



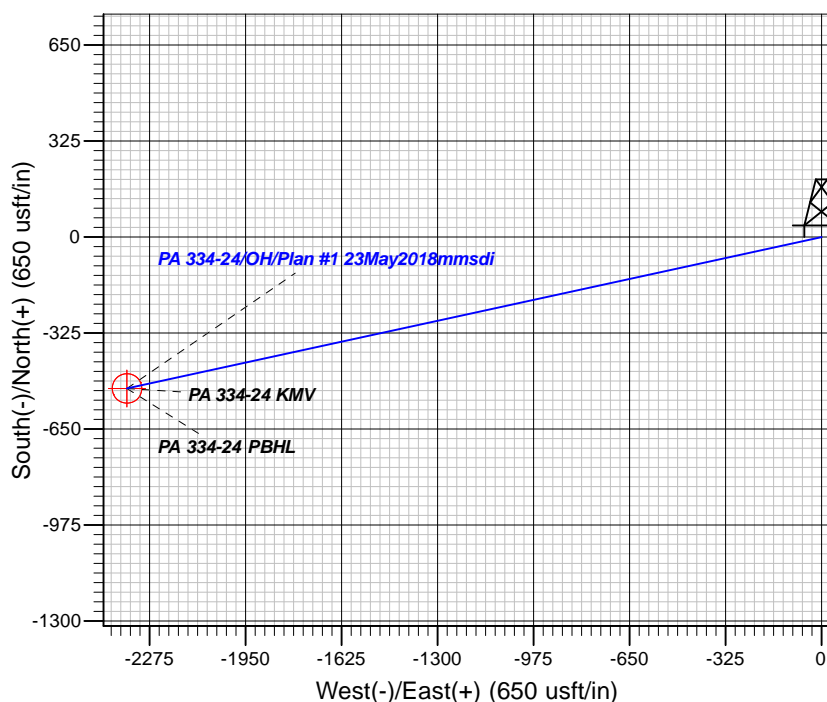
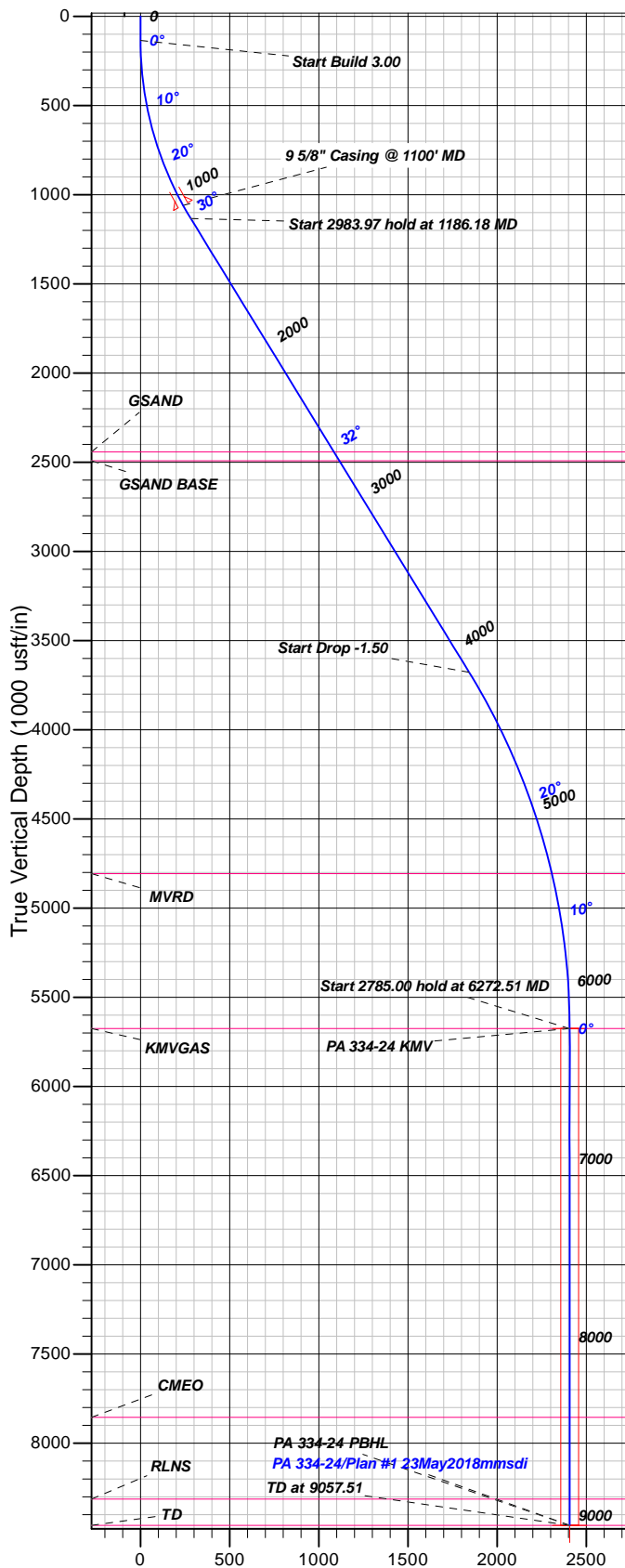
Azimuths to True North
Magnetic North: 9.38°

Magnetic Field
Strength: 51610.3snT
Dip Angle: 65.77°
Date: 5/23/2018
Model: HDGM

Well Details: PA 334-24

GL 5733' & RKB 24' @ 5757.00usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1618770.30	2312576.00	39.5069930	-107.9366147	PA 334-24 (A12)



FORMATION TOP DETAILS

TVDP	MD	Formation
2442.00	2720.93	GSAND
2492.00	2779.60	GSAND BASE
4807.00	5396.86	MVRD
5675.00	6272.51	KMVGAS
7855.00	8452.51	CMEO
8313.00	8910.51	RLNS
8460.00	9057.51	TD

Plan: Plan #1 23May2018mmsdi

17:38, June 04 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
1059.46	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	1186.18	31.54	257.71	1133.91	-60.03	-275.59	3.00	257.71	282.05	
4	4170.15	31.54	257.71	3677.19	-392.19	-1800.52	0.00	0.00	1842.74	
5	6272.51	0.00	0.00	5675.00	-512.25	-2351.71	1.50	180.00	2406.85	PA 334-24 KMV
6	9057.51	0.00	0.00	8460.00	-512.25	-2351.71	0.00	0.00	2406.85	PA 334-24 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PA 334-24 KMV	5675.00	-512.25	-2351.71	1618321.30	2310211.40	39.5055864	-107.9449493	Circle (Radius: 50.00)
- plan hits target center								
PA 334-24 PBHL	8460.00	-512.25	-2351.71	1618321.30	2310211.40	39.5055864	-107.9449493	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

RWF 13-19 Pad

PA 334-24 - Slot PA 334-24 (A12)

OH

Plan: Plan #1 23May2018mmsdi

Standard Planning Report

04 June, 2018



Database:	Grand Junction District	Local Co-ordinate Reference:	Well PA 334-24 - Slot PA 334-24 (A12)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5733' & RKB 24' @ 5757.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5733' & RKB 24' @ 5757.00usft
Site:	RWF 13-19 Pad	North Reference:	True
Well:	PA 334-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 23May2018mmsdi		

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		RWF 13-19 Pad			
Site Position:		Northing:	1,618,792.50 usft	Latitude:	39.5070510
From:	Map	Easting:	2,312,535.60 usft	Longitude:	-107.9367600
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.54 °

Well	PA 334-24 - Slot PA 334-24 (A12)					
Well Position	+N/-S	-21.11 usft	Northing:	1,618,770.30 usft	Latitude:	39.5069931
	+E/-W	40.98 usft	Easting:	2,312,576.00 usft	Longitude:	-107.9366148
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,733.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/23/2018	9.38	65.77	51,610

Design	Plan #1 23May2018mmsdi			
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	257.71

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	
135.00	0.00	0.00	135.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,186.18	31.54	257.71	1,133.91	-60.03	-275.59	3.00	3.00	0.00	257.71	
4,170.15	31.54	257.71	3,677.19	-392.19	-1,800.52	0.00	0.00	0.00	0.00	
6,272.51	0.00	0.00	5,675.00	-512.25	-2,351.71	1.50	-1.50	0.00	180.00	PA 334-24 KMV
9,057.51	0.00	0.00	8,460.00	-512.25	-2,351.71	0.00	0.00	0.00	0.00	PA 334-24 PBHL

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Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5733' & RKB 24' @ 5757.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5733' & RKB 24' @ 5757.00usft
Site:	RWF 13-19 Pad	North Reference:	True
Well:	PA 334-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 23May2018mmsdi		

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
Start Build 3.00									
200.00	1.95	257.71	199.99	-0.24	-1.08	1.11	3.00	3.00	0.00
300.00	4.95	257.71	299.79	-1.52	-6.96	7.12	3.00	3.00	0.00
400.00	7.95	257.71	399.15	-3.91	-17.93	18.36	3.00	3.00	0.00
500.00	10.95	257.71	497.78	-7.40	-33.98	34.77	3.00	3.00	0.00
600.00	13.95	257.71	595.42	-11.99	-55.04	56.33	3.00	3.00	0.00
700.00	16.95	257.71	691.79	-17.66	-81.06	82.97	3.00	3.00	0.00
800.00	19.95	257.71	786.64	-24.39	-111.98	114.61	3.00	3.00	0.00
900.00	22.95	257.71	879.71	-32.17	-147.71	151.17	3.00	3.00	0.00
1,000.00	25.95	257.71	970.73	-40.98	-188.15	192.56	3.00	3.00	0.00
1,100.00	28.95	257.71	1,059.46	-50.79	-233.18	238.65	3.00	3.00	0.00
9 5/8" Casing @ 1100' MD									
1,186.18	31.54	257.71	1,133.91	-60.03	-275.59	282.05	3.00	3.00	0.00
Start 2983.97 hold at 1186.18 MD									
1,200.00	31.54	257.71	1,145.68	-61.57	-282.65	289.28	0.00	0.00	0.00
1,300.00	31.54	257.71	1,230.92	-72.70	-333.76	341.58	0.00	0.00	0.00
1,400.00	31.54	257.71	1,316.15	-83.83	-384.86	393.89	0.00	0.00	0.00
1,500.00	31.54	257.71	1,401.38	-94.96	-435.97	446.19	0.00	0.00	0.00
1,600.00	31.54	257.71	1,486.61	-106.09	-487.07	498.49	0.00	0.00	0.00
1,700.00	31.54	257.71	1,571.84	-117.23	-538.18	550.79	0.00	0.00	0.00
1,800.00	31.54	257.71	1,657.07	-128.36	-589.28	603.10	0.00	0.00	0.00
1,900.00	31.54	257.71	1,742.31	-139.49	-640.38	655.40	0.00	0.00	0.00
2,000.00	31.54	257.71	1,827.54	-150.62	-691.49	707.70	0.00	0.00	0.00
2,100.00	31.54	257.71	1,912.77	-161.75	-742.59	760.00	0.00	0.00	0.00
2,200.00	31.54	257.71	1,998.00	-172.88	-793.70	812.31	0.00	0.00	0.00
2,300.00	31.54	257.71	2,083.23	-184.02	-844.80	864.61	0.00	0.00	0.00
2,400.00	31.54	257.71	2,168.46	-195.15	-895.91	916.91	0.00	0.00	0.00
2,500.00	31.54	257.71	2,253.70	-206.28	-947.01	969.21	0.00	0.00	0.00
2,600.00	31.54	257.71	2,338.93	-217.41	-998.11	1,021.52	0.00	0.00	0.00
2,700.00	31.54	257.71	2,424.16	-228.54	-1,049.22	1,073.82	0.00	0.00	0.00
2,720.93	31.54	257.71	2,442.00	-230.87	-1,059.92	1,084.77	0.00	0.00	0.00
GSAND									
2,779.60	31.54	257.71	2,492.00	-237.40	-1,089.89	1,115.45	0.00	0.00	0.00
GSAND BASE									
2,800.00	31.54	257.71	2,509.39	-239.67	-1,100.32	1,126.12	0.00	0.00	0.00
2,900.00	31.54	257.71	2,594.62	-250.81	-1,151.43	1,178.43	0.00	0.00	0.00
3,000.00	31.54	257.71	2,679.85	-261.94	-1,202.53	1,230.73	0.00	0.00	0.00
3,100.00	31.54	257.71	2,765.09	-273.07	-1,253.63	1,283.03	0.00	0.00	0.00
3,200.00	31.54	257.71	2,850.32	-284.20	-1,304.74	1,335.33	0.00	0.00	0.00
3,300.00	31.54	257.71	2,935.55	-295.33	-1,355.84	1,387.64	0.00	0.00	0.00
3,400.00	31.54	257.71	3,020.78	-306.46	-1,406.95	1,439.94	0.00	0.00	0.00
3,500.00	31.54	257.71	3,106.01	-317.60	-1,458.05	1,492.24	0.00	0.00	0.00
3,600.00	31.54	257.71	3,191.24	-328.73	-1,509.16	1,544.54	0.00	0.00	0.00
3,700.00	31.54	257.71	3,276.48	-339.86	-1,560.26	1,596.85	0.00	0.00	0.00
3,800.00	31.54	257.71	3,361.71	-350.99	-1,611.36	1,649.15	0.00	0.00	0.00
3,900.00	31.54	257.71	3,446.94	-362.12	-1,662.47	1,701.45	0.00	0.00	0.00
4,000.00	31.54	257.71	3,532.17	-373.25	-1,713.57	1,753.75	0.00	0.00	0.00
4,100.00	31.54	257.71	3,617.40	-384.38	-1,764.68	1,806.06	0.00	0.00	0.00
4,170.15	31.54	257.71	3,677.19	-392.19	-1,800.52	1,842.74	0.00	0.00	0.00
Start Drop -1.50									

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Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 5733' & RKB 24' @ 5757.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 5733' & RKB 24' @ 5757.00usft
Site:	RWF 13-19 Pad	North Reference:	True
Well:	PA 334-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 23May2018mmsdi		

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)	
4,200.00	31.09	257.71	3,702.70	-395.50	-1,815.68	1,858.26	1.50	-1.50	0.00	
4,300.00	29.59	257.71	3,789.00	-406.24	-1,865.04	1,908.77	1.50	-1.50	0.00	
4,400.00	28.09	257.71	3,876.60	-416.51	-1,912.16	1,957.00	1.50	-1.50	0.00	
4,500.00	26.59	257.71	3,965.43	-426.28	-1,957.03	2,002.92	1.50	-1.50	0.00	
4,600.00	25.09	257.71	4,055.43	-435.56	-1,999.61	2,046.50	1.50	-1.50	0.00	
4,700.00	23.59	257.71	4,146.54	-444.33	-2,039.88	2,087.71	1.50	-1.50	0.00	
4,800.00	22.09	257.71	4,238.69	-452.59	-2,077.80	2,126.52	1.50	-1.50	0.00	
4,900.00	20.59	257.71	4,331.84	-460.33	-2,113.35	2,162.91	1.50	-1.50	0.00	
5,000.00	19.09	257.71	4,425.90	-467.56	-2,146.51	2,196.84	1.50	-1.50	0.00	
5,100.00	17.59	257.71	4,520.82	-474.25	-2,177.25	2,228.30	1.50	-1.50	0.00	
5,200.00	16.09	257.71	4,616.53	-480.42	-2,205.55	2,257.27	1.50	-1.50	0.00	
5,300.00	14.59	257.71	4,712.97	-486.05	-2,231.40	2,283.72	1.50	-1.50	0.00	
5,396.86	13.13	257.71	4,807.00	-490.98	-2,254.07	2,306.92	1.50	-1.50	0.00	
MVRD										
5,400.00	13.09	257.71	4,810.06	-491.14	-2,254.76	2,307.63	1.50	-1.50	0.00	
5,500.00	11.59	257.71	4,907.75	-495.68	-2,275.64	2,329.00	1.50	-1.50	0.00	
5,600.00	10.09	257.71	5,005.96	-499.69	-2,294.01	2,347.80	1.50	-1.50	0.00	
5,700.00	8.59	257.71	5,104.63	-503.14	-2,309.87	2,364.03	1.50	-1.50	0.00	
5,800.00	7.09	257.71	5,203.70	-506.04	-2,323.19	2,377.66	1.50	-1.50	0.00	
5,900.00	5.59	257.71	5,303.08	-508.39	-2,333.97	2,388.70	1.50	-1.50	0.00	
6,000.00	4.09	257.71	5,402.72	-510.18	-2,342.21	2,397.14	1.50	-1.50	0.00	
6,100.00	2.59	257.71	5,502.55	-511.42	-2,347.90	2,402.96	1.50	-1.50	0.00	
6,200.00	1.09	257.71	5,602.50	-512.11	-2,351.04	2,406.16	1.50	-1.50	0.00	
6,272.51	0.00	0.00	5,675.00	-512.25	-2,351.71	2,406.85	1.50	-1.50	141.07	
Start 2785.00 hold at 6272.51 MD - KMGAS - PA 334-24 KMV										
6,300.00	0.00	0.00	5,702.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
6,400.00	0.00	0.00	5,802.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
6,500.00	0.00	0.00	5,902.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,002.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,102.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,202.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,302.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,402.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,502.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,602.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,300.00	0.00	0.00	6,702.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,400.00	0.00	0.00	6,802.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,500.00	0.00	0.00	6,902.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,002.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,102.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,202.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,302.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,402.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,502.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,200.00	0.00	0.00	7,602.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,300.00	0.00	0.00	7,702.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,400.00	0.00	0.00	7,802.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,452.51	0.00	0.00	7,855.00	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
CME0										
8,500.00	0.00	0.00	7,902.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,002.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,102.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,202.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	

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Site:	RWF 13-19 Pad	North Reference:	True
Well:	PA 334-24	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 23May2018mmsdi		

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	8,302.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
8,910.51	0.00	0.00	8,313.00	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
RLNS										
9,000.00	0.00	0.00	8,402.49	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
9,057.51	0.00	0.00	8,460.00	-512.25	-2,351.71	2,406.85	0.00	0.00	0.00	
TD at 9057.51 - TD - PA 334-24 PBHL										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
PA 334-24 KMV - plan hits target center - Circle (radius 50.00)	0.00	0.00	5,675.00	-512.25	-2,351.71	1,618,321.30	2,310,211.40	39.5055864		-107.9449494
PA 334-24 PBHL - plan hits target center - Point	0.00	0.00	8,460.00	-512.25	-2,351.71	1,618,321.30	2,310,211.40	39.5055864		-107.9449494

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,100.00	1,059.46	9 5/8" Casing @ 1100' MD		9.62	13.50

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,720.93	2,442.00	GSAND		0.00	0.00	
2,779.60	2,492.00	GSAND BASE		0.00	0.00	
5,396.86	4,807.00	MVRD		0.00	0.00	
6,272.51	5,675.00	KMVGAS		0.00	0.00	
8,452.51	7,855.00	CME0		0.00	0.00	
8,910.51	8,313.00	RLNS		0.00	0.00	
9,057.51	8,460.00	TD		0.00	0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
135.00	135.00	0.00	0.00	Start Build 3.00	
1,186.18	1,133.91	-60.03	-275.59	Start 2983.97 hold at 1186.18 MD	
4,170.15	3,677.19	-392.19	-1,800.52	Start Drop -1.50	
6,272.51	5,675.00	-512.25	-2,351.71	Start 2785.00 hold at 6272.51 MD	
9,057.51	8,460.00	-512.25	-2,351.71	TD at 9057.51	