

Project: Garfield County, CO
 Site: Sec 8, T6S, R94W
 Well: RWF 21-8
 Wellbore: Wellbore #1
 Design: Plan #2
 Latitude: 39.539277
 Longitude: -107.903764
 Ground Level: 5979.60
 KB=24' @ 6003.60usft (H&P #318)

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

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well RWF 21-8, True North
 Vertical (TVD) Reference: KB=24' @ 6003.60usft (H&P #318)
 Section (VS) Reference: Slot - (0.00N, 0.00E)
 Measured Depth Reference: KB=24' @ 6003.60usft (H&P #318)
 Calculation Method: Minimum Curvature

WELL DETAILS: RWF 21-8

	0.00	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
		0.00		1630278.47	2322152.86	39.539277	-107.903764

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

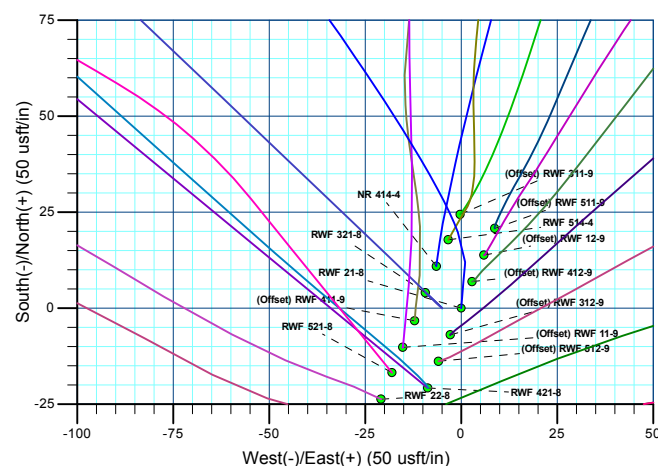
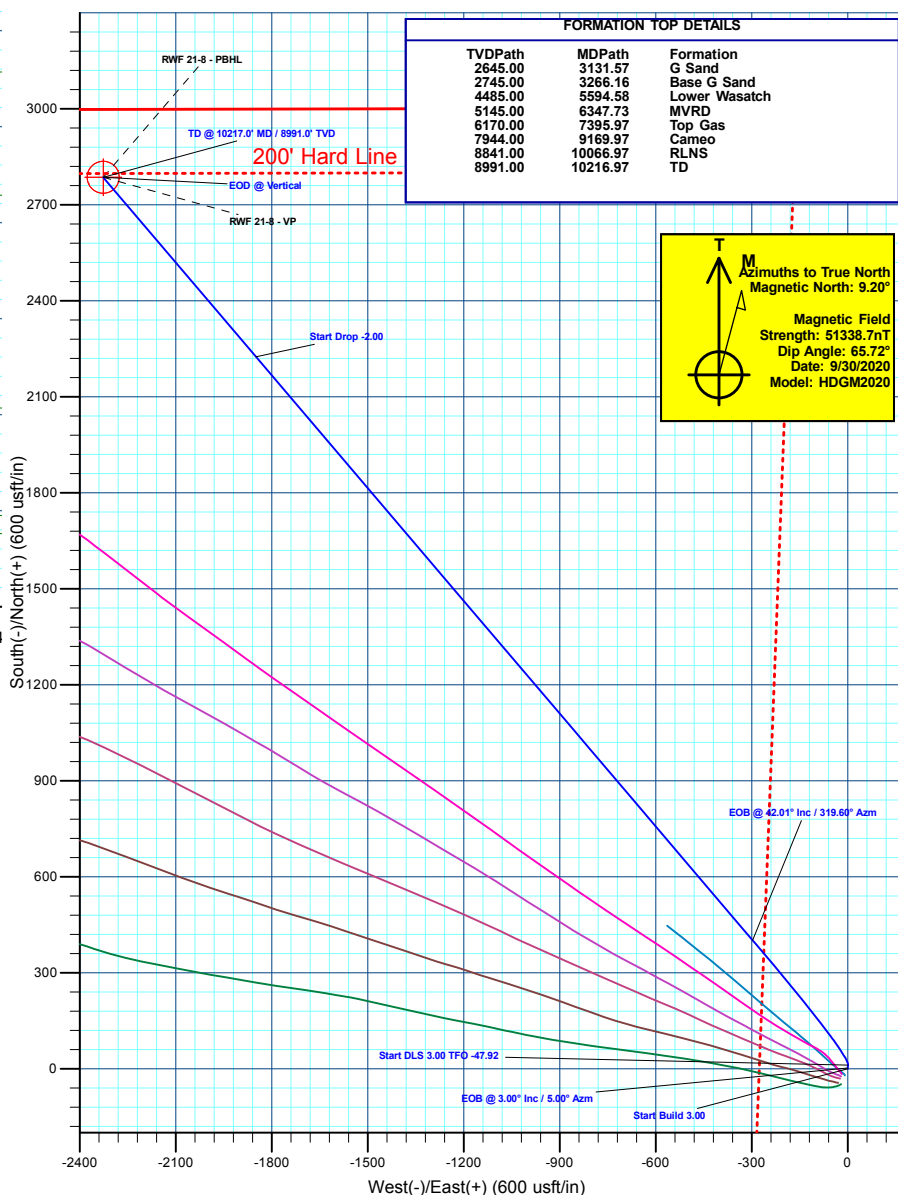
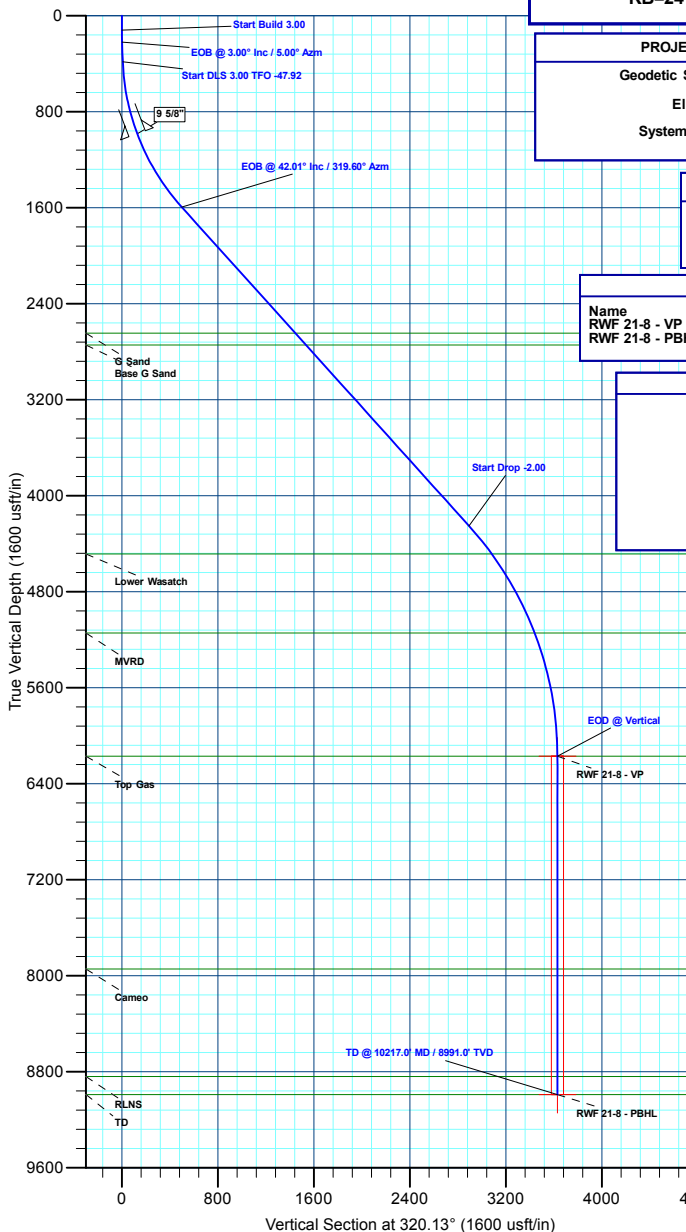
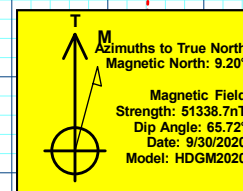
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
RWF 21-8 - VP	6170.00	2785.85	-2326.75	1633124.91	2319900.63	39.546925	-107.912015	Circle (Radius: 50.00)
RWF 21-8 - PBHL	8991.00	2785.85	-2326.75	1633124.91	2319900.63	39.546925	-107.912015	

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	Start Build 3.00
220.00	3.00	5.00	219.95	2.61	0.23	1.86	2.62	EOB @ 3.00° Inc / 5.00° Azm
385.00	3.00	5.00	384.73	11.21	0.98	7.98	11.25	Start DLS 3.00 TFO -47.92
1716.84	42.01	319.60	1593.90	401.28	-297.06	498.41	503.90	EOB @ 42.01° Inc / 319.60° Azm
5295.22	42.01	319.60	4252.53	2225.14	-1849.48	2893.40	2899.00	Start Drop -2.00
7395.97	0.00	0.00	6170.00	2785.85	-2326.75	3629.70	3635.34	EOD @ Vertical
10216.97	0.00	0.00	8991.00	2785.85	-2326.75	3629.70	3635.34	TD @ 10217.0' MD / 8991.0' TVD

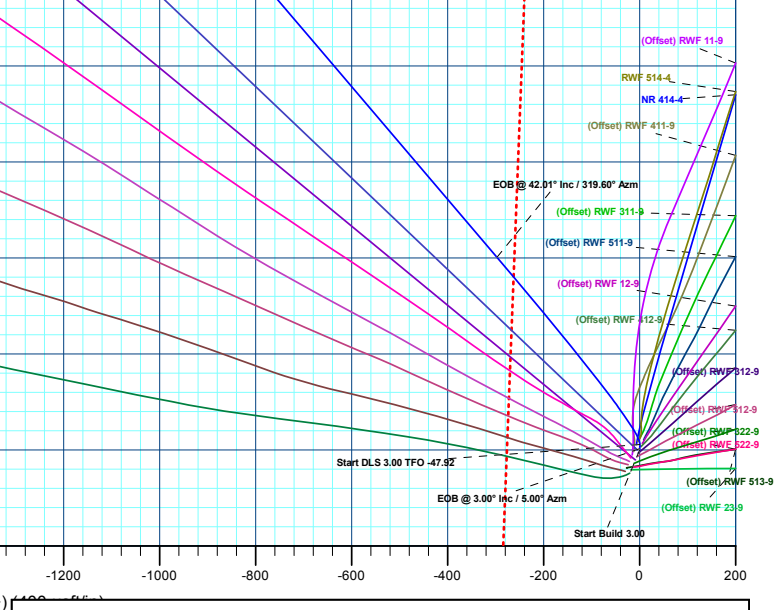
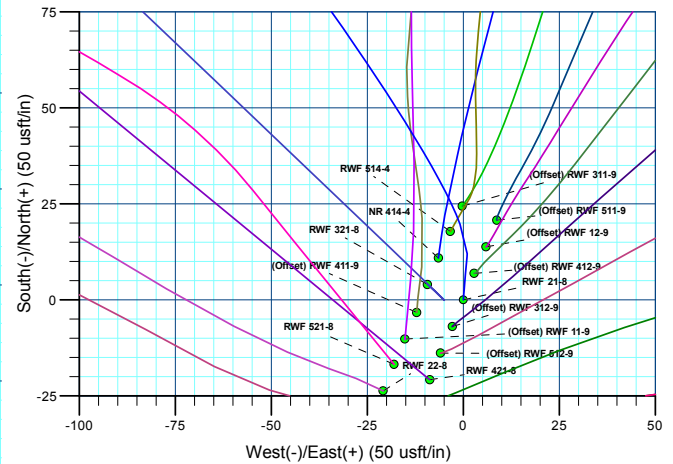
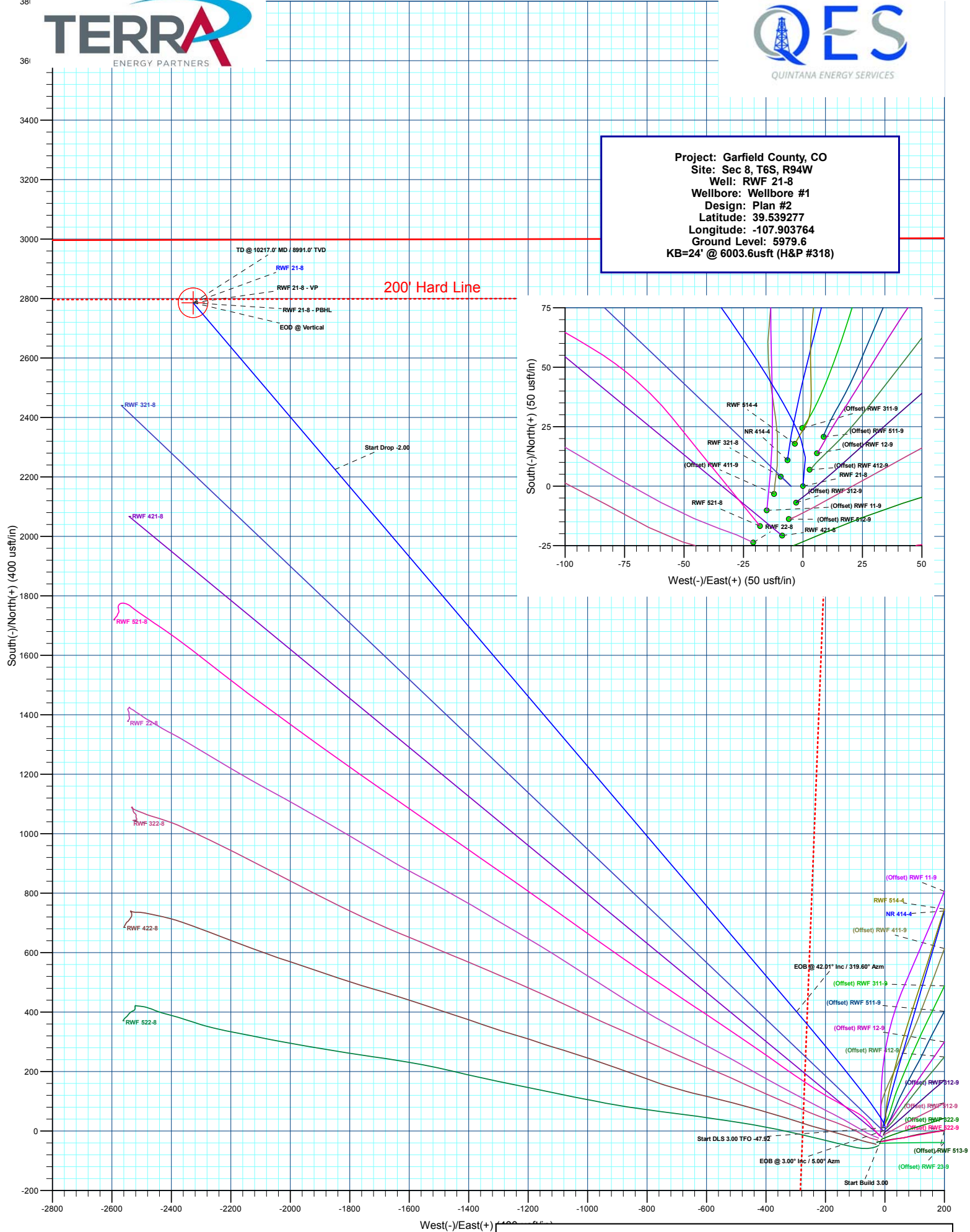
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2645.00	3131.57	G Sand
2745.00	3266.16	Base G Sand
4485.00	5594.58	Lower Wasatch
5145.00	6347.73	MVRD
6170.00	7395.97	Top Gas
7944.00	9169.97	Cameo
8841.00	10066.97	RLNS
8991.00	10216.97	TD



Plan: Plan #2 (RWF 21-8/Wellbore #1)

Project: Garfield County, CO
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 Wellbore: Wellbore #1
 Design: Plan #2
 Latitude: 39.539277
 Longitude: -107.903764
 Ground Level: 5979.6
 KB=24' @ 6003.6usft (H&P #318)



Plan: Plan #2 (RWF 21-8/Wellbore #1)

Created By: Chase Chambers Date: 14:00, November 09 2020



Terra Energy Partners, LLP

Garfield County, CO

Sec 8, T6S, R94W

RWF 21-8

Wellbore #1

Plan: Plan #2

QES Well Planning Report

10 November, 2020



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well RWF 21-8
Company:	Terra Energy Partners, LLP	TVD Reference:	KB=24' @ 6003.60usft (H&P #318)
Project:	Garfield County, CO	MD Reference:	KB=24' @ 6003.60usft (H&P #318)
Site:	Sec 8, T6S, R94W	North Reference:	True
Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

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:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: -1.52 °

Well	RWF 21-8			
Well Position	+N/-S	0.00 usft	Northing:	1,630,278.47 usft
	+E/-W	0.00 usft	Easting:	2,322,152.86 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	Ground Level: 5,979.60 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2020	9/30/2020	9.20	65.72	51,338.70000000

Design	Plan #2			
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	320.13

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	
220.00	3.00	5.00	219.95	2.61	0.23	3.00	3.00	0.00	5.00	
385.00	3.00	5.00	384.73	11.21	0.98	0.00	0.00	0.00	0.00	
1,716.84	42.01	319.60	1,593.90	401.28	-297.06	3.00	2.93	-3.41	-47.92	
5,295.22	42.01	319.60	4,252.53	2,225.14	-1,849.48	0.00	0.00	0.00	0.00	
7,395.97	0.00	0.00	6,170.00	2,785.85	-2,326.75	2.00	-2.00	0.00	180.00	RWF 21-8 - VP
10,216.97	0.00	0.00	8,991.00	2,785.85	-2,326.75	0.00	0.00	0.00	0.00	RWF 21-8 - PBHL

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well RWF 21-8
Company:	Terra Energy Partners, LLP	TVD Reference:	KB=24' @ 6003.60usft (H&P #318)
Project:	Garfield County, CO	MD Reference:	KB=24' @ 6003.60usft (H&P #318)
Site:	Sec 8, T6S, R94W	North Reference:	True
Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

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
Start Build 3.00									
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	2.40	5.00	199.98	1.67	0.15	1.19	3.00	3.00	0.00
EOB @ 3.00° Inc / 5.00° Azm									
220.00	3.00	5.00	219.95	2.61	0.23	1.86	3.00	3.00	0.00
300.00	3.00	5.00	299.84	6.78	0.59	4.82	0.00	0.00	0.00
Start DLS 3.00 TFO -47.92									
385.00	3.00	5.00	384.73	11.21	0.98	7.98	0.00	0.00	0.00
400.00	3.32	359.22	399.71	12.04	1.01	8.59	3.00	2.12	-38.53
500.00	5.90	339.23	499.38	19.73	-0.85	15.69	3.00	2.58	-19.99
600.00	8.75	331.76	598.56	31.24	-6.27	28.00	3.00	2.85	-7.48
700.00	11.67	327.97	696.96	46.52	-15.24	45.47	3.00	2.93	-3.79
800.00	14.63	325.69	794.33	65.53	-27.73	68.07	3.00	2.96	-2.28
900.00	17.60	324.16	890.39	88.22	-43.70	95.72	3.00	2.97	-1.53
9 5/8"									
1,000.00	20.58	323.07	984.88	114.53	-63.11	128.36	3.00	2.98	-1.10
1,100.00	23.56	322.24	1,077.55	144.38	-85.92	165.89	3.00	2.98	-0.83
1,200.00	26.55	321.59	1,168.13	177.70	-112.05	208.21	3.00	2.99	-0.65
1,300.00	29.54	321.06	1,256.38	214.39	-141.44	255.21	3.00	2.99	-0.53
1,400.00	32.53	320.62	1,342.05	254.35	-174.00	306.76	3.00	2.99	-0.44
1,500.00	35.52	320.24	1,424.92	297.48	-209.64	362.71	3.00	2.99	-0.37
1,600.00	38.52	319.92	1,504.76	343.65	-248.28	422.91	3.00	2.99	-0.32
1,700.00	41.51	319.64	1,581.34	392.73	-289.79	487.19	3.00	2.99	-0.28
EOB @ 42.01° Inc / 319.60° Azm									
1,716.84	42.01	319.60	1,593.90	401.28	-297.06	498.41	3.00	2.99	-0.26
1,800.00	42.01	319.60	1,655.68	443.66	-333.14	554.07	0.00	0.00	0.00
1,900.00	42.01	319.60	1,729.98	494.63	-376.52	621.00	0.00	0.00	0.00
2,000.00	42.01	319.60	1,804.28	545.60	-419.90	687.93	0.00	0.00	0.00
2,100.00	42.01	319.60	1,878.57	596.57	-463.29	754.86	0.00	0.00	0.00
2,200.00	42.01	319.60	1,952.87	647.54	-506.67	821.79	0.00	0.00	0.00
2,300.00	42.01	319.60	2,027.17	698.51	-550.05	888.72	0.00	0.00	0.00
2,400.00	42.01	319.60	2,101.47	749.48	-593.44	955.65	0.00	0.00	0.00
2,500.00	42.01	319.60	2,175.76	800.45	-636.82	1,022.58	0.00	0.00	0.00
2,600.00	42.01	319.60	2,250.06	851.41	-680.20	1,089.50	0.00	0.00	0.00
2,700.00	42.01	319.60	2,324.36	902.38	-723.59	1,156.43	0.00	0.00	0.00
2,800.00	42.01	319.60	2,398.65	953.35	-766.97	1,223.36	0.00	0.00	0.00
2,900.00	42.01	319.60	2,472.95	1,004.32	-810.35	1,290.29	0.00	0.00	0.00
3,000.00	42.01	319.60	2,547.25	1,055.29	-853.74	1,357.22	0.00	0.00	0.00
3,100.00	42.01	319.60	2,621.54	1,106.26	-897.12	1,424.15	0.00	0.00	0.00
G Sand									
3,131.57	42.01	319.60	2,645.00	1,122.35	-910.82	1,445.28	0.00	0.00	0.00
3,200.00	42.01	319.60	2,695.84	1,157.23	-940.50	1,491.08	0.00	0.00	0.00
Base G Sand									
3,266.16	42.01	319.60	2,745.00	1,190.95	-969.21	1,535.37	0.00	0.00	0.00
3,300.00	42.01	319.60	2,770.14	1,208.20	-983.89	1,558.01	0.00	0.00	0.00
3,400.00	42.01	319.60	2,844.44	1,259.17	-1,027.27	1,624.94	0.00	0.00	0.00
3,500.00	42.01	319.60	2,918.73	1,310.13	-1,070.65	1,691.87	0.00	0.00	0.00
3,600.00	42.01	319.60	2,993.03	1,361.10	-1,114.04	1,758.80	0.00	0.00	0.00
3,700.00	42.01	319.60	3,067.33	1,412.07	-1,157.42	1,825.73	0.00	0.00	0.00
3,800.00	42.01	319.60	3,141.62	1,463.04	-1,200.80	1,892.66	0.00	0.00	0.00
3,900.00	42.01	319.60	3,215.92	1,514.01	-1,244.19	1,959.59	0.00	0.00	0.00

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Site:	Sec 8, T6S, R94W	North Reference:	True
Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

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)
4,000.00	42.01	319.60	3,290.22	1,564.98	-1,287.57	2,026.52	0.00	0.00	0.00
4,100.00	42.01	319.60	3,364.51	1,615.95	-1,330.96	2,093.45	0.00	0.00	0.00
4,200.00	42.01	319.60	3,438.81	1,666.92	-1,374.34	2,160.38	0.00	0.00	0.00
4,300.00	42.01	319.60	3,513.11	1,717.89	-1,417.72	2,227.31	0.00	0.00	0.00
4,400.00	42.01	319.60	3,587.41	1,768.85	-1,461.11	2,294.24	0.00	0.00	0.00
4,500.00	42.01	319.60	3,661.70	1,819.82	-1,504.49	2,361.17	0.00	0.00	0.00
4,600.00	42.01	319.60	3,736.00	1,870.79	-1,547.87	2,428.09	0.00	0.00	0.00
4,700.00	42.01	319.60	3,810.30	1,921.76	-1,591.26	2,495.02	0.00	0.00	0.00
4,800.00	42.01	319.60	3,884.59	1,972.73	-1,634.64	2,561.95	0.00	0.00	0.00
4,900.00	42.01	319.60	3,958.89	2,023.70	-1,678.02	2,628.88	0.00	0.00	0.00
5,000.00	42.01	319.60	4,033.19	2,074.67	-1,721.41	2,695.81	0.00	0.00	0.00
5,100.00	42.01	319.60	4,107.49	2,125.64	-1,764.79	2,762.74	0.00	0.00	0.00
5,200.00	42.01	319.60	4,181.78	2,176.61	-1,808.17	2,829.67	0.00	0.00	0.00
Start Drop -2.00									
5,295.22	42.01	319.60	4,252.53	2,225.14	-1,849.48	2,893.40	0.00	0.00	0.00
5,300.00	41.92	319.60	4,256.08	2,227.57	-1,851.55	2,896.60	2.00	-2.00	0.00
5,400.00	39.92	319.60	4,331.64	2,277.45	-1,894.01	2,962.09	2.00	-2.00	0.00
5,500.00	37.92	319.60	4,409.44	2,325.28	-1,934.72	3,024.91	2.00	-2.00	0.00
Lower Wasatch									
5,594.58	36.03	319.60	4,485.00	2,368.60	-1,971.59	3,081.79	2.00	-2.00	0.00
5,600.00	35.92	319.60	4,489.38	2,371.02	-1,973.66	3,084.97	2.00	-2.00	0.00
5,700.00	33.92	319.60	4,571.38	2,414.61	-2,010.76	3,142.21	2.00	-2.00	0.00
5,800.00	31.92	319.60	4,655.32	2,455.99	-2,045.98	3,196.55	2.00	-2.00	0.00
5,900.00	29.92	319.60	4,741.10	2,495.12	-2,079.28	3,247.93	2.00	-2.00	0.00
6,000.00	27.92	319.60	4,828.63	2,531.94	-2,110.63	3,296.28	2.00	-2.00	0.00
6,100.00	25.92	319.60	4,917.79	2,566.42	-2,139.97	3,341.55	2.00	-2.00	0.00
6,200.00	23.92	319.60	5,008.47	2,598.50	-2,167.28	3,383.68	2.00	-2.00	0.00
6,300.00	21.92	319.60	5,100.57	2,628.15	-2,192.52	3,422.62	2.00	-2.00	0.00
MVRD									
6,347.73	20.96	319.60	5,145.00	2,641.44	-2,203.83	3,440.07	2.00	-2.00	0.00
6,400.00	19.92	319.60	5,193.98	2,655.34	-2,215.66	3,458.32	2.00	-2.00	0.00
6,500.00	17.92	319.60	5,288.57	2,680.03	-2,236.68	3,490.74	2.00	-2.00	0.00
6,600.00	15.92	319.60	5,384.24	2,702.19	-2,255.54	3,519.84	2.00	-2.00	0.00
6,700.00	13.92	319.60	5,480.86	2,721.80	-2,272.23	3,545.59	2.00	-2.00	0.00
6,800.00	11.92	319.60	5,578.32	2,738.82	-2,286.72	3,567.94	2.00	-2.00	0.00
6,900.00	9.92	319.60	5,676.51	2,753.24	-2,298.99	3,586.88	2.00	-2.00	0.00
7,000.00	7.92	319.60	5,775.29	2,765.05	-2,309.04	3,602.38	2.00	-2.00	0.00
7,100.00	5.92	319.60	5,874.56	2,774.22	-2,316.85	3,614.43	2.00	-2.00	0.00
7,200.00	3.92	319.60	5,974.19	2,780.75	-2,322.41	3,623.01	2.00	-2.00	0.00
7,300.00	1.92	319.60	6,074.05	2,784.63	-2,325.71	3,628.10	2.00	-2.00	0.00
EOD @ Vertical - Top Gas									
7,395.97	0.00	0.00	6,170.00	2,785.85	-2,326.75	3,629.70	2.00	-2.00	0.00
7,400.00	0.00	0.00	6,174.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
7,500.00	0.00	0.00	6,274.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
7,600.00	0.00	0.00	6,374.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
7,700.00	0.00	0.00	6,474.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
7,800.00	0.00	0.00	6,574.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
7,900.00	0.00	0.00	6,674.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
8,000.00	0.00	0.00	6,774.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
8,100.00	0.00	0.00	6,874.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
8,200.00	0.00	0.00	6,974.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
8,300.00	0.00	0.00	7,074.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
8,400.00	0.00	0.00	7,174.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well RWF 21-8
Company:	Terra Energy Partners, LLP	TVD Reference:	KB=24' @ 6003.60usft (H&P #318)
Project:	Garfield County, CO	MD Reference:	KB=24' @ 6003.60usft (H&P #318)
Site:	Sec 8, T6S, R94W	North Reference:	True
Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

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)
8,500.00	0.00	0.00	7,274.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
8,600.00	0.00	0.00	7,374.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
8,700.00	0.00	0.00	7,474.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
8,800.00	0.00	0.00	7,574.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
8,900.00	0.00	0.00	7,674.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,000.00	0.00	0.00	7,774.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,100.00	0.00	0.00	7,874.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
Cameo									
9,169.97	0.00	0.00	7,944.00	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,200.00	0.00	0.00	7,974.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,300.00	0.00	0.00	8,074.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,400.00	0.00	0.00	8,174.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,500.00	0.00	0.00	8,274.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,600.00	0.00	0.00	8,374.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,700.00	0.00	0.00	8,474.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,800.00	0.00	0.00	8,574.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
9,900.00	0.00	0.00	8,674.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
10,000.00	0.00	0.00	8,774.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
RLNS									
10,066.97	0.00	0.00	8,841.00	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
10,100.00	0.00	0.00	8,874.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
10,200.00	0.00	0.00	8,974.03	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00
TD @ 10217.0' MD / 8991.0' TVD - TD									
10,216.97	0.00	0.00	8,991.00	2,785.85	-2,326.75	3,629.70	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RWF 21-8 - VP	0.00	0.00	6,170.00	2,785.85	-2,326.75	1,633,124.91	2,319,900.63	39.546925	-107.912015
- plan hits target center									
- Point									
RWF 21-8 - PBHL	0.00	0.00	8,991.00	2,785.85	-2,326.75	1,633,124.91	2,319,900.63	39.546925	-107.912015
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,000.00	984.88	9 5/8"		9-5/8	12-1/4

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well RWF 21-8
Company:	Terra Energy Partners, LLP	TVD Reference:	KB=24' @ 6003.60usft (H&P #318)
Project:	Garfield County, CO	MD Reference:	KB=24' @ 6003.60usft (H&P #318)
Site:	Sec 8, T6S, R94W	North Reference:	True
Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,131.57	2,645.00	G Sand				
3,266.16	2,745.00	Base G Sand				
5,594.58	4,485.00	Lower Wasatch				
6,347.73	5,145.00	MVRD				
7,395.97	6,170.00	Top Gas				
9,169.97	7,944.00	Cameo				
10,066.97	8,841.00	RLNS				
10,216.97	8,991.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.00	Start Build 3.00	
220.00	219.95	2.61	0.23	EOB @ 3.00° Inc / 5.00° Azm	
385.00	384.73	11.21	0.98	Start DLS 3.00 TFO -47.92	
1,716.84	1,593.90	401.28	-297.06	EOB @ 42.01° Inc / 319.60° Azm	
5,295.22	4,252.53	2,225.14	-1,849.48	Start Drop -2.00	
7,395.97	6,170.00	2,785.85	-2,326.75	EOD @ Vertical	
10,216.97	8,991.00	2,785.85	-2,326.75	TD @ 10217.0' MD / 8991.0' TVD	



Terra Energy Partners, LLP

Garfield County, CO

Sec 8, T6S, R94W

RWF 21-8

Wellbore #1

Plan #2

QES Anticollision Report

09 November, 2020



Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum separation factor of 6.00	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	11/9/2020	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	10,217.0	Plan #2 (Wellbore #1)	OWSG (REV5) MWD HDGM	OWSG MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 8, T6S, R94W						
(Offset) RWF 11-9 - Wellbore #1 - Wellbore #1	399.9	401.1	13.9	10.8	4.380	CC, ES
(Offset) RWF 11-9 - Wellbore #1 - Wellbore #1	600.0	598.4	25.0	16.0	2.776	SF
(Offset) RWF 12-9 - Wellbore #1 - Wellbore #1						Out of range
(Offset) RWF 23-9 - Wellbore #1 - Wellbore #1						Out of range
(Offset) RWF 311-9 - Wellbore #1 - Wellbore #1	300.0	297.9	27.5	22.4	5.435	CC, ES
(Offset) RWF 311-9 - Wellbore #1 - Wellbore #1	400.0	395.9	34.7	27.8	5.015	SF
(Offset) RWF 312-9 - Wellbore #1 - Wellbore #1	200.0	200.7	5.8	3.7	2.721	CC, ES, SF
(Offset) RWF 322-9 - Wellbore #1 - Wellbore #1						Out of range
(Offset) RWF 411-9 - Wellbore #1 - Wellbore #1	300.0	300.0	13.5	10.8	5.088	CC, ES, SF
(Offset) RWF 412-9 - Wellbore #1 - Wellbore #1	200.0	200.0	8.5	6.6	4.441	CC, ES, SF
(Offset) RWF 511-9 - Wellbore #1 - Wellbore #1						Out of range
(Offset) RWF 512-9 - Wellbore #1 - Wellbore #1	300.0	300.9	15.7	12.7	5.271	CC, ES, SF
(Offset) RWF 513-9 - Wellbore #1 - Wellbore #1						Out of range
(Offset) RWF 522-9 - Wellbore #1 - Wellbore #1						Out of range
NR 414-4 - Wellbore #1 - Plan #3	200.0	199.4	13.1	10.1	4.412	CC, ES
NR 414-4 - Wellbore #1 - Plan #3	300.0	298.6	16.2	11.7	3.613	SF
RWF 22-8 - Wellbore #1 - Wellbore #1						Out of range
RWF 321-8 - Wellbore #1 - Plan #2	249.0	249.1	7.1	4.6	2.872	CC, ES
RWF 321-8 - Wellbore #1 - Plan #2	500.0	500.1	17.8	10.2	2.349	SF
RWF 322-8 - Wellbore #1 - Wellbore #1						Out of range
RWF 421-8 - Wellbore #1 - Plan #2	2,200.0	2,180.8	199.8	166.0	5.904	CC, ES
RWF 421-8 - Wellbore #1 - Plan #2	5,000.0	4,957.7	538.7	433.3	5.112	SF
RWF 422-8 - Wellbore #1 - Wellbore #1						Out of range
RWF 514-4 - Wellbore #1 - Plan #2	391.7	390.8	15.6	11.5	3.754	CC, ES
RWF 514-4 - Wellbore #1 - Plan #2	500.0	497.9	18.1	11.6	2.777	SF
RWF 521-8 - Wellbore #1 - Wellbore #1	300.0	299.4	30.9	25.2	5.481	CC, ES
RWF 521-8 - Wellbore #1 - Wellbore #1	500.0	497.0	45.5	36.3	4.959	SF
RWF 522-8 - Wellbore #1 - Wellbore #1						Out of range

Offset Design	Sec 8, T6S, R94W - (Offset) RWF 11-9 - Wellbore #1 - Wellbore #1										Offset Site Error:	0.0 usft
Survey Program:	68-GYRO-NS, 427-OWSG (REV5) MWD HDGM Standard										Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Sec 8, T6S, R94W - (Offset) RWF 11-9 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 68-GYRO-NS, 427-OWSG (REV5) MWD HDGM Standard												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning	
399.9	399.6	401.1	399.9	2.3	1.6	-84.16	13.5	-13.1	13.9	10.8	4.380	CC, ES	
400.0	399.7	401.2	400.0	2.3	1.6	-83.23	13.5	-13.1	14.2	11.0	4.457		
500.0	499.4	500.1	497.2	3.1	3.3	-23.70	31.8	-12.8	17.1	11.6	3.114		
600.0	598.6	598.4	592.9	4.6	4.5	11.26	54.4	-13.2	25.0	16.0	2.776	SF	
700.0	697.0	696.2	686.9	5.9	5.3	33.46	81.0	-13.5	36.1	25.2	3.307		
800.0	794.3	793.0	779.0	7.0	6.0	49.71	110.8	-12.9	50.2	38.5	4.320		
900.0	890.4	888.0	868.1	8.0	6.6	61.39	143.6	-11.7	67.8	56.0	5.715		

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Sec 8, T6S, R94W - (Offset) RWF 311-9 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 149-OWSG (REV5) MWD HDGM Standard												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning	
300.0	299.8	297.9	297.6	1.9	3.3	4.90	33.7	5.3	27.5	22.4	5.435	CC, ES	
400.0	399.7	395.9	394.8	2.3	4.8	16.34	45.1	10.3	34.7	27.8	5.015	SF	
500.0	499.4	493.0	490.3	3.1	5.9	42.40	61.5	16.3	46.2	37.3	5.191		
600.0	598.6	589.4	584.1	4.6	6.8	56.36	82.5	22.9	60.9	50.2	5.679		

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Sec 8, T6S, R94W - (Offset) RWF 312-9 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 68-GYRO-NS, 704-OWSG (REV5) MWD HDGM Standard												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning	
197.2	197.2	197.9	197.8	1.5	0.6	173.30	-4.2	0.4	6.2	4.1	2.973		
200.0	200.0	200.7	200.6	1.5	0.6	171.42	-4.1	0.5	5.8	3.7	2.721	CC, ES, SF	
300.0	299.8	300.5	300.0	1.9	1.2	119.22	1.8	7.9	8.8	6.2	3.322		
400.0	399.7	399.7	398.2	2.3	1.8	94.52	10.8	18.1	17.3	14.0	5.333		

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design	Sec 8, T6S, R94W - (Offset) RWF 411-9 - Wellbore #1 - Wellbore #1										Offset Site Error:	0.0 usft
Survey Program:	99-GYRO-NS, 698-OWSG (REV5) MWD HDGM Standard										Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
300.0	299.8	300.0	299.2	1.9	1.2	-59.65	14.5	-10.4	13.5	10.8	5.088	CC, ES, SF

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design	Sec 8, T6S, R94W - (Offset) RWF 412-9 - Wellbore #1 - Wellbore #1										Offset Site Error:	0.0 usft
Survey Program:	100-GYRO-NS, 980-OWSG (REV5) MWD HDGM Standard										Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
200.0	200.0	200.0	200.0	1.5	0.5	27.37	8.9	4.7	8.5	6.6	4.441	CC, ES, SF
300.0	299.8	299.5	299.2	1.9	1.0	47.10	13.6	9.5	11.3	8.8	4.531	

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design	Sec 8, T6S, R94W - (Offset) RWF 512-9 - Wellbore #1 - Wellbore #1										Offset Site Error:	0.0 usft
Survey Program:	70-GYRO-NS, 699-OWSG (REV5) MWD HDGM Standard										Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
300.0	299.8	300.9	300.0	1.9	1.3	141.06	-6.2	9.3	15.7	12.7	5.271	CC, ES, SF

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Sec 8, T6S, R94W - NR 414-4 - Wellbore #1 - Plan #3												Offset Site Error:	0.0 usft
Survey Program: 0-OWSG (REV5) MWD HDGM Standard												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning	
200.0	200.0	199.4	199.4	1.5	1.8	-33.93	13.1	-6.2	13.1	10.1	4.412	CC, ES	
300.0	299.8	298.6	298.1	1.9	2.9	-24.67	21.9	-4.8	16.2	11.7	3.613	SF	
400.0	399.7	396.8	395.1	2.3	4.5	-5.32	37.1	-1.7	25.6	19.0	3.870		
500.0	499.4	493.4	489.2	3.1	6.5	26.47	58.1	3.4	40.0	30.4	4.174		
600.0	598.6	588.0	579.7	4.6	8.0	43.67	84.6	10.2	58.9	46.7	4.810		
700.0	697.0	680.0	665.9	5.9	9.2	54.73	115.7	18.5	83.0	69.2	5.996		

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program:												Offset Well Error:	0.0 usft
Sec 8, T6S, R94W - RWF 321-8 - Wellbore #1 - Plan #2													
0-OWSG (REV5) MWD HDGM Standard													
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
200.0	200.0	200.3	200.3	1.5	1.5	-86.90	2.9	-8.1	8.3	6.0	3.539		
249.0	248.9	249.1	249.0	1.7	1.6	-116.89	1.2	-6.3	7.1	4.6	2.872	CC, ES	
300.0	299.8	300.0	299.8	1.9	1.8	-146.29	-0.1	-4.9	8.8	5.8	2.969		
400.0	399.7	400.0	399.8	2.3	3.2	-152.20	0.1	-5.1	13.4	8.0	2.506		
500.0	499.4	500.1	499.8	3.1	4.7	-131.85	4.0	-9.0	17.8	10.2	2.349	SF	
600.0	598.6	600.3	599.4	4.6	4.9	-123.86	11.4	-16.8	22.5	13.6	2.522		
700.0	697.0	700.5	698.3	5.9	6.1	-119.52	22.4	-28.3	27.4	17.6	2.797		
800.0	794.3	800.8	796.3	7.0	7.1	-116.67	37.0	-43.6	32.7	22.1	3.088		
900.0	890.4	901.1	893.1	8.0	8.0	-114.58	55.2	-62.6	38.2	26.8	3.368		
1,000.0	984.9	1,001.5	988.5	8.8	8.9	-112.92	76.8	-85.2	43.9	31.8	3.620		
1,100.0	1,077.5	1,101.9	1,082.1	9.7	9.6	-111.55	101.8	-111.5	49.9	36.9	3.833		
1,200.0	1,168.1	1,202.3	1,173.7	10.4	10.4	-110.37	130.2	-141.3	56.0	42.0	3.997		
1,300.0	1,256.4	1,302.8	1,263.0	11.1	11.0	-109.33	162.0	-174.6	62.4	47.2	4.106		
1,400.0	1,342.1	1,403.3	1,349.9	11.8	11.7	-108.40	196.9	-211.3	69.0	52.4	4.161		
1,500.0	1,424.9	1,503.9	1,434.0	12.4	12.3	-107.55	234.9	-251.2	75.7	57.5	4.165		
1,600.0	1,504.8	1,604.5	1,515.1	13.0	12.8	-106.77	276.0	-294.3	82.5	62.5	4.126		
1,700.0	1,581.3	1,705.2	1,593.0	13.6	13.4	-106.04	319.9	-340.5	89.5	67.4	4.055		
1,800.0	1,655.7	1,805.2	1,668.0	13.9	13.6	-105.58	365.5	-388.4	96.5	72.2	3.979		
1,900.0	1,730.0	1,904.9	1,742.7	14.2	13.9	-105.21	411.0	-436.2	103.5	76.9	3.891		
2,000.0	1,804.3	2,004.7	1,817.5	14.8	14.3	-104.89	456.6	-484.0	110.5	81.6	3.816		
2,100.0	1,878.6	2,104.4	1,892.2	15.7	15.6	-104.61	502.1	-531.9	117.5	86.1	3.740		
2,200.0	1,952.9	2,204.2	1,967.0	16.9	16.9	-104.36	547.6	-579.7	124.6	90.6	3.671		
2,300.0	2,027.2	2,303.9	2,041.8	18.2	18.2	-104.14	593.2	-627.5	131.6	95.1	3.608		
2,400.0	2,101.5	2,403.7	2,116.5	19.5	19.5	-103.94	638.7	-675.4	138.6	99.6	3.551		
2,500.0	2,175.8	2,503.4	2,191.3	20.8	20.8	-103.76	684.2	-723.2	145.6	104.0	3.500		
2,600.0	2,250.1	2,603.2	2,266.0	22.2	22.2	-103.59	729.8	-771.0	152.7	108.4	3.453		
2,700.0	2,324.4	2,702.9	2,340.8	23.5	23.5	-103.44	775.3	-818.9	159.7	112.8	3.410		
2,800.0	2,398.7	2,802.7	2,415.6	24.8	24.8	-103.30	820.8	-866.7	166.7	117.2	3.370		
2,900.0	2,473.0	2,902.4	2,490.3	26.2	26.2	-103.18	866.4	-914.5	173.7	121.6	3.334		
3,000.0	2,547.2	3,002.2	2,565.1	27.5	27.5	-103.06	911.9	-962.4	180.8	126.0	3.302		
3,100.0	2,621.5	3,101.9	2,639.8	28.9	28.9	-102.95	957.4	-1,010.2	187.8	130.4	3.271		
3,200.0	2,695.8	3,201.7	2,714.6	30.2	30.3	-102.85	1,003.0	-1,058.0	194.8	134.8	3.243		
3,300.0	2,770.1	3,301.4	2,789.4	31.6	31.6	-102.76	1,048.5	-1,105.9	201.9	139.1	3.217		
3,400.0	2,844.4	3,401.2	2,864.1	32.9	33.0	-102.67	1,094.0	-1,153.7	208.9	143.5	3.193		
3,500.0	2,918.7	3,500.9	2,938.9	34.3	34.3	-102.59	1,139.6	-1,201.5	215.9	147.8	3.171		
3,600.0	2,993.0	3,600.7	3,013.6	35.6	35.7	-102.52	1,185.1	-1,249.4	223.0	152.2	3.150		
3,700.0	3,067.3	3,700.5	3,088.4	37.0	37.1	-102.45	1,230.6	-1,297.2	230.0	156.5	3.130		
3,800.0	3,141.6	3,800.2	3,163.2	38.3	38.4	-102.38	1,276.2	-1,345.0	237.0	160.9	3.112		
3,900.0	3,215.9	3,900.0	3,237.9	39.7	39.8	-102.32	1,321.7	-1,392.9	244.1	165.2	3.095		
4,000.0	3,290.2	3,999.7	3,312.7	41.1	41.2	-102.26	1,367.3	-1,440.7	251.1	169.5	3.079		
4,100.0	3,364.5	4,099.5	3,387.4	42.4	42.5	-102.20	1,412.8	-1,488.5	258.1	173.9	3.064		
4,200.0	3,438.8	4,199.2	3,462.2	43.8	43.9	-102.15	1,458.3	-1,536.4	265.2	178.2	3.050		
4,300.0	3,513.1	4,299.0	3,537.0	45.1	45.3	-102.09	1,503.9	-1,584.2	272.2	182.5	3.036		
4,400.0	3,587.4	4,398.7	3,611.7	46.5	46.6	-102.05	1,549.4	-1,632.0	279.2	186.9	3.024		
4,500.0	3,661.7	4,498.5	3,686.5	47.9	48.0	-102.00	1,594.9	-1,679.9	286.3	191.2	3.012		
4,600.0	3,736.0	4,598.2	3,761.2	49.2	49.4	-101.96	1,640.5	-1,727.7	293.3	195.5	3.000		
4,700.0	3,810.3	4,698.0	3,836.0	50.6	50.8	-101.92	1,686.0	-1,775.5	300.3	199.9	2.989		
4,800.0	3,884.6	4,797.7	3,910.8	51.9	52.1	-101.88	1,731.5	-1,823.4	307.4	204.2	2.979		
4,900.0	3,958.9	4,897.5	3,985.5	53.3	53.5	-101.84	1,777.1	-1,871.2	314.4	208.5	2.969		
5,000.0	4,033.2	4,997.2	4,060.3	54.7	54.9	-101.80	1,822.6	-1,919.0	321.4	212.8	2.960		
5,100.0	4,107.5	5,097.0	4,135.0	56.0	56.3	-101.77	1,868.1	-1,966.9	328.5	217.2	2.951		
5,200.0	4,181.8	5,196.7	4,209.8	57.4	57.6	-101.73	1,913.7	-2,014.7	335.5	221.5	2.942		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program:												Offset Well Error:	0.0 usft
Sec 8, T6S, R94W - RWF 321-8 - Wellbore #1 - Plan #2													
0-OWSG (REV5) MWD HDGM Standard													
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
5,300.0	4,256.1	5,296.0	4,284.3	58.8	59.0	-101.73	1,958.9	-2,062.2	342.6	225.9	2.935		
5,400.0	4,331.6	5,394.3	4,359.7	60.1	60.3	-101.97	2,002.4	-2,107.9	349.6	230.3	2.931		
5,500.0	4,409.4	5,492.5	4,437.2	61.4	61.5	-102.20	2,044.0	-2,151.6	356.3	234.6	2.928		
5,600.0	4,489.4	5,590.7	4,516.6	62.5	62.7	-102.42	2,083.7	-2,193.3	362.7	238.7	2.925		
5,700.0	4,571.4	5,688.9	4,598.0	63.7	63.8	-102.62	2,121.6	-2,233.1	368.8	242.7	2.924		
5,800.0	4,655.3	5,787.0	4,681.2	64.7	64.8	-102.81	2,157.5	-2,270.8	374.6	246.5	2.924		
5,900.0	4,741.1	5,885.1	4,766.1	65.7	65.7	-103.00	2,191.4	-2,306.4	380.1	250.1	2.924		
6,000.0	4,828.6	5,983.2	4,852.6	66.6	66.6	-103.17	2,223.2	-2,339.9	385.3	253.5	2.925		
6,100.0	4,917.8	6,081.2	4,940.6	67.4	67.4	-103.33	2,253.0	-2,371.2	390.1	256.8	2.926		
6,200.0	5,008.5	6,179.3	5,030.1	68.2	68.1	-103.48	2,280.7	-2,400.3	394.6	259.8	2.928		
6,300.0	5,100.6	6,277.3	5,120.8	68.9	68.8	-103.62	2,306.3	-2,427.1	398.8	262.7	2.930		
6,400.0	5,194.0	6,375.3	5,212.7	69.5	69.4	-103.76	2,329.7	-2,451.7	402.6	265.3	2.933		
6,500.0	5,288.6	6,473.3	5,305.7	70.1	70.0	-103.88	2,350.9	-2,474.0	406.1	267.8	2.936		
6,600.0	5,384.2	6,571.2	5,399.7	70.6	70.4	-104.00	2,369.9	-2,494.0	409.2	270.0	2.939		
6,700.0	5,480.9	6,669.2	5,494.6	71.0	70.8	-104.10	2,386.7	-2,511.6	412.0	272.0	2.941		
6,800.0	5,578.3	6,767.1	5,590.2	71.4	71.2	-104.20	2,401.3	-2,526.9	414.4	273.7	2.944		
6,900.0	5,676.5	6,865.0	5,686.5	71.7	71.5	-104.30	2,413.5	-2,539.8	416.5	275.2	2.947		
7,000.0	5,775.3	6,962.9	5,783.3	72.0	71.7	-104.38	2,423.5	-2,550.3	418.2	276.4	2.950		
7,100.0	5,874.6	7,060.8	5,880.6	72.2	71.9	-104.46	2,431.2	-2,558.4	419.5	277.4	2.952		
7,200.0	5,974.2	7,158.7	5,978.1	72.3	72.0	-104.52	2,436.6	-2,564.0	420.5	278.2	2.954		
7,300.0	6,074.1	7,256.6	6,075.9	72.4	72.1	-104.59	2,439.7	-2,567.3	421.1	278.6	2.956		
7,400.0	6,174.0	7,354.7	6,174.0	72.4	72.1	-145.04	2,440.6	-2,568.2	421.3	278.8	2.956		
7,500.0	6,274.0	7,454.7	6,274.0	72.4	72.1	-145.04	2,440.6	-2,568.2	421.3	278.8	2.956		
7,600.0	6,374.0	7,554.7	6,374.0	72.4	72.1	-145.04	2,440.6	-2,568.2	421.3	278.7	2.955		
7,700.0	6,474.0	7,654.7	6,474.0	72.5	72.2	-145.04	2,440.6	-2,568.2	421.3	278.7	2.954		
7,800.0	6,574.0	7,754.7	6,574.0	72.5	72.2	-145.04	2,440.6	-2,568.2	421.3	278.7	2.954		
7,900.0	6,674.0	7,854.7	6,674.0	72.5	72.2	-145.04	2,440.6	-2,568.2	421.3	278.6	2.953		
8,000.0	6,774.0	7,954.7	6,774.0	72.5	72.2	-145.04	2,440.6	-2,568.2	421.3	278.6	2.953		
8,100.0	6,874.0	8,054.7	6,874.0	72.5	72.2	-145.04	2,440.6	-2,568.2	421.3	278.6	2.952		
8,200.0	6,974.0	8,154.7	6,974.0	72.5	72.2	-145.04	2,440.6	-2,568.2	421.3	278.6	2.951		
8,300.0	7,074.0	8,254.7	7,074.0	72.5	72.2	-145.04	2,440.6	-2,568.2	421.3	278.5	2.951		
8,400.0	7,174.0	8,354.7	7,174.0	72.6	72.3	-145.04	2,440.6	-2,568.2	421.3	278.5	2.950		
8,500.0	7,274.0	8,454.7	7,274.0	72.6	72.3	-145.04	2,440.6	-2,568.2	421.3	278.5	2.949		
8,600.0	7,374.0	8,554.7	7,374.0	72.6	72.3	-145.04	2,440.6	-2,568.2	421.3	278.4	2.949		
8,700.0	7,474.0	8,654.7	7,474.0	72.6	72.3	-145.04	2,440.6	-2,568.2	421.3	278.4	2.948		
8,800.0	7,574.0	8,754.7	7,574.0	72.6	72.3	-145.04	2,440.6	-2,568.2	421.3	278.4	2.947		
8,900.0	7,674.0	8,854.7	7,674.0	72.6	72.3	-145.04	2,440.6	-2,568.2	421.3	278.3	2.946		
9,000.0	7,774.0	8,954.7	7,774.0	72.7	72.4	-145.04	2,440.6	-2,568.2	421.3	278.3	2.946		
9,100.0	7,874.0	9,054.7	7,874.0	72.7	72.4	-145.04	2,440.6	-2,568.2	421.3	278.3	2.945		
9,200.0	7,974.0	9,154.7	7,974.0	72.7	72.4	-145.04	2,440.6	-2,568.2	421.3	278.2	2.944		
9,300.0	8,074.0	9,254.7	8,074.0	72.7	72.4	-145.04	2,440.6	-2,568.2	421.3	278.2	2.944		
9,400.0	8,174.0	9,354.7	8,174.0	72.7	72.4	-145.04	2,440.6	-2,568.2	421.3	278.2	2.943		
9,500.0	8,274.0	9,454.7	8,274.0	72.7	72.4	-145.04	2,440.6	-2,568.2	421.3	278.1	2.942		
9,600.0	8,374.0	9,554.7	8,374.0	72.7	72.5	-145.04	2,440.6	-2,568.2	421.3	278.1	2.942		
9,700.0	8,474.0	9,654.7	8,474.0	72.8	72.5	-145.04	2,440.6	-2,568.2	421.3	278.1	2.941		
9,800.0	8,574.0	9,754.7	8,574.0	72.8	72.5	-145.04	2,440.6	-2,568.2	421.3	278.0	2.940		
9,900.0	8,674.0	9,854.7	8,674.0	72.8	72.5	-145.04	2,440.6	-2,568.2	421.3	278.0	2.939		
10,000.0	8,774.0	9,954.7	8,774.0	72.8	72.5	-145.04	2,440.6	-2,568.2	421.3	277.9	2.939		
10,100.0	8,874.0	10,054.7	8,874.0	72.8	72.5	-145.04	2,440.6	-2,568.2	421.3	277.9	2.938		
10,116.3	8,890.4	10,071.0	8,890.4	72.8	72.5	-145.04	2,440.6	-2,568.2	421.3	277.9	2.938		
10,200.0	8,974.0	10,153.7	8,973.0	72.8	72.5	-145.04	2,440.6	-2,568.2	421.3	277.9	2.938		
10,217.0	8,991.0	10,153.7	8,973.0	72.8	72.5	-145.04	2,440.6	-2,568.2	421.7	278.6	2.947		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
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Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program:												Offset Well Error:	0.0 usft
Sec 8, T6S, R94W - RWF 421-8 - Wellbore #1 - Plan #2													
0-OWSG (REV5) MWD HDGM Standard													
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
2,200.0	1,952.9	2,180.8	1,942.0	16.9	17.1	-92.56	502.4	-643.6	199.8	166.0	5.904	CC, ES	
2,300.0	2,027.2	2,280.0	2,019.1	18.2	18.3	-94.04	542.1	-691.8	211.2	174.8	5.793		
2,400.0	2,101.5	2,379.2	2,096.2	19.5	19.6	-95.37	581.8	-740.0	222.7	183.7	5.701		
2,500.0	2,175.8	2,478.4	2,173.3	20.8	20.9	-96.57	621.6	-788.2	234.4	192.7	5.623		
2,600.0	2,250.1	2,577.6	2,250.4	22.2	22.2	-97.65	661.3	-836.4	246.1	201.8	5.557		
2,700.0	2,324.4	2,676.8	2,327.4	23.5	23.5	-98.64	701.0	-884.6	257.9	211.0	5.500		
2,800.0	2,398.7	2,776.0	2,404.5	24.8	24.8	-99.54	740.7	-932.8	269.7	220.3	5.452		
2,900.0	2,473.0	2,875.2	2,481.6	26.2	26.1	-100.36	780.4	-981.0	281.6	229.6	5.410		
3,000.0	2,547.2	2,974.4	2,558.7	27.5	27.4	-101.12	820.1	-1,029.2	293.6	239.0	5.374		
3,100.0	2,621.5	3,073.6	2,635.8	28.9	28.7	-101.81	859.9	-1,077.4	305.6	248.4	5.342		
3,200.0	2,695.8	3,172.8	2,712.9	30.2	29.9	-102.46	899.6	-1,125.6	317.7	257.9	5.315		
3,300.0	2,770.1	3,272.1	2,790.0	31.6	31.2	-103.06	939.3	-1,173.8	329.8	267.5	5.290		
3,400.0	2,844.4	3,371.3	2,867.0	32.9	32.5	-103.61	979.0	-1,222.0	341.9	277.0	5.268		
3,500.0	2,918.7	3,470.5	2,944.1	34.3	33.8	-104.13	1,018.7	-1,270.2	354.1	286.6	5.249		
3,600.0	2,993.0	3,569.7	3,021.2	35.6	35.1	-104.61	1,058.4	-1,318.4	366.3	296.3	5.232		
3,700.0	3,067.3	3,668.9	3,098.3	37.0	36.4	-105.06	1,098.2	-1,366.6	378.5	305.9	5.217		
3,800.0	3,141.6	3,768.1	3,175.4	38.3	37.7	-105.49	1,137.9	-1,414.8	390.7	315.6	5.203		
3,900.0	3,215.9	3,867.3	3,252.5	39.7	39.0	-105.88	1,177.6	-1,463.0	403.0	325.3	5.191		
4,000.0	3,290.2	3,966.5	3,329.6	41.1	40.3	-106.26	1,217.3	-1,511.2	415.2	335.1	5.180		
4,100.0	3,364.5	4,065.7	3,406.6	42.4	41.6	-106.61	1,257.0	-1,559.4	427.5	344.8	5.169		
4,200.0	3,438.8	4,164.9	3,483.7	43.8	42.9	-106.94	1,296.7	-1,607.6	439.8	354.6	5.160		
4,300.0	3,513.1	4,264.1	3,560.8	45.1	44.2	-107.26	1,336.4	-1,655.7	452.1	364.4	5.152		
4,400.0	3,587.4	4,363.4	3,637.9	46.5	45.5	-107.56	1,376.2	-1,703.9	464.5	374.2	5.144		
4,500.0	3,661.7	4,462.6	3,715.0	47.9	46.8	-107.84	1,415.9	-1,752.1	476.8	384.0	5.137		
4,600.0	3,736.0	4,561.8	3,792.1	49.2	48.1	-108.11	1,455.6	-1,800.3	489.2	393.8	5.131		
4,700.0	3,810.3	4,661.0	3,869.2	50.6	49.4	-108.36	1,495.3	-1,848.5	501.5	403.7	5.125		
4,800.0	3,884.6	4,760.2	3,946.2	51.9	50.7	-108.60	1,535.0	-1,896.7	513.9	413.5	5.120		
4,900.0	3,958.9	4,859.4	4,023.3	53.3	52.0	-108.84	1,574.7	-1,944.9	526.3	423.4	5.115		
5,000.0	4,033.2	4,957.7	4,099.8	54.7	53.3	-109.07	1,614.0	-1,992.6	538.7	433.3	5.112	SF	
5,100.0	4,107.5	5,053.6	4,175.6	56.0	54.5	-109.50	1,651.3	-2,037.8	551.5	443.8	5.122		
5,200.0	4,181.8	5,148.9	4,252.8	57.4	55.7	-110.19	1,687.0	-2,081.1	565.0	455.2	5.144		
5,300.0	4,256.1	5,243.7	4,331.0	58.8	56.8	-111.12	1,721.0	-2,122.4	579.3	467.5	5.181		
5,400.0	4,331.6	5,338.0	4,410.4	60.1	57.8	-112.36	1,753.4	-2,161.7	593.7	480.1	5.226		
5,500.0	4,409.4	5,432.1	4,491.0	61.4	58.7	-113.49	1,784.2	-2,199.1	607.7	492.4	5.271		
5,600.0	4,489.4	5,526.0	4,572.8	62.5	59.6	-114.54	1,813.5	-2,234.7	621.2	504.3	5.316		
5,700.0	4,571.4	5,619.6	4,655.7	63.7	60.5	-115.50	1,841.3	-2,268.3	634.2	515.9	5.360		
5,800.0	4,655.3	5,713.1	4,739.6	64.7	61.2	-116.38	1,867.4	-2,300.1	646.6	526.9	5.404		
5,900.0	4,741.1	5,806.4	4,824.4	65.7	62.0	-117.19	1,892.0	-2,329.9	658.4	537.5	5.447		
6,000.0	4,828.6	5,900.0	4,910.7	66.6	62.6	-117.93	1,915.1	-2,358.0	669.6	547.6	5.489		
6,100.0	4,917.8	5,992.4	4,996.9	67.4	63.2	-118.60	1,936.4	-2,383.8	680.2	557.2	5.530		
6,200.0	5,008.5	6,085.2	5,084.3	68.2	63.8	-119.22	1,956.2	-2,407.9	690.0	566.1	5.569		
6,300.0	5,100.6	6,177.9	5,172.4	68.9	64.3	-119.78	1,974.4	-2,429.9	699.2	574.5	5.606		
6,400.0	5,194.0	6,270.4	5,261.2	69.5	64.8	-120.28	1,991.0	-2,450.0	707.7	582.2	5.641		
6,500.0	5,288.6	6,362.8	5,350.6	70.1	65.2	-120.74	2,006.0	-2,468.2	715.4	589.3	5.674		
6,600.0	5,384.2	6,455.2	5,440.5	70.6	65.5	-121.15	2,019.3	-2,484.4	722.4	595.8	5.705		
6,700.0	5,480.9	6,547.4	5,530.9	71.0	65.8	-121.51	2,031.0	-2,498.6	728.7	601.6	5.733		
6,800.0	5,578.3	6,639.6	5,621.7	71.4	66.1	-121.83	2,041.1	-2,510.8	734.1	606.7	5.759		
6,900.0	5,676.5	6,731.6	5,712.8	71.7	66.3	-122.11	2,049.5	-2,521.0	738.8	611.1	5.782		
7,000.0	5,775.3	6,823.6	5,804.2	72.0	66.5	-122.35	2,056.3	-2,529.3	742.7	614.7	5.802		
7,100.0	5,874.6	6,915.6	5,895.8	72.2	66.6	-122.54	2,061.5	-2,535.6	745.9	617.7	5.820		
7,200.0	5,974.2	7,007.5	5,987.5	72.3	66.7	-122.70	2,065.0	-2,539.8	748.2	619.9	5.835		
7,300.0	6,074.1	7,100.0	6,079.9	72.4	66.8	-122.81	2,066.9	-2,542.1	749.7	621.4	5.846		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 usft
Survey Program: 0-OWSG (REV5) MWD HDGM Standard												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
7,400.0	6,174.0	7,194.1	6,174.0	72.4	66.8	-163.29	2,067.2	-2,542.5	750.3	622.1	5.853		
7,500.0	6,274.0	7,294.1	6,274.0	72.4	66.8	-163.29	2,067.2	-2,542.5	750.3	622.1	5.851		
7,600.0	6,374.0	7,394.1	6,374.0	72.4	66.8	-163.29	2,067.2	-2,542.5	750.3	622.1	5.849		
7,700.0	6,474.0	7,494.1	6,474.0	72.5	66.8	-163.29	2,067.2	-2,542.5	750.3	622.0	5.848		
7,800.0	6,574.0	7,594.1	6,574.0	72.5	66.8	-163.29	2,067.2	-2,542.5	750.3	622.0	5.846		
7,900.0	6,674.0	7,694.1	6,674.0	72.5	66.9	-163.29	2,067.2	-2,542.5	750.3	621.9	5.844		
8,000.0	6,774.0	7,794.1	6,774.0	72.5	66.9	-163.29	2,067.2	-2,542.5	750.3	621.9	5.842		
8,100.0	6,874.0	7,894.1	6,874.0	72.5	66.9	-163.29	2,067.2	-2,542.5	750.3	621.9	5.841		
8,200.0	6,974.0	7,994.1	6,974.0	72.5	66.9	-163.29	2,067.2	-2,542.5	750.3	621.8	5.839		
8,300.0	7,074.0	8,094.1	7,074.0	72.5	66.9	-163.29	2,067.2	-2,542.5	750.3	621.8	5.837		
8,400.0	7,174.0	8,194.1	7,174.0	72.6	66.9	-163.29	2,067.2	-2,542.5	750.3	621.8	5.835		
8,500.0	7,274.0	8,294.1	7,274.0	72.6	67.0	-163.29	2,067.2	-2,542.5	750.3	621.7	5.834		
8,600.0	7,374.0	8,394.1	7,374.0	72.6	67.0	-163.29	2,067.2	-2,542.5	750.3	621.7	5.832		
8,700.0	7,474.0	8,494.1	7,474.0	72.6	67.0	-163.29	2,067.2	-2,542.5	750.3	621.6	5.830		
8,800.0	7,574.0	8,594.1	7,574.0	72.6	67.0	-163.29	2,067.2	-2,542.5	750.3	621.6	5.828		
8,900.0	7,674.0	8,694.1	7,674.0	72.6	67.0	-163.29	2,067.2	-2,542.5	750.3	621.6	5.826		
9,000.0	7,774.0	8,794.1	7,774.0	72.7	67.0	-163.29	2,067.2	-2,542.5	750.3	621.5	5.825		
9,100.0	7,874.0	8,894.1	7,874.0	72.7	67.1	-163.29	2,067.2	-2,542.5	750.3	621.5	5.823		
9,200.0	7,974.0	8,994.1	7,974.0	72.7	67.1	-163.29	2,067.2	-2,542.5	750.3	621.4	5.821		
9,300.0	8,074.0	9,094.1	8,074.0	72.7	67.1	-163.29	2,067.2	-2,542.5	750.3	621.4	5.819		
9,400.0	8,174.0	9,194.1	8,174.0	72.7	67.1	-163.29	2,067.2	-2,542.5	750.3	621.4	5.817		
9,500.0	8,274.0	9,294.1	8,274.0	72.7	67.1	-163.29	2,067.2	-2,542.5	750.3	621.3	5.815		
9,600.0	8,374.0	9,394.1	8,374.0	72.7	67.2	-163.29	2,067.2	-2,542.5	750.3	621.3	5.813		
9,700.0	8,474.0	9,494.1	8,474.0	72.8	67.2	-163.29	2,067.2	-2,542.5	750.3	621.2	5.812		
9,800.0	8,574.0	9,594.1	8,574.0	72.8	67.2	-163.29	2,067.2	-2,542.5	750.3	621.2	5.810		
9,900.0	8,674.0	9,694.1	8,674.0	72.8	67.2	-163.29	2,067.2	-2,542.5	750.3	621.1	5.808		
10,000.0	8,774.0	9,794.1	8,774.0	72.8	67.2	-163.29	2,067.2	-2,542.5	750.3	621.1	5.806		
10,100.0	8,874.0	9,894.1	8,874.0	72.8	67.2	-163.29	2,067.2	-2,542.5	750.3	621.1	5.804		
10,111.7	8,885.7	9,905.8	8,885.7	72.8	67.3	-163.29	2,067.2	-2,542.5	750.3	621.1	5.804		
10,200.0	8,974.0	9,981.1	8,961.0	72.8	67.3	-163.29	2,067.2	-2,542.5	750.5	621.4	5.814		
10,217.0	8,991.0	9,981.1	8,961.0	72.8	67.3	-163.29	2,067.2	-2,542.5	750.9	622.2	5.833		

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Sec 8, T6S, R94W - RWF 514-4 - Wellbore #1 - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-OWSG (REV5) MWD HDGM Standard												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning	
300.0	299.8	299.3	299.1	1.9	1.7	-8.25	23.1	-0.3	16.4	12.9	4.726		
391.7	391.4	390.8	390.5	2.2	2.0	4.94	27.3	2.0	15.6	11.5	3.754	CC, ES	
400.0	399.7	399.0	398.7	2.3	2.0	5.16	27.8	2.2	15.9	11.7	3.772		
500.0	499.4	497.9	497.1	3.1	3.5	34.49	37.1	3.5	18.1	11.6	2.777	SF	
600.0	598.6	596.4	594.3	4.6	4.5	50.88	52.9	3.2	24.0	15.5	2.817		
700.0	697.0	693.6	689.1	5.9	5.5	65.05	74.5	4.4	35.1	25.5	3.663		
800.0	794.3	789.1	780.6	7.0	7.0	75.80	101.4	8.1	52.5	41.8	4.921		

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Sec 8, T6S, R94W - RWF 521-8 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 475-OWSG (REV5) MWD HDGM Standard												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning	
300.0	299.8	299.4	298.8	1.9	4.1	-115.89	-4.3	-28.2	30.9	25.2	5.481	CC, ES	
400.0	399.7	398.4	397.1	2.3	5.5	-99.25	5.3	-36.0	37.7	30.5	5.184		
500.0	499.4	497.0	494.4	3.1	6.7	-71.38	17.6	-46.0	45.5	36.3	4.959	SF	
600.0	598.6	594.6	589.7	4.6	7.4	-58.35	33.5	-59.0	53.5	42.8	4.991		
700.0	697.0	690.9	683.0	5.9	8.0	-53.37	49.8	-76.5	63.0	51.0	5.271		
800.0	794.3	785.9	774.0	7.0	8.5	-54.16	64.3	-99.5	74.6	61.7	5.762		

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=24' @ 6003.6usft (H&P #318)

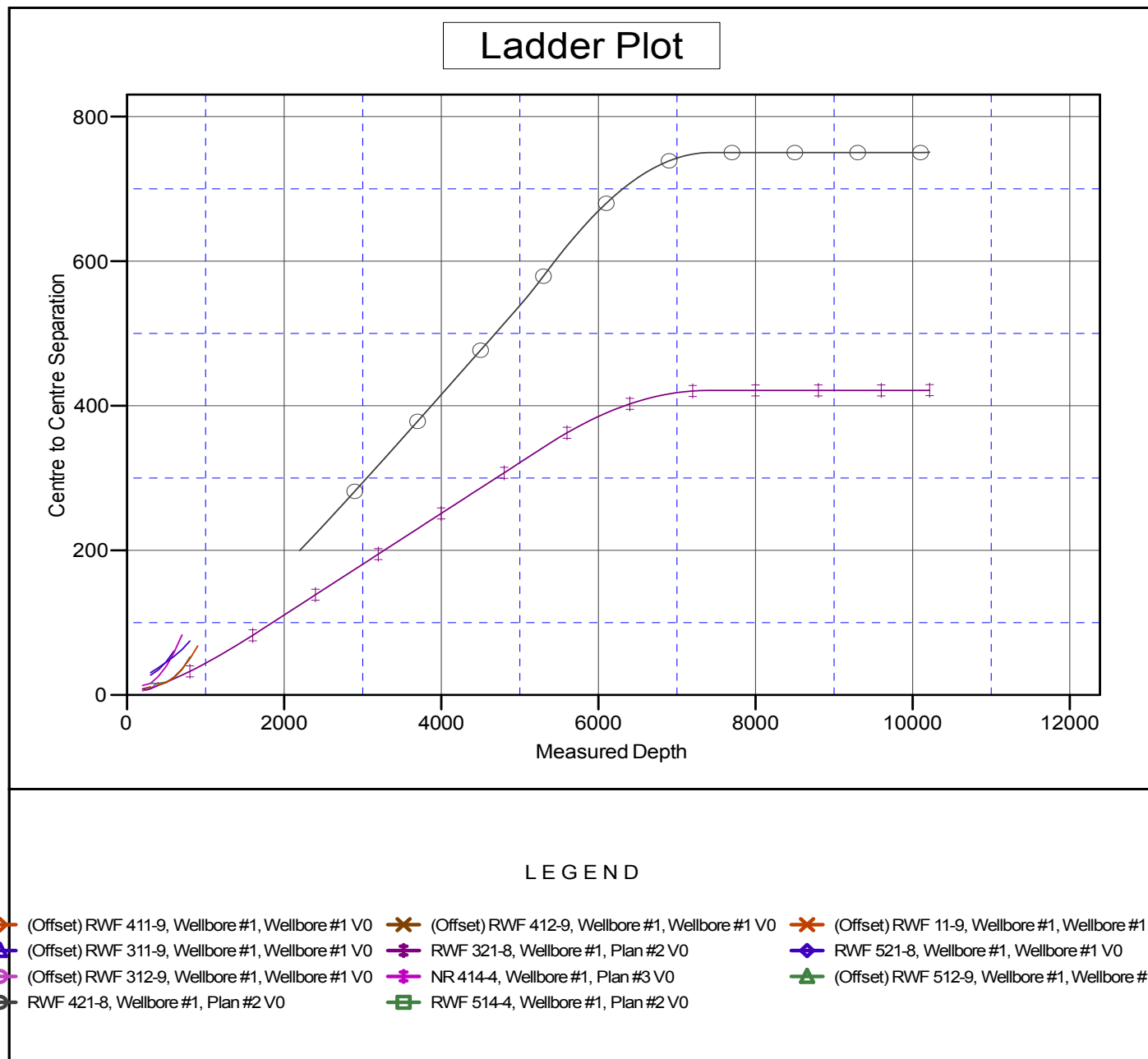
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: RWF 21-8

Coordinate System is US State Plane 1983, Colorado Central Zone

Grid Convergence at Surface is: -1.52°



Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RWF 21-8
Project:	Garfield County, CO	TVD Reference:	KB=24' @ 6003.6usft (H&P #318)
Reference Site:	Sec 8, T6S, R94W	MD Reference:	KB=24' @ 6003.6usft (H&P #318)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	RWF 21-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=24' @ 6003.6usft (H&P #318)

Offset Depths are relative to Offset Datum

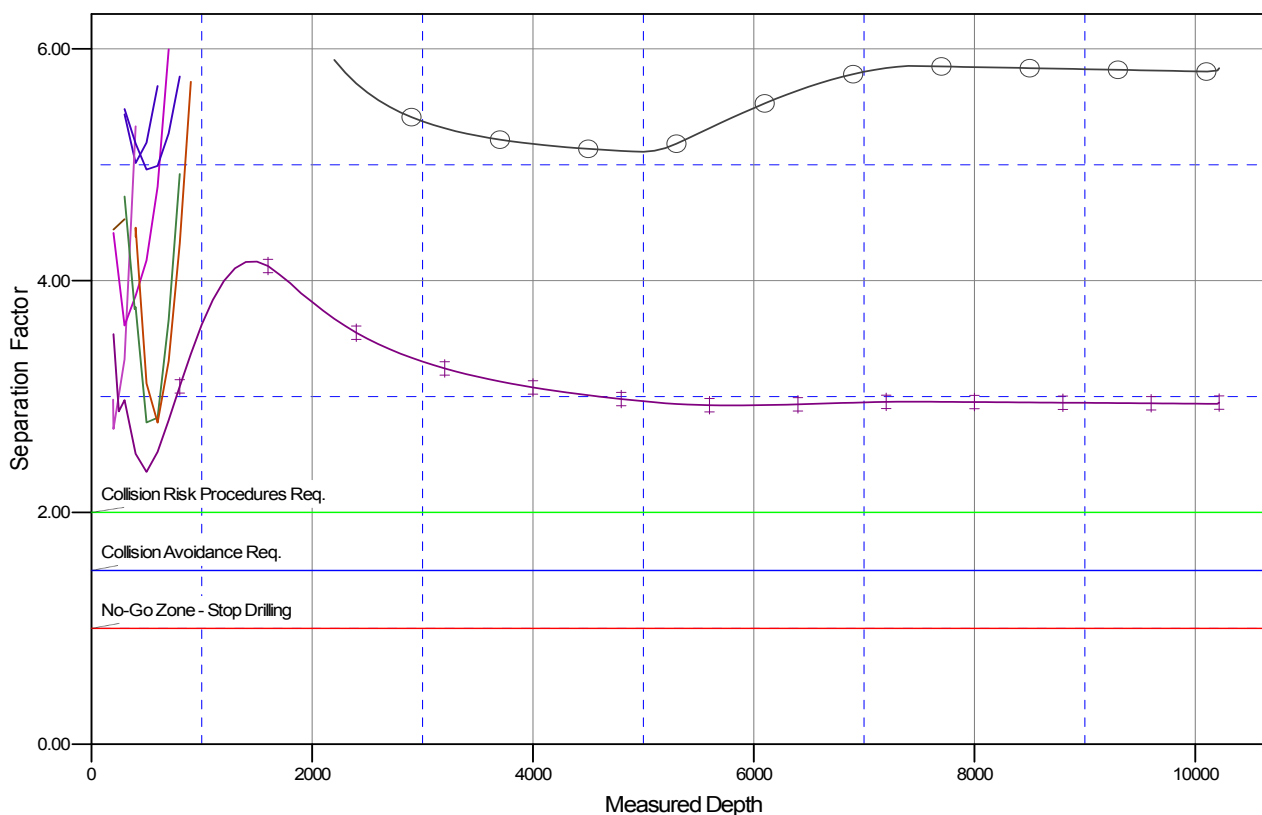
Central Meridian is -105.500000

Coordinates are relative to: RWF 21-8

Coordinate System is US State Plane 1983, Colorado Central Zone

Grid Convergence at Surface is: -1.52°

Separation Factor Plot



LEGEND

- ◆ (Offset) RWF 411-9, Wellbore #1, Wellbore #1 V0
 ✕ (Offset) RWF 412-9, Wellbore #1, Wellbore #1 V0
 ✕ (Offset) RWF 11-9, Wellbore #1, Wellbore #1 V0
- ▲ (Offset) RWF 311-9, Wellbore #1, Wellbore #1 V0
 ✕ RWF 321-8, Wellbore #1, Plan #2 V0
 ◆ RWF 521-8, Wellbore #1, Wellbore #1 V0
- ✕ (Offset) RWF 312-9, Wellbore #1, Wellbore #1 V0
 ✕ NR 414-4, Wellbore #1, Plan #3 V0
 ▲ (Offset) RWF 512-9, Wellbore #1, Wellbore #1 V0
- RWF 421-8, Wellbore #1, Plan #2 V0
 ✕ RWF 514-4, Wellbore #1, Plan #2 V0