

Sec 8, T6S, R94W
RWF 322-8
Q200972 & RM-200773
Plan #1

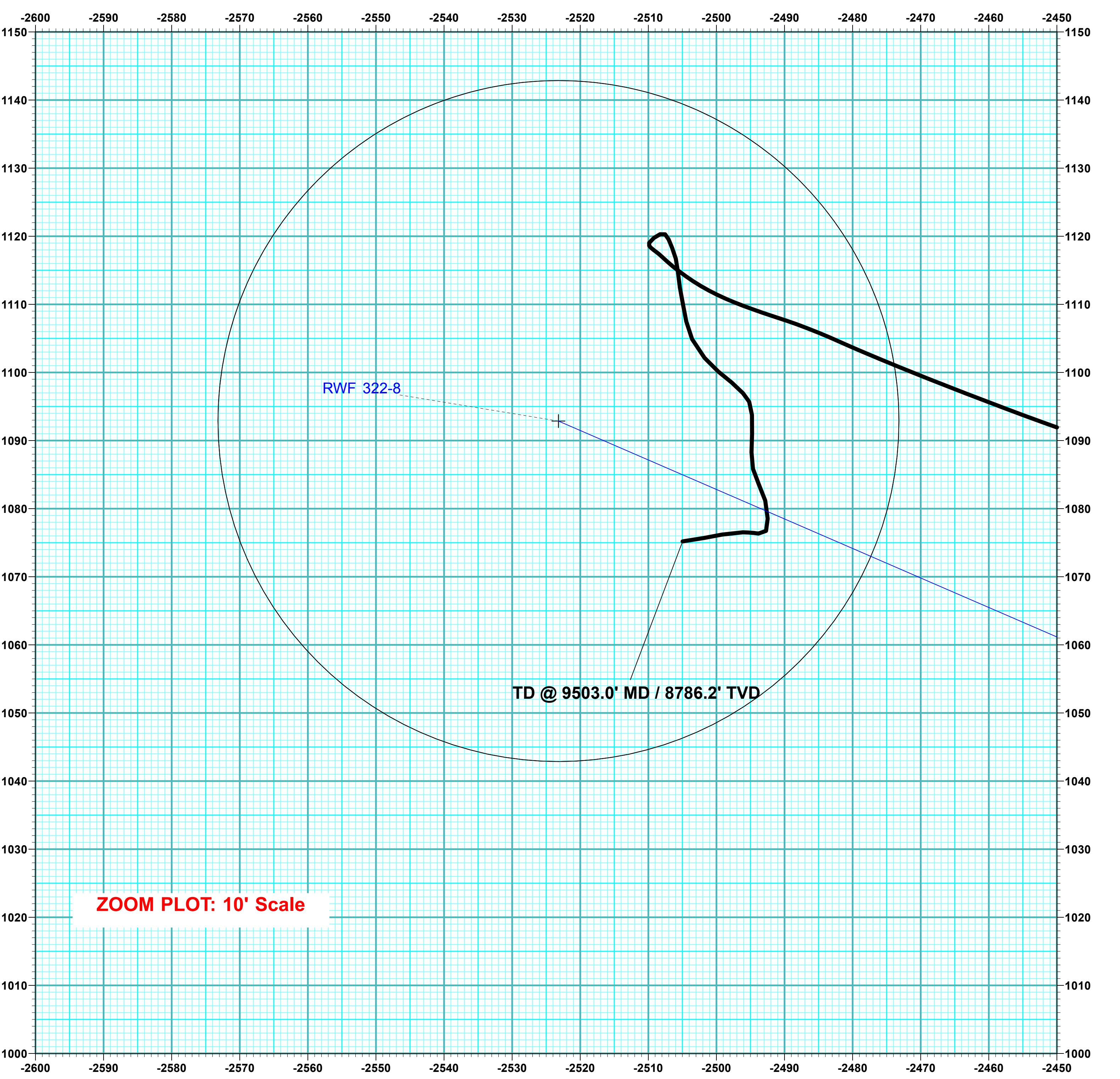
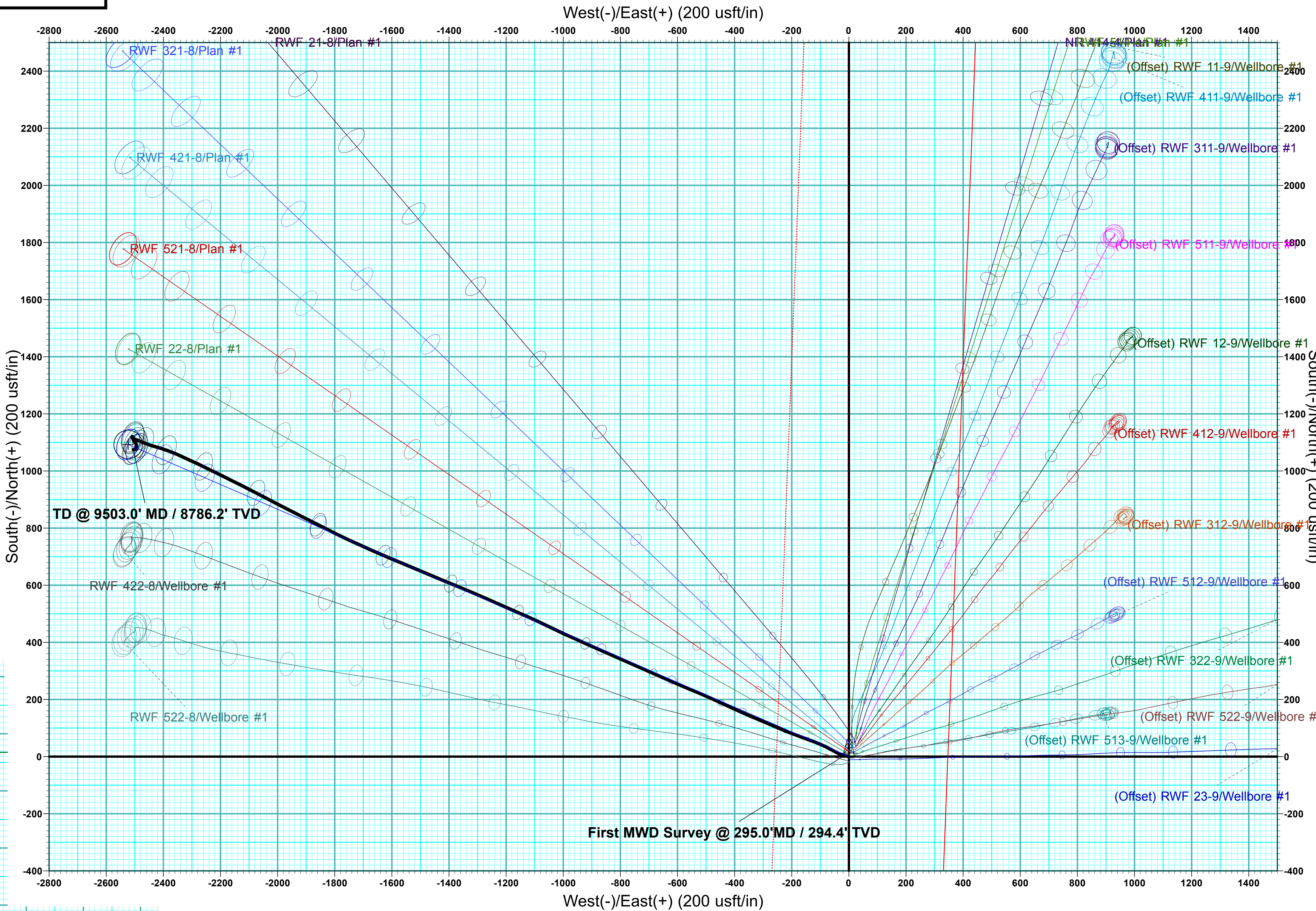
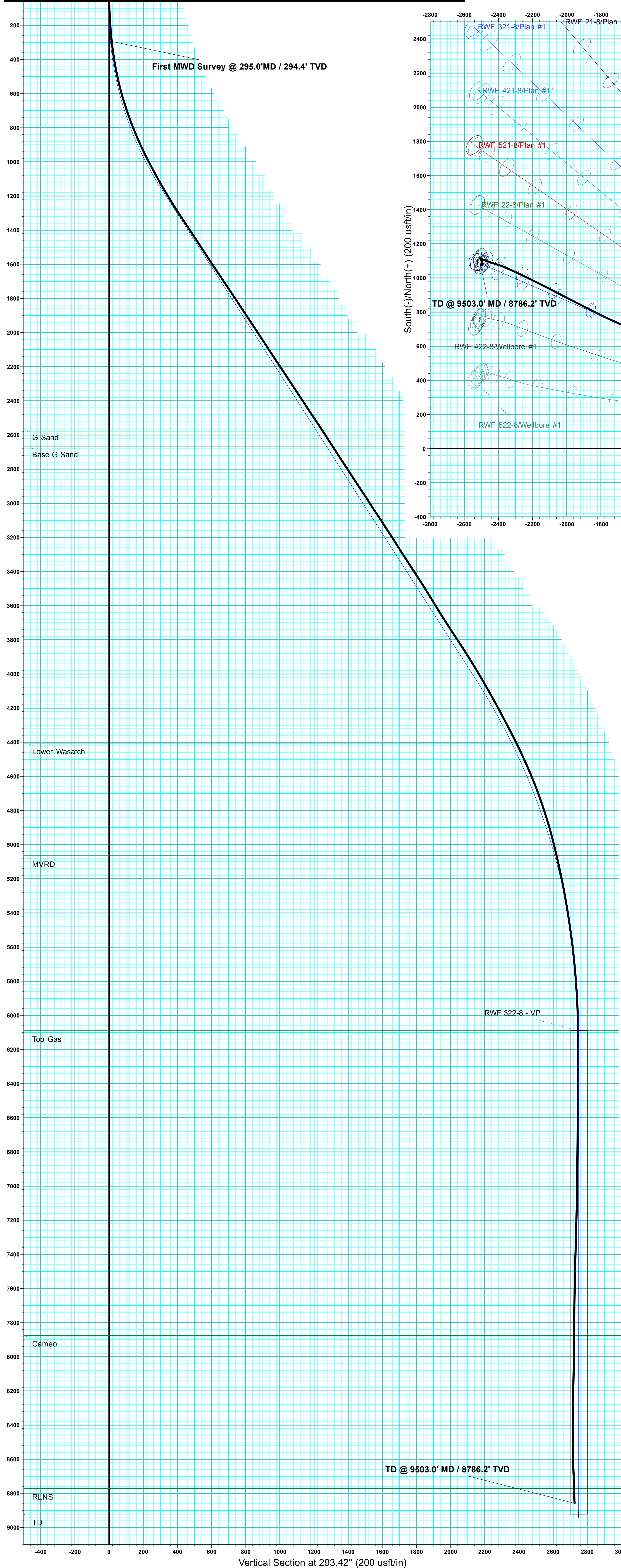
Company Name: Terra Energy Partners, LLP
RWF 322-8
Garfield County, CO
Rig: KB=24' @ 6003.6usft (H&P #318)
Created by: Chase Chambers
Date: 7:44, October 29 2020

PROJECT DETAILS: Garfield County, CO
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone
System Datum: Mean Sea Level

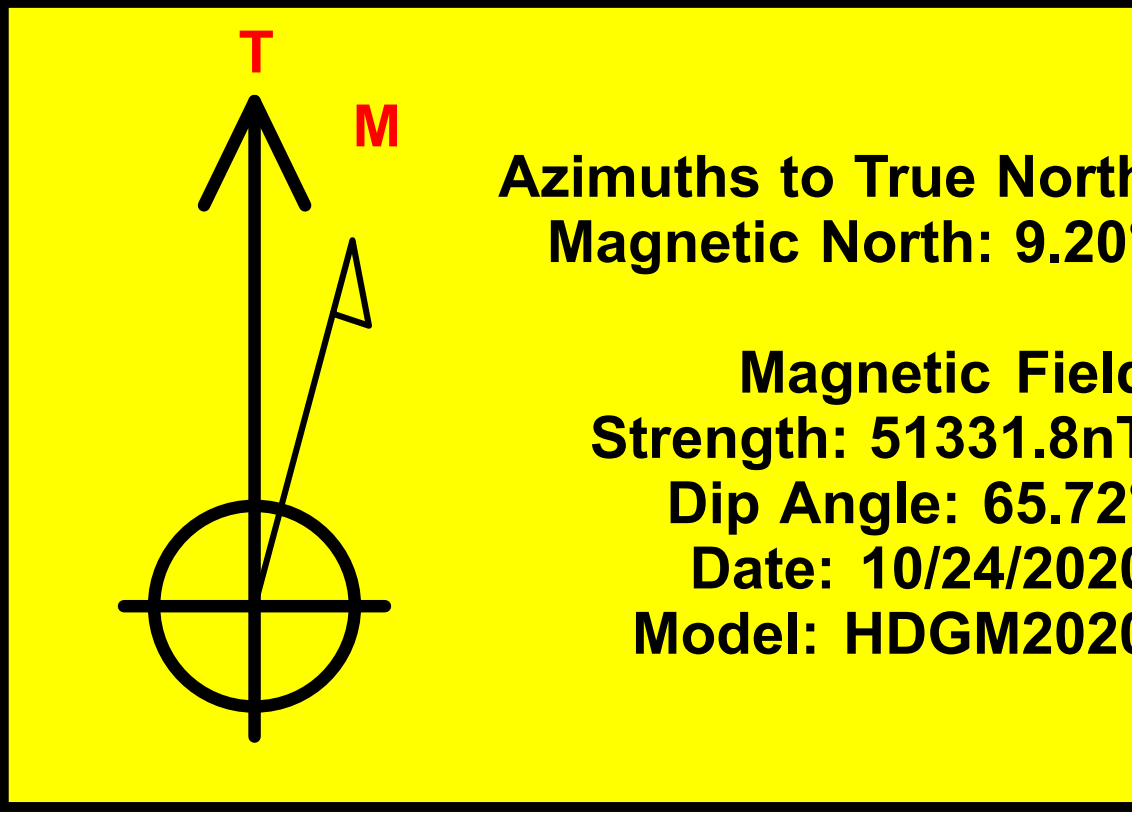


DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RWF 322-8 - VP	6090.0	1092.9	-2523.2	1631407.76	2319634.69	39.542193	-107.912796
RWF 322-8 - PBHL	8921.0	1092.9	-2523.2	1631407.76	2319634.69	39.542193	-107.912796

WELL DETAILS: RWF 322-8						
Ground Elevation: 5979.6						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	1630248.52	2322128.09	39.539193	-107.903849	



ANNOTATIONS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSecDeparture	Annotation
295.0	6.14	284.14	294.4	3.9	-15.3	15.6	15.8 First MWD Survey @ 295.0' MD / 294.4' TVD
9575.0	2.55	260.83	8858.1	1075.2	-2505.0	2725.9	2815.1 TD @ 9503.0' MD / 8786.2' TVD



DESIGN ANNOTATIONS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSecDeparture	Annotation
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.0 Start Build 3.00
1208.2	32.65	293.42	1150.3	119.9	-276.9	301.7	301.7 EOB @ 32.65" Inc / 293.42° Azm
4627.6	32.65	293.42	4029.5	853.0	-1969.5	2146.3	2146.3 Start Drop -1.50
6804.0	0.00	0.00	6090.0	1092.9	-2523.2	2749.7	2749.7 EOD @ Vertical
9635.0	0.00	0.00	8921.0	1092.9	-2523.2	2749.7	2749.7 TD @ 9635.0' MD / 8921.0' TVD



Terra Energy Partners, LLP

Garfield County, CO

Sec 8, T6S, R94W

RWF 322-8

Wellbore #1

Design: Wellbore #1

QES Survey Report

29 October, 2020



Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 322-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Well:	RWF 322-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		Sec 8, T6S, R94W						
Site Position:		Northing:	1,630,278.47	usft	Latitude:	39.539277		
From:	Lat/Long	Easting:	2,322,152.86	usft	Longitude:	-107.903764		
Position Uncertainty:	0.0	usft	Slot Radius:	13-3/16	"	Grid Convergence:	-1.52	°

Well	RWF 322-8					
Well Position	+N/-S	0.0 usft	Northing:	1,630,248.51 usft	Latitude:	39.539193
	+E/-W	0.0 usft	Easting:	2,322,128.09 usft	Longitude:	-107.903849
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,979.6 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2020	10/24/2020	9.20	65.72	51,331.80000000

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	293.42	

Survey Program	Date	10/29/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
295.0	9,575.0	QES MWD Surveys (Wellbore #1)	OWSG (REV5) MWD HDGM	OWSG MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
First MWD Survey @ 295.0'MD / 294.4' TVD									
295.0	6.14	284.14	294.4	3.9	-15.3	15.6	2.08	2.08	0.00
385.0	8.77	287.86	383.7	7.1	-26.5	27.2	2.97	2.92	4.13
475.0	11.26	297.34	472.3	13.3	-40.9	42.8	3.31	2.77	10.53
566.0	14.34	299.14	561.0	22.8	-58.6	62.8	3.41	3.38	1.98
657.0	17.22	296.01	648.6	34.2	-80.5	87.5	3.30	3.16	-3.44
747.0	19.73	292.40	733.9	45.9	-106.6	116.0	3.06	2.79	-4.01
837.0	22.17	290.43	818.0	57.6	-136.5	148.2	2.82	2.71	-2.19
928.0	24.90	289.83	901.4	70.1	-170.6	184.4	3.01	3.00	-0.66
981.0	25.89	291.13	949.3	78.0	-191.9	207.1	2.14	1.87	2.45

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 322-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Well:	RWF 322-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
1,054.0	27.73	291.77	1,014.4	90.1	-222.6	240.1	2.55	2.52	0.88
1,148.0	29.09	293.53	1,097.1	107.3	-263.8	284.8	1.70	1.45	1.87
1,242.0	30.63	292.74	1,178.6	125.7	-306.9	331.6	1.69	1.64	-0.84
1,337.0	32.21	293.35	1,259.7	145.1	-352.4	381.1	1.70	1.66	0.64
1,431.0	33.79	294.49	1,338.5	165.9	-399.2	432.3	1.81	1.68	1.21
1,525.0	33.35	294.93	1,416.9	187.6	-446.5	484.2	0.53	-0.47	0.47
1,620.0	33.27	294.05	1,496.3	209.2	-493.9	536.4	0.52	-0.08	-0.93
1,714.0	33.13	292.12	1,574.9	229.4	-541.3	587.9	1.13	-0.15	-2.05
1,808.0	34.01	293.70	1,653.2	249.6	-589.1	639.8	1.32	0.94	1.68
1,902.0	33.79	293.35	1,731.3	270.6	-637.2	692.3	0.31	-0.23	-0.37
1,997.0	33.57	293.79	1,810.3	291.6	-685.5	744.9	0.35	-0.23	0.46
2,090.0	33.35	293.61	1,887.9	312.2	-732.5	796.2	0.26	-0.24	-0.19
2,184.0	33.40	294.14	1,966.4	333.2	-779.7	847.9	0.31	0.05	0.56
2,279.0	33.40	293.88	2,045.7	354.5	-827.5	900.2	0.15	0.00	-0.27
2,373.0	33.00	293.35	2,124.4	375.1	-874.7	951.7	0.53	-0.43	-0.56
2,467.0	34.01	294.58	2,202.7	396.2	-922.1	1,003.6	1.29	1.07	1.31
2,561.0	33.06	293.79	2,281.1	417.4	-969.5	1,055.5	1.11	-1.01	-0.84
2,655.0	33.57	295.46	2,359.6	438.9	-1,016.4	1,107.1	1.12	0.54	1.78
2,749.0	33.27	295.55	2,438.1	461.2	-1,063.1	1,158.8	0.32	-0.32	0.10
2,843.0	34.01	294.40	2,516.4	483.2	-1,110.3	1,210.9	1.04	0.79	-1.22
2,938.0	32.70	293.35	2,595.7	504.4	-1,158.1	1,263.1	1.51	-1.38	-1.11
3,032.0	33.18	293.79	2,674.6	524.8	-1,204.9	1,314.2	0.57	0.51	0.47
3,126.0	32.70	293.88	2,753.5	545.5	-1,251.7	1,365.4	0.51	-0.51	0.10
3,220.0	33.35	293.35	2,832.3	566.0	-1,298.6	1,416.6	0.76	0.69	-0.56
3,314.0	33.71	292.47	2,910.7	586.2	-1,346.4	1,468.5	0.64	0.38	-0.94
3,408.0	32.61	292.38	2,989.4	605.8	-1,394.0	1,519.9	1.17	-1.17	-0.10
3,502.0	33.31	292.65	3,068.2	625.4	-1,441.2	1,571.0	0.76	0.74	0.29
3,597.0	33.49	293.09	3,147.5	645.7	-1,489.4	1,623.3	0.32	0.19	0.46
3,691.0	32.17	292.47	3,226.5	665.5	-1,536.4	1,674.3	1.45	-1.40	-0.66
3,786.0	32.83	292.82	3,306.6	685.1	-1,583.5	1,725.3	0.72	0.69	0.37
3,880.0	33.00	292.91	3,385.6	705.0	-1,630.5	1,776.4	0.19	0.18	0.10
3,974.0	33.09	294.41	3,464.3	725.5	-1,677.5	1,827.7	0.88	0.10	1.60
4,068.0	31.29	294.14	3,543.9	746.1	-1,723.1	1,877.7	1.92	-1.91	-0.29
4,162.0	31.68	295.20	3,624.1	766.6	-1,767.7	1,926.8	0.72	0.41	1.13
4,257.0	32.74	296.69	3,704.4	788.8	-1,813.3	1,977.4	1.39	1.12	1.57
4,351.0	33.53	297.22	3,783.2	812.1	-1,859.1	2,028.7	0.90	0.84	0.56
4,445.0	32.96	297.04	3,861.8	835.6	-1,904.9	2,080.1	0.62	-0.61	-0.19
4,540.0	31.51	296.87	3,942.1	858.5	-1,950.1	2,130.7	1.53	-1.53	-0.18
4,634.0	30.06	297.13	4,022.9	880.4	-1,993.0	2,178.7	1.55	-1.54	0.28
4,729.0	29.62	297.83	4,105.3	902.2	-2,034.9	2,225.8	0.59	-0.46	0.74
4,823.0	28.78	297.48	4,187.3	923.5	-2,075.5	2,271.6	0.91	-0.89	-0.37
4,918.0	27.56	296.43	4,271.1	943.8	-2,115.5	2,316.3	1.39	-1.28	-1.11
5,012.0	27.56	296.87	4,354.4	963.3	-2,154.4	2,359.8	0.22	0.00	0.47

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 322-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Well:	RWF 322-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)	
5,107.0	25.40	296.16	4,439.4	982.2	-2,192.3	2,402.1	2.30	-2.27	-0.75	
5,201.0	24.21	296.16	4,524.8	999.6	-2,227.7	2,441.4	1.27	-1.27	0.00	
5,295.0	22.37	296.34	4,611.1	1,016.0	-2,261.0	2,478.6	1.96	-1.96	0.19	
5,390.0	20.08	294.23	4,699.7	1,030.8	-2,292.1	2,512.9	2.54	-2.41	-2.22	
5,484.0	18.28	295.11	4,788.4	1,043.6	-2,320.1	2,543.8	1.94	-1.91	0.94	
5,578.0	16.66	294.41	4,878.1	1,055.5	-2,345.8	2,572.0	1.74	-1.72	-0.74	
5,672.0	14.46	291.07	4,968.6	1,065.3	-2,369.0	2,597.2	2.53	-2.34	-3.55	
5,767.0	13.14	289.22	5,060.9	1,073.1	-2,390.2	2,619.8	1.46	-1.39	-1.95	
5,861.0	12.17	287.81	5,152.6	1,079.6	-2,409.8	2,640.4	1.08	-1.03	-1.50	
5,955.0	11.07	285.26	5,244.7	1,085.0	-2,427.9	2,659.1	1.29	-1.17	-2.71	
6,049.0	9.58	288.52	5,337.2	1,089.9	-2,444.0	2,675.9	1.70	-1.59	3.47	
6,143.0	8.96	290.80	5,429.9	1,095.0	-2,458.3	2,691.0	0.77	-0.66	2.43	
6,238.0	7.95	291.86	5,523.9	1,100.0	-2,471.3	2,704.9	1.08	-1.06	1.12	
6,332.0	6.33	294.05	5,617.2	1,104.6	-2,482.1	2,716.6	1.75	-1.72	2.33	
6,425.0	5.58	287.81	5,709.7	1,108.1	-2,491.1	2,726.2	1.06	-0.81	-6.71	
6,520.0	3.91	293.26	5,804.3	1,110.7	-2,498.4	2,734.1	1.82	-1.76	5.74	
6,614.0	3.43	304.25	5,898.2	1,113.6	-2,503.7	2,740.1	0.90	-0.51	11.69	
6,708.0	2.07	312.86	5,992.0	1,116.3	-2,507.3	2,744.4	1.51	-1.45	9.16	
6,802.0	1.19	305.74	6,086.0	1,118.1	-2,509.3	2,747.0	0.96	-0.94	-7.57	
6,896.0	0.57	29.24	6,180.0	1,119.0	-2,509.9	2,747.9	1.34	-0.66	88.83	
6,990.0	0.70	55.78	6,274.0	1,119.8	-2,509.2	2,747.5	0.34	0.14	28.23	
7,084.0	0.57	63.96	6,368.0	1,120.3	-2,508.3	2,746.9	0.17	-0.14	8.70	
7,178.0	0.48	123.54	6,462.0	1,120.3	-2,507.5	2,746.2	0.56	-0.10	63.38	
7,273.0	0.66	162.02	6,557.0	1,119.5	-2,507.0	2,745.5	0.43	0.19	40.51	
7,367.0	1.01	154.25	6,651.0	1,118.3	-2,506.5	2,744.5	0.39	0.37	-8.27	
7,462.0	1.01	167.67	6,746.0	1,116.7	-2,506.0	2,743.4	0.25	0.00	14.13	
7,556.0	1.23	173.99	6,839.9	1,114.9	-2,505.7	2,742.4	0.27	0.23	6.72	
7,650.0	1.76	171.62	6,933.9	1,112.5	-2,505.4	2,741.1	0.57	0.56	-2.52	
7,744.0	1.49	167.32	7,027.9	1,109.8	-2,504.9	2,739.6	0.31	-0.29	-4.57	
7,838.0	1.45	171.01	7,121.8	1,107.5	-2,504.4	2,738.3	0.11	-0.04	3.93	
7,931.0	1.93	154.66	7,214.8	1,104.9	-2,503.6	2,736.5	0.73	0.52	-17.58	
8,026.0	2.11	139.01	7,309.7	1,102.1	-2,501.7	2,733.7	0.61	0.19	-16.47	
8,119.0	1.41	128.64	7,402.7	1,100.1	-2,499.7	2,731.0	0.82	-0.75	-11.15	
8,214.0	1.67	129.70	7,497.7	1,098.5	-2,497.7	2,728.6	0.28	0.27	1.12	
8,308.0	1.10	139.37	7,591.6	1,097.0	-2,496.1	2,726.5	0.65	-0.61	10.29	
8,402.0	0.79	149.74	7,685.6	1,095.7	-2,495.2	2,725.1	0.38	-0.33	11.03	
8,497.0	1.67	176.98	7,780.6	1,093.8	-2,494.8	2,724.0	1.09	0.93	28.67	
8,590.0	1.76	181.82	7,873.6	1,091.0	-2,494.8	2,722.9	0.18	0.10	5.20	
8,684.0	1.54	181.91	7,967.5	1,088.3	-2,494.8	2,721.9	0.23	-0.23	0.10	
8,778.0	1.45	167.23	8,061.5	1,085.9	-2,494.6	2,720.7	0.42	-0.10	-15.62	
8,873.0	1.45	151.76	8,156.4	1,083.6	-2,493.8	2,719.0	0.41	0.00	-16.28	
8,967.0	1.76	163.89	8,250.4	1,081.2	-2,492.8	2,717.2	0.49	0.33	12.90	
9,061.0	1.54	181.99	8,344.4	1,078.5	-2,492.5	2,715.8	0.60	-0.23	19.26	

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Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Well:	RWF 322-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)	
9,155.0	0.70	199.84	8,438.4	1,076.7	-2,492.7	2,715.3	0.96	-0.89	18.99	
9,249.0	1.14	279.20	8,532.3	1,076.3	-2,493.8	2,716.2	1.30	0.47	84.43	
9,344.0	1.63	271.38	8,627.3	1,076.5	-2,496.1	2,718.4	0.55	0.52	-8.23	
9,438.0	2.15	258.01	8,721.3	1,076.2	-2,499.2	2,721.0	0.72	0.55	-14.22	
9,503.0	2.55	260.83	8,786.2	1,075.7	-2,501.8	2,723.2	0.64	0.62	4.34	
TD @ 9503.0' MD / 8786.2' TVD										
9,575.0	2.55	260.83	8,858.1	1,075.2	-2,505.0	2,725.9	0.00	0.00	0.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
295.0	294.4	3.9	-15.3	First MWD Survey @ 295.0'MD / 294.4' TVD	
9,575.0	8,858.1	1,075.2	-2,505.0	TD @ 9503.0' MD / 8786.2' TVD	

Checked By: _____ Approved By: _____ Date: _____