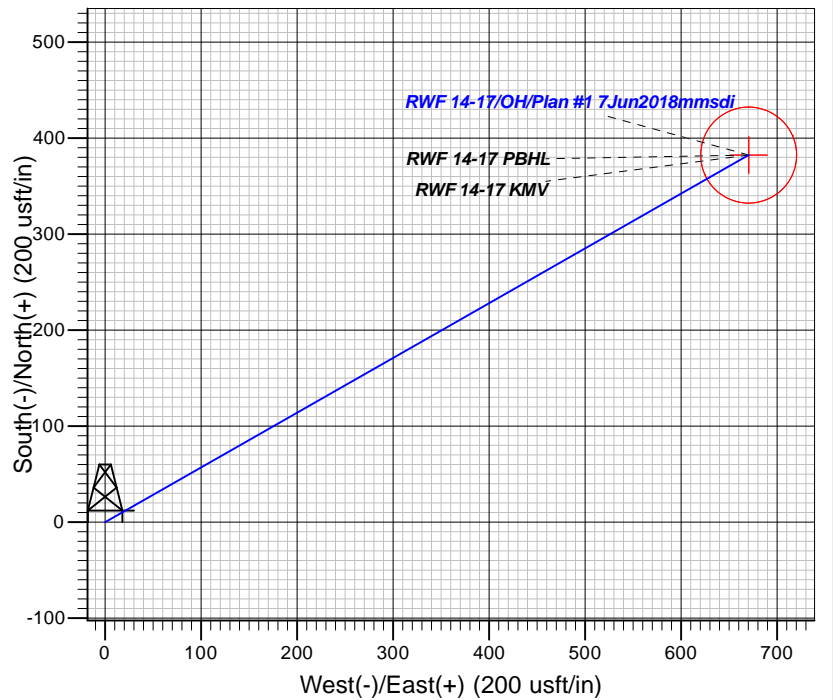
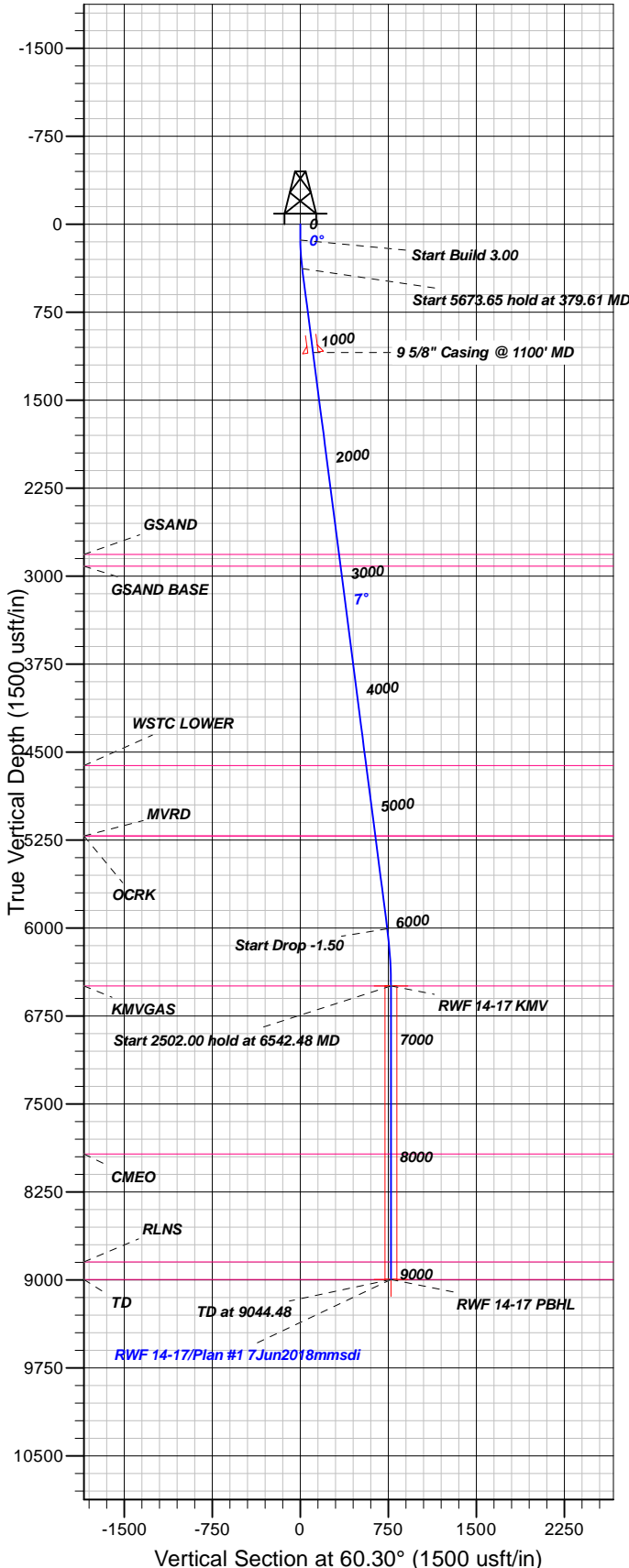
Azimuths to True North  
Magnetic North: 9.43°

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

## Well Details: RWF 14-17

GL 6174.5' & RKB 24' @ 6198.50usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1627419.30	2317144.00	39.5310650	-107.9212477	RWF 14-17 (B11)



## FORMATION TOP DETAILS

TVDP	MD	Formation
2814.00	2834.78	GSAND
2914.00	2935.60	GSAND BASE
4614.00	4649.64	WSTC LOWER
5214.00	5254.60	MVRD
5214.00	5254.60	OCK
6494.00	6542.48	KMGAS
7926.00	7974.48	CME
8846.00	8894.48	RLNS
8996.00	9044.48	TD

Plan: Plan #1 7Jun2018mmsdi

11:16, June 14 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
1093.43	1100.00	5/8" Casing @ 1100' MD	9.62

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	
3	379.61	7.34	60.30	378.94	7.75	13.59	3.00	60.30	15.64	
4	6053.26	7.34	60.30	6006.12	366.85	643.03	0.00	0.00	740.32	
5	6542.48	0.00	0.00	6494.00	382.36	670.21	1.50	180.00	771.61	RWF 14-17 KMV
6	9044.48	0.00	0.00	8996.00	382.36	670.21	0.00	0.00	771.61	RWF 14-17 PBHL

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RWF 14-17 KMV	6494.00	382.36	670.21	1627783.66	2317824.16	39.5321147	-107.9188716	Circle (Radius: 50.00)
- plan hits target center								
RWF 14-17 PBHL	8996.00	382.36	670.21	1627783.66	2317824.16	39.5321147	-107.9188716	Point
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**DOE 1-M-18**

**RWF 14-17 - Slot RWF 14-17 (B11)**

**OH**

**Plan: Plan #1 7Jun2018mmsdi**

## **Standard Planning Report**

**14 June, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well RWF 14-17 - Slot RWF 14-17 (B11)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6174.5' & RKB 24' @ 6198.50usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6174.5' & RKB 24' @ 6198.50usft
<b>Site:</b>	DOE 1-M-18	<b>North Reference:</b>	True
<b>Well:</b>	RWF 14-17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 7Jun2018mmsdi		

<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		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 14-17 - Slot RWF 14-17 (B11)					
Well Position	+N/-S	-22.22 usft	Northing:	1,627,419.30 usft	Latitude:	39.5310650
	+E/-W	3.29 usft	Easting:	2,317,144.00 usft	Longitude:	-107.9212478
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,174.50 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	6/7/2018	9.43	65.80	51,583

<b>Design</b>	Plan #1 7Jun2018mmsdi			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<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	60.30

<b>Plan Sections</b>										
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	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
379.61	7.34	60.30	378.94	7.75	13.59	3.00	3.00	0.00	60.30	
6,053.26	7.34	60.30	6,006.12	366.85	643.03	0.00	0.00	0.00	0.00	
6,542.48	0.00	0.00	6,494.00	382.36	670.21	1.50	-1.50	0.00	180.00	RWF 14-17 KMV
9,044.48	0.00	0.00	8,996.00	382.36	670.21	0.00	0.00	0.00	0.00	RWF 14-17 PBHL

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<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6174.5' & RKB 24' @ 6198.50usft
<b>Site:</b>	DOE 1-M-18	<b>North Reference:</b>	True
<b>Well:</b>	RWF 14-17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	1.95	60.30	199.99	0.55	0.96	1.11	3.00	3.00	0.00
300.00	4.95	60.30	299.79	3.53	6.19	7.12	3.00	3.00	0.00
379.61	7.34	60.30	378.94	7.75	13.59	15.64	3.00	3.00	0.00
400.00	7.34	60.30	399.16	9.04	15.85	18.25	0.00	0.00	0.00
500.00	7.34	60.30	498.35	15.37	26.94	31.02	0.00	0.00	0.00
600.00	7.34	60.30	597.53	21.70	38.04	43.79	0.00	0.00	0.00
700.00	7.34	60.30	696.71	28.03	49.13	56.57	0.00	0.00	0.00
800.00	7.34	60.30	795.89	34.36	60.23	69.34	0.00	0.00	0.00
900.00	7.34	60.30	895.07	40.69	71.32	82.11	0.00	0.00	0.00
1,000.00	7.34	60.30	994.25	47.02	82.41	94.88	0.00	0.00	0.00
1,100.00	7.34	60.30	1,093.43	53.35	93.51	107.66	0.00	0.00	0.00
9 5/8" Casing @ 1100' MD									
1,200.00	7.34	60.30	1,192.61	59.68	104.60	120.43	0.00	0.00	0.00
1,300.00	7.34	60.30	1,291.79	66.01	115.70	133.20	0.00	0.00	0.00
1,400.00	7.34	60.30	1,390.97	72.34	126.79	145.97	0.00	0.00	0.00
1,500.00	7.34	60.30	1,490.16	78.66	137.89	158.75	0.00	0.00	0.00
1,600.00	7.34	60.30	1,589.34	84.99	148.98	171.52	0.00	0.00	0.00
1,700.00	7.34	60.30	1,688.52	91.32	160.07	184.29	0.00	0.00	0.00
1,800.00	7.34	60.30	1,787.70	97.65	171.17	197.07	0.00	0.00	0.00
1,900.00	7.34	60.30	1,886.88	103.98	182.26	209.84	0.00	0.00	0.00
2,000.00	7.34	60.30	1,986.06	110.31	193.36	222.61	0.00	0.00	0.00
2,100.00	7.34	60.30	2,085.24	116.64	204.45	235.38	0.00	0.00	0.00
2,200.00	7.34	60.30	2,184.42	122.97	215.55	248.16	0.00	0.00	0.00
2,300.00	7.34	60.30	2,283.60	129.30	226.64	260.93	0.00	0.00	0.00
2,400.00	7.34	60.30	2,382.78	135.63	237.73	273.70	0.00	0.00	0.00
2,500.00	7.34	60.30	2,481.96	141.96	248.83	286.47	0.00	0.00	0.00
2,600.00	7.34	60.30	2,581.15	148.29	259.92	299.25	0.00	0.00	0.00
2,700.00	7.34	60.30	2,680.33	154.62	271.02	312.02	0.00	0.00	0.00
2,800.00	7.34	60.30	2,779.51	160.95	282.11	324.79	0.00	0.00	0.00
2,834.78	7.34	60.30	2,814.00	163.15	285.97	329.23	0.00	0.00	0.00
GSAND									
2,900.00	7.34	60.30	2,878.69	167.27	293.20	337.56	0.00	0.00	0.00
2,935.60	7.34	60.30	2,914.00	169.53	297.15	342.11	0.00	0.00	0.00
GSAND BASE									
3,000.00	7.34	60.30	2,977.87	173.60	304.30	350.34	0.00	0.00	0.00
3,100.00	7.34	60.30	3,077.05	179.93	315.39	363.11	0.00	0.00	0.00
3,200.00	7.34	60.30	3,176.23	186.26	326.49	375.88	0.00	0.00	0.00
3,300.00	7.34	60.30	3,275.41	192.59	337.58	388.66	0.00	0.00	0.00
3,400.00	7.34	60.30	3,374.59	198.92	348.68	401.43	0.00	0.00	0.00
3,500.00	7.34	60.30	3,473.77	205.25	359.77	414.20	0.00	0.00	0.00
3,600.00	7.34	60.30	3,572.95	211.58	370.86	426.97	0.00	0.00	0.00
3,700.00	7.34	60.30	3,672.14	217.91	381.96	439.75	0.00	0.00	0.00
3,800.00	7.34	60.30	3,771.32	224.24	393.05	452.52	0.00	0.00	0.00
3,900.00	7.34	60.30	3,870.50	230.57	404.15	465.29	0.00	0.00	0.00
4,000.00	7.34	60.30	3,969.68	236.90	415.24	478.06	0.00	0.00	0.00
4,100.00	7.34	60.30	4,068.86	243.23	426.34	490.84	0.00	0.00	0.00
4,200.00	7.34	60.30	4,168.04	249.56	437.43	503.61	0.00	0.00	0.00
4,300.00	7.34	60.30	4,267.22	255.88	448.52	516.38	0.00	0.00	0.00
4,400.00	7.34	60.30	4,366.40	262.21	459.62	529.15	0.00	0.00	0.00
4,500.00	7.34	60.30	4,465.58	268.54	470.71	541.93	0.00	0.00	0.00

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<b>Site:</b>	DOE 1-M-18	<b>North Reference:</b>	True
<b>Well:</b>	RWF 14-17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)	
4,600.00	7.34	60.30	4,564.76	274.87	481.81	554.70	0.00	0.00	0.00	
4,649.64	7.34	60.30	4,614.00	278.01	487.31	561.04	0.00	0.00	0.00	
<b>WSTC LOWER</b>										
4,700.00	7.34	60.30	4,663.95	281.20	492.90	567.47	0.00	0.00	0.00	
4,800.00	7.34	60.30	4,763.13	287.53	503.99	580.25	0.00	0.00	0.00	
4,900.00	7.34	60.30	4,862.31	293.86	515.09	593.02	0.00	0.00	0.00	
5,000.00	7.34	60.30	4,961.49	300.19	526.18	605.79	0.00	0.00	0.00	
5,100.00	7.34	60.30	5,060.67	306.52	537.28	618.56	0.00	0.00	0.00	
5,200.00	7.34	60.30	5,159.85	312.85	548.37	631.34	0.00	0.00	0.00	
5,254.60	7.34	60.30	5,214.00	316.30	554.43	638.31	0.00	0.00	0.00	
<b>OCRK - MVRD</b>										
5,300.00	7.34	60.30	5,259.03	319.18	559.47	644.11	0.00	0.00	0.00	
5,400.00	7.34	60.30	5,358.21	325.51	570.56	656.88	0.00	0.00	0.00	
5,500.00	7.34	60.30	5,457.39	331.84	581.65	669.65	0.00	0.00	0.00	
5,600.00	7.34	60.30	5,556.57	338.17	592.75	682.43	0.00	0.00	0.00	
5,700.00	7.34	60.30	5,655.75	344.49	603.84	695.20	0.00	0.00	0.00	
5,800.00	7.34	60.30	5,754.94	350.82	614.94	707.97	0.00	0.00	0.00	
5,900.00	7.34	60.30	5,854.12	357.15	626.03	720.74	0.00	0.00	0.00	
6,000.00	7.34	60.30	5,953.30	363.48	637.13	733.52	0.00	0.00	0.00	
6,053.26	7.34	60.30	6,006.12	366.85	643.03	740.32	0.00	0.00	0.00	
6,100.00	6.64	60.30	6,052.51	369.67	647.97	746.01	1.50	-1.50	0.00	
6,200.00	5.14	60.30	6,151.98	374.75	656.88	756.26	1.50	-1.50	0.00	
6,300.00	3.64	60.30	6,251.69	378.54	663.53	763.91	1.50	-1.50	0.00	
6,400.00	2.14	60.30	6,351.56	381.04	667.90	768.95	1.50	-1.50	0.00	
6,500.00	0.64	60.30	6,451.53	382.24	670.00	771.37	1.50	-1.50	0.00	
6,542.48	0.00	0.00	6,494.00	382.36	670.21	771.61	1.50	-1.50	0.00	
<b>KMVGAS - RWF 14-17 KMV</b>										
6,600.00	0.00	0.00	6,551.52	382.36	670.21	771.61	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,651.52	382.36	670.21	771.61	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,751.52	382.36	670.21	771.61	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,851.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,951.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,051.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,151.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,251.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,351.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,451.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,551.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,651.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,751.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,851.52	382.36	670.21	771.61	0.00	0.00	0.00	
7,974.48	0.00	0.00	7,926.00	382.36	670.21	771.61	0.00	0.00	0.00	
<b>CMEO</b>										
8,000.00	0.00	0.00	7,951.52	382.36	670.21	771.61	0.00	0.00	0.00	
8,100.00	0.00	0.00	8,051.52	382.36	670.21	771.61	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,151.52	382.36	670.21	771.61	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,251.52	382.36	670.21	771.61	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,351.52	382.36	670.21	771.61	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,451.52	382.36	670.21	771.61	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,551.52	382.36	670.21	771.61	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,651.52	382.36	670.21	771.61	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,751.52	382.36	670.21	771.61	0.00	0.00	0.00	
8,894.48	0.00	0.00	8,846.00	382.36	670.21	771.61	0.00	0.00	0.00	
<b>RLNS</b>										

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<b>Site:</b>	DOE 1-M-18	<b>North Reference:</b>	True
<b>Well:</b>	RWF 14-17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
8,900.00	0.00	0.00	8,851.52	382.36	670.21	771.61	0.00	0.00	0.00
9,000.00	0.00	0.00	8,951.52	382.36	670.21	771.61	0.00	0.00	0.00
9,044.48	0.00	0.00	8,996.00	382.36	670.21	771.61	0.00	0.00	0.00
TD - RWF 14-17 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 14-17 KMV	0.00	0.00	6,494.00	382.36	670.21	1,627,783.66	2,317,824.16	39.5321147	-107.9188716
- plan hits target center									
- Circle (radius 50.00)									
RWF 14-17 PBHL	0.00	0.00	8,996.00	382.36	670.21	1,627,783.66	2,317,824.16	39.5321147	-107.9188716
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,093.43	9 5/8" Casing @ 1100' MD	9.62	13.50	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,834.78	2,814.00	GSAND		0.00	0.00
2,935.60	2,914.00	GSAND BASE		0.00	0.00
4,649.64	4,614.00	WSTC LOWER		0.00	0.00
5,254.60	5,214.00	OCRK		0.00	0.00
5,254.60	5,214.00	MVRD		0.00	0.00
6,542.48	6,494.00	KMVGAS		0.00	0.00
7,974.48	7,926.00	CMEO		0.00	0.00
8,894.48	8,846.00	RLNS		0.00	0.00
9,044.48	8,996.00	TD		0.00	0.00