

Whiting Oil and Gas Corporation

Weld County, CO

Sec. 21-T10N-R58W

Razor 21B-2812B

Plan D

Design: Actual Field Surveys

Sperry Drilling Services

Standard Report

07 January, 2014

Well Coordinates: 1,549,370.83 N, 3,451,628.04 E (40° 49' 47.98" N, 103° 52' 04.70" W)

Ground Level: 4,837.30 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Razor 21B-2812B

KB 22 ft @ 4859.30usft (Frontier 26)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Design Report for Razor 21B-2812B - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	0.67	182.51	166.00	-0.97	-0.04	-0.97	0.40
First Sperry MWD Survey @ 166.00 ft							
258.00	0.88	181.13	257.99	-2.21	-0.08	-2.21	0.23
350.00	0.71	168.54	349.98	-3.48	0.02	-3.48	0.26
441.00	0.95	180.15	440.97	-4.79	0.13	-4.79	0.32
533.00	0.65	166.72	532.96	-6.06	0.25	-6.06	0.38
625.00	0.58	177.11	624.96	-7.03	0.39	-7.03	0.14
717.00	1.05	174.10	716.95	-8.33	0.50	-8.33	0.51
809.00	1.54	166.76	808.92	-10.37	0.87	-10.37	0.56
901.00	2.50	146.07	900.86	-13.24	2.27	-13.24	1.29
992.00	3.41	146.23	991.74	-17.14	4.89	-17.14	1.00
1,084.00	3.05	150.68	1,083.60	-21.55	7.61	-21.55	0.48
1,179.00	3.22	144.24	1,178.45	-25.92	10.40	-25.92	0.41
1,274.00	3.82	144.36	1,273.28	-30.65	13.81	-30.65	0.63
1,370.00	4.26	148.87	1,369.04	-36.30	17.51	-36.30	0.57
1,465.00	4.18	144.21	1,463.78	-42.13	21.36	-42.13	0.37
1,560.00	2.64	148.90	1,558.61	-46.82	24.52	-46.82	1.65
1,615.00	2.26	145.94	1,613.56	-48.80	25.78	-48.80	0.73
1,730.00	2.81	161.36	1,728.45	-53.35	27.95	-53.35	0.76
1,820.00	2.46	157.67	1,818.35	-57.22	29.39	-57.22	0.43
1,911.00	2.49	158.97	1,909.27	-60.88	30.84	-60.88	0.07
2,002.00	2.29	161.20	2,000.19	-64.44	32.13	-64.44	0.24
2,094.00	3.05	125.51	2,092.09	-67.60	34.72	-67.60	1.94
2,185.00	2.99	128.03	2,182.97	-70.47	38.56	-70.47	0.16
2,277.00	2.80	125.77	2,274.85	-73.26	42.27	-73.26	0.24
2,369.00	4.69	137.63	2,366.65	-77.36	46.63	-77.36	2.21
2,460.00	4.45	132.30	2,457.36	-82.48	51.75	-82.48	0.54
2,551.00	4.46	131.72	2,548.09	-87.21	57.00	-87.21	0.05
2,643.00	3.96	133.00	2,639.84	-91.76	61.99	-91.76	0.55
2,734.00	5.28	147.13	2,730.54	-97.42	66.57	-97.42	1.90
2,826.00	5.64	147.39	2,822.12	-104.78	71.30	-104.78	0.39
2,917.00	4.95	140.76	2,912.74	-111.59	76.19	-111.59	1.01
3,009.00	4.95	138.76	3,004.39	-117.65	81.32	-117.65	0.19
3,101.00	4.31	152.07	3,096.10	-123.69	85.56	-123.69	1.35
3,192.00	3.57	135.46	3,186.88	-128.73	89.15	-128.73	1.49
3,282.00	4.21	146.42	3,276.68	-133.48	92.94	-133.48	1.09
3,374.00	3.80	145.81	3,368.45	-138.81	96.52	-138.81	0.45
3,466.00	3.90	144.33	3,460.24	-143.88	100.06	-143.88	0.15
3,558.00	3.88	147.98	3,552.03	-149.06	103.53	-149.06	0.27
3,649.00	4.23	150.16	3,642.80	-154.58	106.83	-154.58	0.42
3,740.00	4.13	147.56	3,733.56	-160.26	110.26	-160.26	0.24
3,831.00	3.93	144.74	3,824.34	-165.57	113.82	-165.57	0.31
3,923.00	3.18	140.22	3,916.16	-170.10	117.27	-170.10	0.87
4,014.00	3.34	150.04	4,007.01	-174.34	120.21	-174.34	0.64
4,105.00	2.64	150.31	4,097.89	-178.46	122.57	-178.46	0.77
4,196.00	4.18	152.31	4,188.72	-183.22	125.15	-183.22	1.70
4,288.00	3.49	156.27	4,280.52	-188.75	127.84	-188.75	0.80
4,380.00	3.47	156.38	4,372.35	-193.86	130.08	-193.86	0.02
4,472.00	4.35	149.28	4,464.13	-199.41	132.98	-199.41	1.09

Design Report for Razor 21B-2812B - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
4,563.00	3.94	147.51	4,554.90	-205.02	136.42	-205.02	0.47
4,655.00	3.31	154.69	4,646.71	-210.08	139.25	-210.08	0.84
4,750.00	3.94	149.34	4,741.52	-215.37	142.09	-215.37	0.75
4,844.00	3.49	153.78	4,835.32	-220.72	145.00	-220.72	0.57
4,939.00	3.26	153.23	4,930.16	-225.72	147.50	-225.72	0.24
5,034.00	3.02	157.66	5,025.02	-230.45	149.66	-230.45	0.36
5,129.00	2.60	164.45	5,119.90	-234.84	151.19	-234.84	0.56
5,224.00	2.49	164.90	5,214.81	-238.91	152.31	-238.91	0.12
5,255.00	3.03	150.24	5,245.77	-240.27	152.89	-240.27	2.85
5,287.00	7.32	148.24	5,277.64	-242.74	154.38	-242.74	13.42
5,319.00	12.02	146.04	5,309.17	-247.24	157.32	-247.24	14.73
5,350.00	16.35	140.85	5,339.22	-253.30	161.88	-253.30	14.54
5,382.00	18.72	139.27	5,369.73	-260.69	168.07	-260.69	7.55
5,414.00	21.30	142.47	5,399.80	-269.19	174.97	-269.19	8.76
5,445.00	23.75	146.84	5,428.43	-278.88	181.81	-278.88	9.57
5,477.00	26.51	153.50	5,457.41	-290.67	188.53	-290.67	12.34
5,509.00	27.62	157.60	5,485.91	-303.92	194.54	-303.92	6.78
5,540.00	27.77	158.15	5,513.35	-317.27	199.97	-317.27	0.96
5,572.00	28.29	155.13	5,541.60	-331.07	205.93	-331.07	4.72
5,604.00	30.15	155.10	5,569.53	-345.24	212.50	-345.24	5.81
5,635.00	32.73	155.48	5,595.98	-359.93	219.26	-359.93	8.35
5,667.00	37.70	156.43	5,622.11	-376.78	226.77	-376.78	15.62
5,699.00	41.46	157.80	5,646.77	-395.56	234.69	-395.56	12.06
5,730.00	44.40	161.22	5,669.47	-415.34	242.06	-415.34	12.10
5,762.00	47.89	160.18	5,691.64	-437.11	249.69	-437.11	11.15
5,794.00	51.24	159.41	5,712.39	-459.96	258.10	-459.96	10.63
5,825.00	52.90	160.79	5,731.44	-482.95	266.42	-482.95	6.40
5,857.00	55.53	158.57	5,750.16	-507.29	275.44	-507.29	9.96
5,888.00	59.07	159.14	5,766.90	-531.62	284.85	-531.62	11.52
5,920.00	61.67	157.42	5,782.72	-557.45	295.15	-557.45	9.37
5,952.00	63.30	157.37	5,797.50	-583.65	306.06	-583.65	5.10
5,983.00	65.93	160.29	5,810.79	-609.76	316.16	-609.76	12.02
6,015.00	69.57	160.09	5,822.91	-637.62	326.20	-637.62	11.39
6,047.00	71.54	163.29	5,833.56	-666.27	335.67	-666.27	11.26
6,078.00	73.41	163.61	5,842.90	-694.60	344.09	-694.60	6.11
6,110.00	76.06	161.91	5,851.32	-724.08	353.24	-724.08	9.74
6,142.00	80.51	160.11	5,857.82	-753.70	363.44	-753.70	14.96
6,173.00	85.39	157.80	5,861.62	-782.40	374.48	-782.40	17.39
6,214.00	88.95	157.82	5,863.65	-820.31	389.95	-820.31	8.68
6,243.00	89.11	157.18	5,864.14	-847.10	401.04	-847.10	2.27
6,306.00	90.15	158.64	5,864.55	-905.47	424.73	-905.47	2.85
6,369.00	89.10	161.37	5,864.96	-964.67	446.27	-964.67	4.64
6,401.00	88.40	162.48	5,865.66	-995.08	456.20	-995.08	4.10
6,496.00	89.88	165.00	5,867.08	-1,086.26	482.79	-1,086.26	3.08
6,591.00	91.70	167.40	5,865.77	-1,178.50	505.45	-1,178.50	3.17
6,686.00	91.30	168.53	5,863.29	-1,271.38	525.25	-1,271.38	1.26
6,781.00	89.29	169.92	5,862.80	-1,364.69	543.01	-1,364.69	2.57
6,876.00	88.25	173.33	5,864.84	-1,458.64	556.84	-1,458.64	3.75
6,971.00	89.32	175.41	5,866.85	-1,553.16	566.16	-1,553.16	2.46
7,066.00	88.09	177.76	5,869.00	-1,647.96	571.82	-1,647.96	2.79
7,161.00	89.63	181.08	5,870.89	-1,742.92	572.78	-1,742.92	3.85

Design Report for Razor 21B-2812B - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
7,255.00	88.86	184.29	5,872.13	-1,836.79	568.37	-1,836.79	3.51
7,350.00	90.15	183.10	5,872.95	-1,931.59	562.25	-1,931.59	1.85
7,446.00	91.92	186.09	5,871.21	-2,027.25	554.56	-2,027.25	3.62
7,540.00	90.65	185.91	5,869.11	-2,120.71	544.74	-2,120.71	1.36
7,635.00	87.04	184.08	5,871.02	-2,215.31	536.47	-2,215.31	4.26
7,727.00	90.54	181.03	5,872.96	-2,307.17	532.37	-2,307.17	5.05
7,819.00	91.92	180.54	5,870.99	-2,399.14	531.11	-2,399.14	1.59
7,910.00	90.26	180.18	5,869.26	-2,490.12	530.54	-2,490.12	1.87
8,002.00	90.55	180.04	5,868.61	-2,582.11	530.37	-2,582.11	0.35
8,092.00	89.48	181.62	5,868.58	-2,672.10	529.06	-2,672.10	2.12
8,184.00	90.35	182.03	5,868.72	-2,764.05	526.13	-2,764.05	1.05
8,275.00	91.02	180.88	5,867.63	-2,855.02	523.82	-2,855.02	1.46
8,367.00	90.59	182.83	5,866.34	-2,946.95	520.84	-2,946.95	2.17
8,459.00	90.71	181.30	5,865.30	-3,038.88	517.53	-3,038.88	1.67
8,550.00	89.29	182.65	5,865.30	-3,129.83	514.39	-3,129.83	2.15
8,641.00	91.74	183.71	5,864.48	-3,220.67	509.35	-3,220.67	2.93
8,733.00	90.52	182.07	5,862.66	-3,312.53	504.71	-3,312.53	2.22
8,823.00	88.38	180.10	5,863.53	-3,402.50	503.01	-3,402.50	3.23
8,914.00	88.58	179.98	5,865.94	-3,493.47	502.94	-3,493.47	0.26
9,006.00	88.74	180.03	5,868.09	-3,585.45	502.93	-3,585.45	0.18
9,097.00	89.26	180.22	5,869.68	-3,676.43	502.73	-3,676.43	0.61
9,189.00	89.05	179.57	5,871.04	-3,768.42	502.90	-3,768.42	0.74
9,281.00	90.80	179.59	5,871.16	-3,860.42	503.58	-3,860.42	1.90
9,371.00	91.45	178.90	5,869.39	-3,950.39	504.76	-3,950.39	1.05
9,462.00	90.11	179.44	5,868.15	-4,041.37	506.08	-4,041.37	1.59
9,553.00	89.64	178.11	5,868.35	-4,132.35	508.03	-4,132.35	1.55
9,644.00	89.35	178.82	5,869.15	-4,223.31	510.46	-4,223.31	0.84
9,736.00	91.05	181.05	5,868.83	-4,315.30	510.57	-4,315.30	3.05
9,828.00	91.39	180.86	5,866.87	-4,407.27	509.04	-4,407.27	0.42
9,919.00	90.42	181.03	5,865.44	-4,498.24	507.54	-4,498.24	1.08
10,011.00	87.92	179.67	5,866.77	-4,590.22	506.97	-4,590.22	3.09
10,102.00	86.95	178.77	5,870.84	-4,681.12	508.21	-4,681.12	1.45
10,193.00	89.38	178.87	5,873.75	-4,772.05	510.08	-4,772.05	2.67
10,285.00	88.02	174.20	5,875.84	-4,863.83	515.64	-4,863.83	5.29
10,376.00	90.18	173.78	5,877.27	-4,954.31	525.17	-4,954.31	2.42
10,438.00	91.14	174.45	5,876.56	-5,015.98	531.52	-5,015.98	1.89
10,499.00	91.30	178.34	5,875.26	-5,076.83	535.36	-5,076.83	6.38
10,560.00	92.60	181.24	5,873.18	-5,137.79	535.58	-5,137.79	5.21
10,621.00	91.96	181.12	5,870.76	-5,198.73	534.32	-5,198.73	1.07
10,682.00	91.54	182.04	5,868.89	-5,259.67	532.64	-5,259.67	1.66
10,742.00	88.03	182.68	5,869.12	-5,319.61	530.17	-5,319.61	5.95
10,833.00	86.54	182.22	5,873.43	-5,410.42	526.29	-5,410.42	1.71
10,925.00	85.75	181.78	5,879.61	-5,502.16	523.08	-5,502.16	0.98
11,017.00	86.93	181.56	5,885.49	-5,593.93	520.41	-5,593.93	1.30
11,108.00	87.43	181.31	5,889.96	-5,684.79	518.13	-5,684.79	0.61
11,199.00	88.36	180.55	5,893.31	-5,775.72	516.66	-5,775.72	1.32
11,291.00	89.11	181.15	5,895.34	-5,867.68	515.29	-5,867.68	1.04
11,382.00	90.46	181.48	5,895.68	-5,958.66	513.20	-5,958.66	1.53
11,473.00	91.79	182.11	5,893.89	-6,049.59	510.35	-6,049.59	1.62
11,565.00	93.27	182.12	5,889.83	-6,141.44	506.96	-6,141.44	1.61

Design Report for Razor 21B-2812B - Actual Field Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
11,656.00	91.86	180.55	5,885.76	-6,232.32	504.85	-6,232.32	2.32
11,747.00	91.88	179.00	5,882.79	-6,323.26	505.20	-6,323.26	1.70
11,839.00	91.97	178.37	5,879.70	-6,415.19	507.31	-6,415.19	0.69
11,931.00	92.99	178.11	5,875.72	-6,507.06	510.14	-6,507.06	1.14
12,022.00	91.63	178.32	5,872.05	-6,597.94	512.97	-6,597.94	1.51
12,114.00	92.84	177.64	5,868.46	-6,689.81	516.21	-6,689.81	1.51
12,205.00	92.70	178.42	5,864.06	-6,780.65	519.33	-6,780.65	0.87
12,300.00	93.08	178.18	5,859.27	-6,875.48	522.15	-6,875.48	0.47
12,395.00	93.26	177.97	5,854.02	-6,970.28	525.33	-6,970.28	0.29
12,490.00	94.97	177.59	5,847.20	-7,064.97	529.00	-7,064.97	1.84
12,585.00	95.96	179.19	5,838.16	-7,159.49	531.66	-7,159.49	1.97
12,680.00	94.63	179.24	5,829.39	-7,254.08	532.96	-7,254.08	1.40
12,722.00	95.15	179.07	5,825.81	-7,295.92	533.57	-7,295.92	1.30
Final Sperry MWD Survey @ 12722.00 ft							
12,771.00	95.15	179.07	5,821.41	-7,344.71	534.37	-7,344.71	0.00
Straight Line Projection to TD @ 12771.00 ft							

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
166.00	166.00	-0.97	-0.04	First Sperry MWD Survey @ 166.00 ft
12,722.00	5,825.81	-7,295.92	533.57	Final Sperry MWD Survey @ 12722.00 ft
12,771.00	5,821.41	-7,344.71	534.37	Straight Line Projection to TD @ 12771.00 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
Target	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
166.00	1,615.00	Surface_Sperry MWD Surveys	MWD+IFR1+MS+sag
1,730.00	6,214.00	Vertical and Build_Sperry MWD Surveys	MWD+IFR2+MS+sag
6,243.00	12,771.00	Lateral_Sperry MWD Surveys	MWD+IFR1+MS+sag

Design Report for Razor 21B-2812B - Actual Field Surveys**Wellbore 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
Razor 21B-2812B_SB	0.00	0.00	0.00	0.02	0.00	1,549,370.85	3,451,628.04	40° 49' 47.978 N	103° 52' 4.699 W
- actual wellpath misses target center by 0.02usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1				0.00	-4,846.33	1,855.84	1,544,559.45	3,453,572.77	
Point 2				0.00	-10,049.60	1,934.89	1,539,358.48	3,453,747.56	
Point 3				0.00	-10,056.39	-3,166.90	1,539,257.80	3,448,646.72	
Point 4				0.00	-4,856.40	-3,229.31	1,544,455.80	3,448,488.62	
Point 5				0.00	240.53	-3,290.87	1,549,550.77	3,448,333.27	
Point 6				0.00	344.58	1,810.31	1,549,748.69	3,453,431.71	
Point 7				0.00	-4,846.33	1,855.84	1,544,559.45	3,453,572.77	
Nelson Ranches #E-1_	0.00	0.00	0.00	-2,883.29	-2,752.66	1,546,437.34	3,448,928.89	40° 49' 19.487 N	103° 52' 40.503 W
- actual wellpath misses target center by 3986.32usft at 17.55usft MD (17.55 TVD, -0.01 N, 0.00 E)									
- Circle (radius 1,550.00)									
Razor 21B-2812B_SL	0.00	0.00	0.00	0.02	0.00	1,549,370.85	3,451,628.04	40° 49' 47.978 N	103° 52' 4.699 W
- actual wellpath misses target center by 0.02usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1				0.00	-4,856.39	-3,329.31	1,544,453.97	3,448,388.64	
Point 2				0.00	-4,830.37	-683.69	1,544,528.67	3,451,033.35	
Point 3				0.00	-4,846.33	1,955.84	1,544,561.29	3,453,672.75	
Point 4				0.00	-10,149.60	2,034.89	1,539,260.33	3,453,849.39	
Point 5				0.00	-10,156.39	-3,266.90	1,539,155.97	3,448,548.58	
Point 6				0.00	-4,856.39	-3,329.31	1,544,453.97	3,448,388.64	
Point 7				0.00	340.53	-3,390.87	1,549,648.92	3,448,231.45	
Point 8				0.00	444.58	1,910.31	1,549,850.51	3,453,529.86	
Point 9				0.00	-4,846.33	1,955.84	1,544,561.29	3,453,672.75	
Point 10				0.00	-4,830.37	-683.69	1,544,528.67	3,451,033.35	
Razor 21B-2812B WPI	0.00	0.00	5,825.00	-7,400.76	509.08	1,541,980.64	3,452,273.24	40° 48' 34.852 N	103° 51' 58.079 W
- actual wellpath misses target center by 61.59usft at 12771.00usft MD (5821.41 TVD, -7344.71 N, 534.37 E)									
- Point									
Razor 21B-2812B WP:	0.00	0.00	5,865.00	-4,375.38	509.08	1,545,005.53	3,452,217.56	40° 49' 4.745 N	103° 51' 58.078 W
- actual wellpath misses target center by 2.65usft at 9796.16usft MD (5867.61 TVD, -4375.44 N, 509.53 E)									
- Point									
Razor 21B-2812B WP:	0.00	0.00	5,865.00	-6,680.89	508.00	1,542,700.37	3,452,258.91	40° 48' 41.965 N	103° 51' 58.093 W
- actual wellpath misses target center by 8.76usft at 12104.94usft MD (5868.90 TVD, -6680.76 N, 515.84 E)									
- Point									
Razor 21B-2812B WP:	0.00	0.00	5,865.00	-2,972.07	509.08	1,546,408.61	3,452,191.73	40° 49' 18.611 N	103° 51' 58.078 W
- actual wellpath misses target center by 10.66usft at 8392.53usft MD (5866.07 TVD, -2972.46 N, 519.68 E)									
- Point									
Razor 21B-2812B_Re	0.00	0.00	5,866.00	-7,400.76	509.08	1,541,980.64	3,452,273.24	40° 48' 34.852 N	103° 51' 58.079 W
- actual wellpath misses target center by 75.95usft at 12771.00usft MD (5821.41 TVD, -7344.71 N, 534.37 E)									
- Point									
Razor 21B-2812B WP	0.00	0.00	5,870.00	-1,765.73	560.00	1,547,615.70	3,452,220.44	40° 49' 30.531 N	103° 51' 57.415 W
- actual wellpath misses target center by 12.23usft at 7184.37usft MD (5871.08 TVD, -1766.28 N, 572.17 E)									
- Point									
Razor 21B-2812B_Re	0.00	0.00	5,878.00	-7,400.75	509.08	1,541,980.64	3,452,273.24	40° 48' 34.852 N	103° 51' 58.079 W
- actual wellpath misses target center by 83.56usft at 12771.00usft MD (5821.41 TVD, -7344.71 N, 534.37 E)									
- Point									
Razor 21B-2812B WP:	0.00	0.00	5,885.00	-5,979.16	509.08	1,543,402.01	3,452,247.07	40° 48' 48.898 N	103° 51' 58.078 W
- actual wellpath misses target center by 11.05usft at 11402.82usft MD (5895.46 TVD, -5979.47 N, 512.64 E)									
- Point									

Directional Difficulty Index

Average Dogleg over Survey:	2.07 °/100usft	Maximum Dogleg over Survey:	17.39 °/100usft at 6,173.00 usft
Net Tortosity applicable to Plans:	0.78 °/100usft	Directional Difficulty Index:	6.631

Design Report for Razor 21B-2812B - Actual Field Surveys

Audit Info

North Reference Sheet for Sec. 21-T10N-R58W - Razor 21B-2812B - Plan D

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to KB 22 ft @ 4859.30usft (Frontier 26). Northing and Easting are relative to Razor 21B-2812B

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 105° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 1.00000790

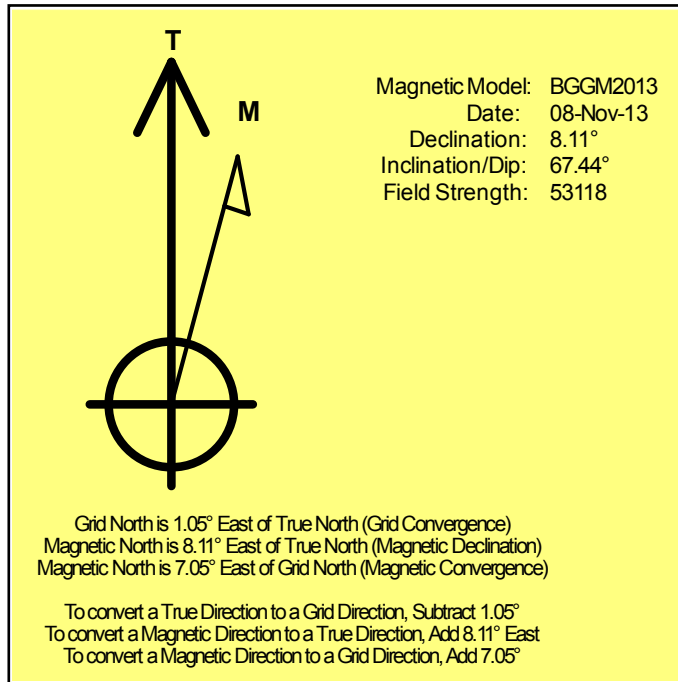
Grid Coordinates of Well: 1,549,370.83 usft N, 3,451,628.04 usft E

Geographical Coordinates of Well: 40° 49' 47.98" N, 103° 52' 04.70" W

Grid Convergence at Surface is: 1.05°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,771.00usft
the Bottom Hole Displacement is 7,364.13usft in the Direction of 175.84° (True).

Magnetic Convergence at surface is: -7.05° (8 November 2013, , BGGM2013)



Whiting Oil and Gas Corporation

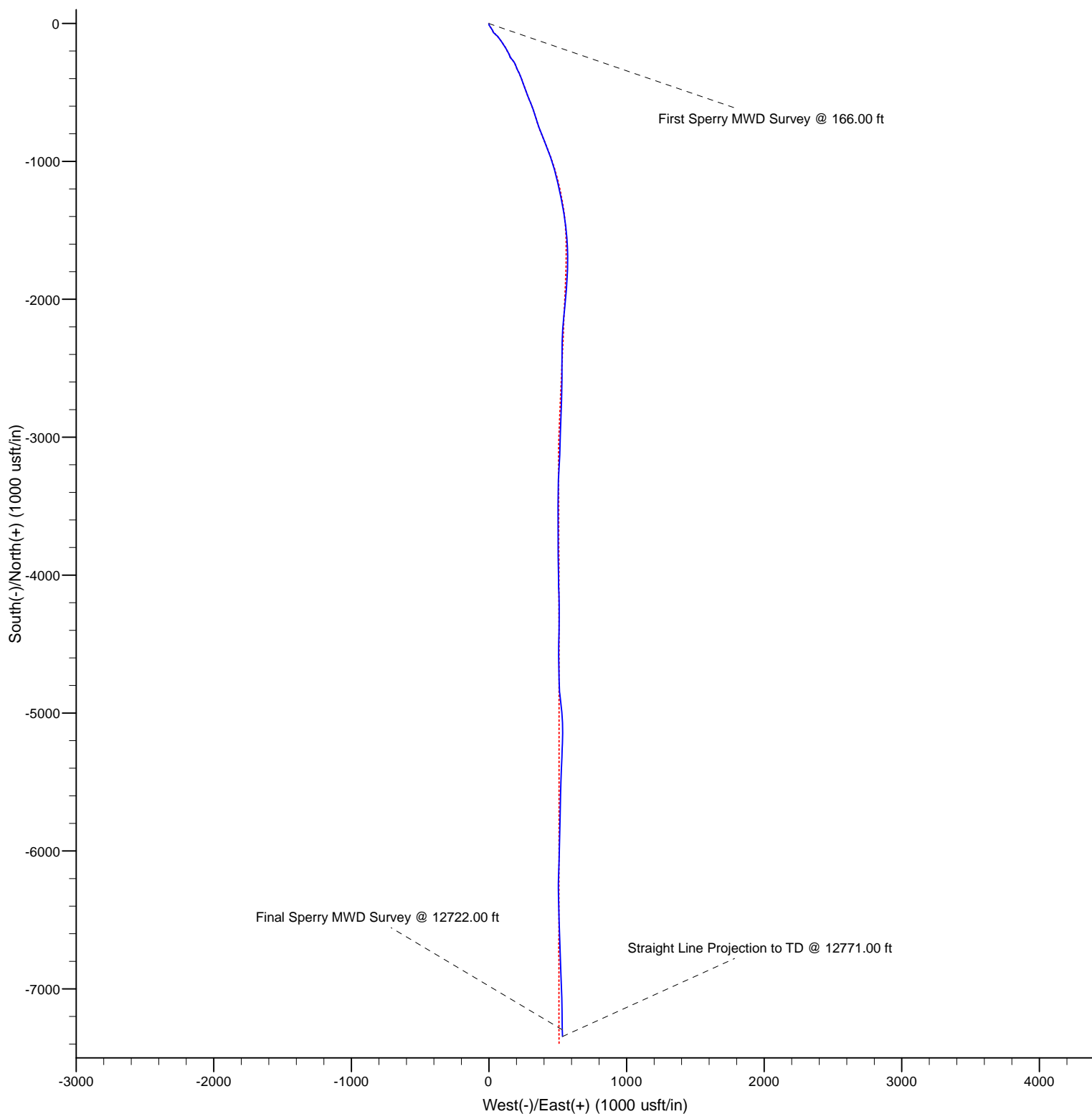
HALLIBURTON

Sperry Drilling

LEGEND

..... Razor 21B-2812B, Plan D

— Actual Field Surveys



Project: Weld County, CO
Site: Sec. 21-T10N-R58W
Well: Razor 21B-2812B

Whiting Oil and Gas Corporation

