

SPERRY-SUN DRILLING SERVICES

CERTIFIED SURVEY WORK SHEET

| | |
|----------------------|---------------------|
| OPERATOR: | Whiting Oil and Gas |
| WELL: | Razor 11H-0215A |
| FIELD: | Red Tail |
| RIG: | Frontier 26 |
| LEGALS: | Sec. 11-T10N-R58W |
| COUNTY: | Weld |
| STATE: | Colorado |
| CAL. METHOD: | Minimum Curvature |
| MAG. DECL. APPLIED: | 7.46 |
| VERTICAL SEC. DIR. : | 358.74 |

| | |
|---------------------------|------------------|
| SSDS Job Number : | 902159458 |
| Start Date of Job : | 3/8/2015 |
| End Date of Job : | 3/21/2015 |
| Lead Directional Driller: | Randy Bernatow |
| Directional Driller | Bogdan Cristian |
| Other SSDS DD's : | Francisco Pauda |
| SSDS MWD Engineers : | Scott Trowbrigde |
| MWD : | Taylor Dunlop |
| MWD | 0 |

Geo Pilot Engineer :

First MWD Survey Depth

Last Wireline Survey

Last MWD Survey Depth
Bit Extrapolation @ TD

| Main Hole =====> | 1st Side Track =====> | 2nd Side Track =====> | 3rd Side Track =====> | 4th Side Track =====> |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 175.00 MWD | Tie On | Tie On | Tie On | Tie On |
| ESS | MWD | | | |
| Gyro | | | | |
| 5300.00 KOP | KOP-ST1 | KOP-ST2 | KOP-ST3 | KOP-ST4 |
| MWD | MWD | MWD | MWD | MWD |
| 12707.00 MWD | MWD | MWD | MWD | MWD |
| 12751.00 T.D. | T.D. | T.D. | T.D. | T.D. |

The following Sperry Drilling Services personnel, certify the above survey information to be accurate to the best of our knowledge:

Print Name : Randy Bernatow Print Name : Scott Trowbrigde Print Name : Francisco Pauda

Sign Name :  Sign Name :  Sign Name : 

Print Name : Bogdan Cristian Print Name : Taylor Dunlop Print Name :

Sign Name : Sign Name : Sign Name :

Examples of
Survey Types:

TieOn Tie On to Surface Casing (Assumed Vertical), Tie On to existing MWD Survey (prior drilled hole)
MWD Sperry-Sun Drilling Services (SSDS) Measurement While Drilling (MWD) Survey's
ESS Sperry-Sun Drilling Services (SSDS) Electronic Survey System (ESS) Survey's
Gyro Gyro Survey's ; Provided by third party vendor, or by Sperry-Sun Drilling Services (SSDS)
SS Single Shot (SS) Survey's ; Provided by Sperry-Sun Drilling Services (SSDS) or third party vendor.

Whiting Oil and Gas Corporation

Weld County, CO

Sec. 11-T10N-R58W (Razor 11H Pad)

Razor 11H-0215A

Plan C

Design: Actual Field Surveys

Sperry Drilling Services

Standard Report

13 April, 2015

Well Coordinates: 1,558,580.59 N, 3,463,470.61 E (40° 51' 16.78" N, 103° 49' 28.41" W)

Ground Level: 4,954.50 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 73

Centered on Well Razor 11H-0215A

KB 22 @ 4976.50usft (Frontier 26)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Design Report for Razor 11H-0215A - 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 |
| 175.00 | 0.32 | 69.04 | 175.00 | 0.17 | 0.46 | 0.16 | 0.18 |
| First Sperry MWD Survey @ 175.00 ft | | | | | | | |
| 359.00 | 0.46 | 63.77 | 358.99 | 0.69 | 1.60 | 0.65 | 0.08 |
| 450.00 | 0.42 | 108.68 | 449.99 | 0.74 | 2.24 | 0.69 | 0.37 |
| 542.00 | 0.34 | 146.59 | 541.99 | 0.40 | 2.71 | 0.34 | 0.28 |
| 634.00 | 2.32 | 177.36 | 633.96 | -1.68 | 2.95 | -1.75 | 2.21 |
| 726.00 | 4.81 | 179.61 | 725.78 | -7.40 | 3.06 | -7.47 | 2.71 |
| 818.00 | 6.82 | 175.92 | 817.30 | -16.71 | 3.48 | -16.78 | 2.22 |
| 1,002.00 | 9.10 | 169.04 | 999.52 | -41.90 | 7.02 | -42.04 | 1.34 |
| 1,094.00 | 9.91 | 170.19 | 1,090.25 | -56.84 | 9.75 | -57.04 | 0.90 |
| 1,186.00 | 10.52 | 171.96 | 1,180.80 | -72.96 | 12.28 | -73.21 | 0.75 |
| 1,277.00 | 11.04 | 177.61 | 1,270.19 | -89.89 | 13.80 | -90.17 | 1.29 |
| 1,369.00 | 12.56 | 182.92 | 1,360.25 | -108.68 | 13.66 | -108.95 | 2.03 |
| 1,460.00 | 13.98 | 189.04 | 1,448.82 | -129.42 | 11.43 | -129.64 | 2.19 |
| 1,552.00 | 14.77 | 191.33 | 1,537.94 | -151.89 | 7.38 | -152.02 | 1.06 |
| 1,643.00 | 15.56 | 194.52 | 1,625.77 | -175.08 | 2.04 | -175.09 | 1.26 |
| 1,798.00 | 15.63 | 192.69 | 1,775.07 | -215.58 | -7.76 | -215.36 | 0.32 |
| 1,914.00 | 14.04 | 189.84 | 1,887.20 | -244.69 | -13.60 | -244.33 | 1.51 |
| 2,006.00 | 13.23 | 188.34 | 1,976.60 | -266.10 | -17.03 | -265.67 | 0.96 |
| 2,097.00 | 11.72 | 185.70 | 2,065.45 | -285.60 | -19.46 | -285.11 | 1.77 |
| 2,189.00 | 13.85 | 203.74 | 2,155.20 | -304.99 | -24.83 | -304.37 | 4.89 |
| 2,280.00 | 12.78 | 201.18 | 2,243.76 | -324.35 | -32.85 | -323.55 | 1.34 |
| 2,372.00 | 12.27 | 201.67 | 2,333.57 | -342.92 | -40.13 | -341.96 | 0.57 |
| 2,463.00 | 13.13 | 210.54 | 2,422.35 | -360.81 | -48.96 | -359.65 | 2.34 |
| 2,555.00 | 11.65 | 209.38 | 2,512.20 | -377.91 | -58.83 | -376.53 | 1.63 |
| 2,646.00 | 11.03 | 207.65 | 2,601.43 | -393.62 | -67.37 | -392.05 | 0.78 |
| 2,738.00 | 10.32 | 208.21 | 2,691.83 | -408.68 | -75.35 | -406.93 | 0.78 |
| 2,830.00 | 10.82 | 198.16 | 2,782.28 | -424.15 | -81.94 | -422.25 | 2.07 |
| 2,922.00 | 10.40 | 199.40 | 2,872.71 | -440.19 | -87.39 | -438.17 | 0.52 |
| 3,013.00 | 12.30 | 196.23 | 2,961.92 | -457.24 | -92.83 | -455.10 | 2.20 |
| 3,104.00 | 13.91 | 191.18 | 3,050.55 | -477.28 | -97.66 | -475.03 | 2.17 |
| 3,196.00 | 12.11 | 192.28 | 3,140.19 | -497.56 | -101.85 | -495.21 | 1.97 |
| 3,287.00 | 11.77 | 180.89 | 3,229.23 | -516.17 | -104.03 | -513.77 | 2.61 |
| 3,378.00 | 10.54 | 178.84 | 3,318.51 | -533.77 | -104.01 | -531.37 | 1.42 |
| 3,470.00 | 11.79 | 180.12 | 3,408.77 | -551.59 | -103.85 | -549.18 | 1.39 |
| 3,562.00 | 11.63 | 178.18 | 3,498.86 | -570.25 | -103.58 | -567.85 | 0.46 |
| 3,653.00 | 14.36 | 188.44 | 3,587.53 | -590.59 | -104.95 | -588.15 | 3.92 |
| 3,745.00 | 14.80 | 185.99 | 3,676.57 | -613.56 | -107.85 | -611.05 | 0.82 |
| 3,837.00 | 15.40 | 191.53 | 3,765.39 | -637.22 | -111.51 | -634.62 | 1.70 |
| 4,019.00 | 12.90 | 189.47 | 3,941.86 | -680.94 | -119.69 | -678.16 | 1.40 |
| 4,111.00 | 11.18 | 186.86 | 4,031.83 | -699.93 | -122.44 | -697.08 | 1.96 |
| 4,202.00 | 10.46 | 184.36 | 4,121.21 | -716.93 | -124.13 | -714.03 | 0.94 |
| 4,293.00 | 12.31 | 193.11 | 4,210.43 | -734.61 | -126.95 | -731.66 | 2.78 |
| 4,477.00 | 10.52 | 189.92 | 4,390.78 | -770.27 | -134.30 | -767.14 | 1.03 |
| 4,568.00 | 9.89 | 190.04 | 4,480.34 | -786.14 | -137.09 | -782.95 | 0.69 |
| 4,660.00 | 8.37 | 187.45 | 4,571.17 | -800.56 | -139.34 | -797.32 | 1.71 |
| 4,751.00 | 7.45 | 188.87 | 4,661.31 | -812.96 | -141.11 | -809.67 | 1.03 |
| 4,843.00 | 7.17 | 193.21 | 4,752.56 | -824.44 | -143.34 | -821.11 | 0.67 |
| 4,936.00 | 4.97 | 190.58 | 4,845.03 | -834.05 | -145.40 | -830.67 | 2.38 |



Design Report for Razor 11H-0215A - Actual Field Surveys

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|
| 5,028.00 | 2.10 | 194.84 | 4,936.85 | -839.60 | -146.57 | -836.19 | 3.13 |
| 5,119.00 | 0.37 | 224.08 | 5,027.82 | -841.43 | -147.20 | -838.00 | 1.96 |
| 5,211.00 | 1.74 | 14.61 | 5,119.81 | -840.29 | -147.05 | -836.86 | 2.25 |
| 5,303.00 | 2.02 | 347.00 | 5,211.76 | -837.36 | -147.06 | -833.93 | 1.02 |
| 5,350.00 | 6.54 | 352.23 | 5,258.62 | -833.89 | -147.61 | -830.46 | 9.64 |
| 5,395.00 | 9.01 | 346.75 | 5,303.20 | -827.92 | -148.77 | -824.47 | 5.72 |
| 5,442.00 | 12.72 | 339.24 | 5,349.36 | -819.50 | -151.45 | -815.99 | 8.43 |
| 5,487.00 | 16.00 | 342.04 | 5,392.95 | -808.97 | -155.12 | -805.37 | 7.45 |
| 5,534.00 | 19.58 | 347.33 | 5,437.69 | -795.11 | -158.84 | -791.44 | 8.35 |
| 5,579.00 | 23.00 | 350.82 | 5,479.62 | -779.07 | -161.90 | -775.34 | 8.10 |
| 5,626.00 | 26.77 | 353.21 | 5,522.25 | -759.49 | -164.62 | -755.70 | 8.30 |
| 5,674.00 | 30.02 | 351.34 | 5,564.47 | -736.88 | -167.70 | -733.03 | 7.02 |
| 5,721.00 | 35.46 | 353.27 | 5,603.99 | -711.70 | -171.07 | -707.78 | 11.78 |
| 5,769.00 | 38.41 | 355.73 | 5,642.35 | -682.99 | -173.82 | -679.02 | 6.87 |
| 5,816.00 | 43.40 | 357.11 | 5,677.86 | -652.29 | -175.72 | -648.28 | 10.79 |
| 5,864.00 | 48.17 | 356.92 | 5,711.33 | -617.94 | -177.51 | -613.91 | 9.94 |
| 5,911.00 | 53.61 | 357.86 | 5,740.97 | -581.52 | -179.16 | -577.46 | 11.68 |
| 5,959.00 | 58.84 | 358.27 | 5,767.64 | -541.66 | -180.50 | -537.58 | 10.92 |
| 6,006.00 | 63.52 | 359.53 | 5,790.29 | -500.50 | -181.28 | -496.41 | 10.23 |
| 6,054.00 | 69.06 | 359.85 | 5,809.59 | -456.57 | -181.52 | -452.49 | 11.56 |
| 6,101.00 | 73.65 | 359.26 | 5,824.61 | -412.05 | -181.87 | -407.97 | 9.84 |
| 6,149.00 | 77.30 | 359.31 | 5,836.64 | -365.60 | -182.45 | -361.51 | 7.60 |
| 6,196.00 | 81.46 | 0.24 | 5,845.30 | -319.42 | -182.63 | -315.34 | 9.06 |
| 6,261.00 | 87.10 | 1.44 | 5,851.78 | -254.77 | -181.67 | -250.73 | 8.87 |
| 6,358.00 | 91.02 | 1.11 | 5,853.37 | -157.83 | -179.52 | -153.86 | 4.06 |
| 6,453.00 | 90.31 | 2.56 | 5,852.27 | -62.89 | -176.48 | -59.01 | 1.70 |
| 6,547.00 | 88.89 | 3.81 | 5,852.93 | 30.96 | -171.25 | 34.70 | 2.01 |
| 6,642.00 | 88.87 | 6.02 | 5,854.78 | 125.59 | -163.12 | 129.13 | 2.33 |
| 6,737.00 | 89.68 | 5.79 | 5,855.98 | 220.08 | -153.34 | 223.38 | 0.89 |
| 6,832.00 | 90.36 | 7.25 | 5,855.95 | 314.46 | -142.56 | 317.50 | 1.70 |
| 6,927.00 | 89.96 | 6.82 | 5,855.69 | 408.74 | -130.92 | 411.51 | 0.62 |
| 7,022.00 | 90.61 | 3.72 | 5,855.21 | 503.33 | -122.20 | 505.88 | 3.33 |
| 7,117.00 | 89.89 | 5.72 | 5,854.80 | 598.00 | -114.38 | 600.36 | 2.24 |
| 7,212.00 | 90.30 | 4.85 | 5,854.64 | 692.59 | -105.63 | 694.74 | 1.01 |
| 7,307.00 | 90.06 | 0.41 | 5,854.34 | 787.47 | -101.27 | 789.50 | 4.68 |
| 7,402.00 | 88.58 | 0.19 | 5,855.47 | 882.46 | -100.77 | 884.45 | 1.58 |
| 7,497.00 | 88.85 | 0.52 | 5,857.60 | 977.43 | -100.19 | 979.39 | 0.45 |
| 7,592.00 | 88.12 | 359.99 | 5,860.11 | 1,072.40 | -99.76 | 1,074.33 | 0.95 |
| 7,686.00 | 89.19 | 359.90 | 5,862.32 | 1,166.37 | -99.85 | 1,168.28 | 1.14 |
| 7,782.00 | 89.03 | 358.56 | 5,863.81 | 1,262.35 | -101.14 | 1,264.26 | 1.41 |
| 7,876.00 | 89.15 | 357.99 | 5,865.30 | 1,356.29 | -103.97 | 1,358.24 | 0.62 |
| 7,971.00 | 89.01 | 357.72 | 5,866.83 | 1,451.21 | -107.53 | 1,453.22 | 0.32 |
| 8,066.00 | 88.99 | 0.51 | 5,868.49 | 1,546.18 | -108.99 | 1,548.19 | 2.94 |
| 8,160.00 | 90.62 | 1.72 | 5,868.81 | 1,640.16 | -107.17 | 1,642.11 | 2.16 |
| 8,255.00 | 88.91 | 359.80 | 5,869.20 | 1,735.14 | -105.91 | 1,737.04 | 2.71 |
| 8,349.00 | 89.81 | 1.72 | 5,870.25 | 1,829.12 | -104.66 | 1,830.97 | 2.26 |
| 8,444.00 | 89.84 | 359.73 | 5,870.54 | 1,924.11 | -103.46 | 1,925.91 | 2.09 |
| 8,536.00 | 90.00 | 0.53 | 5,870.66 | 2,016.10 | -103.25 | 2,017.88 | 0.89 |
| 8,627.00 | 90.22 | 359.89 | 5,870.49 | 2,107.10 | -102.91 | 2,108.85 | 0.74 |
| 8,718.00 | 89.80 | 359.94 | 5,870.47 | 2,198.10 | -103.05 | 2,199.83 | 0.46 |
| 8,810.00 | 90.25 | 0.08 | 5,870.43 | 2,290.10 | -103.03 | 2,291.81 | 0.51 |

Design Report for Razor 11H-0215A - Actual Field Surveys

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|
| 8,900.00 | 88.40 | 0.31 | 5,871.49 | 2,380.09 | -102.73 | 2,381.77 | 2.07 |
| 8,992.00 | 88.11 | 0.41 | 5,874.30 | 2,472.05 | -102.15 | 2,473.69 | 0.33 |
| 9,083.00 | 90.25 | 0.11 | 5,875.60 | 2,563.03 | -101.74 | 2,564.65 | 2.37 |
| 9,175.00 | 89.72 | 359.51 | 5,875.62 | 2,655.03 | -102.04 | 2,656.63 | 0.87 |
| 9,266.00 | 88.42 | 357.56 | 5,877.10 | 2,745.98 | -104.37 | 2,747.61 | 2.58 |
| 9,358.00 | 88.42 | 357.38 | 5,879.64 | 2,837.86 | -108.43 | 2,839.55 | 0.20 |
| 9,450.00 | 88.70 | 357.33 | 5,881.95 | 2,929.73 | -112.67 | 2,931.50 | 0.31 |
| 9,542.00 | 90.46 | 357.00 | 5,882.62 | 3,021.61 | -117.22 | 3,023.45 | 1.95 |
| 9,633.00 | 90.19 | 358.54 | 5,882.11 | 3,112.54 | -120.76 | 3,114.44 | 1.72 |
| 9,726.00 | 89.88 | 0.00 | 5,882.05 | 3,205.53 | -121.95 | 3,207.43 | 1.60 |
| 9,816.00 | 88.92 | 0.70 | 5,882.99 | 3,295.52 | -121.40 | 3,297.39 | 1.32 |
| 9,909.00 | 90.12 | 1.03 | 5,883.77 | 3,388.50 | -119.99 | 3,390.32 | 1.34 |
| 10,001.00 | 89.01 | 0.80 | 5,884.47 | 3,480.49 | -118.52 | 3,482.25 | 1.23 |
| 10,093.00 | 89.62 | 1.30 | 5,885.57 | 3,572.47 | -116.84 | 3,574.17 | 0.86 |
| 10,184.00 | 89.82 | 1.08 | 5,886.01 | 3,663.44 | -114.95 | 3,665.08 | 0.33 |
| 10,276.00 | 90.39 | 1.04 | 5,885.84 | 3,755.43 | -113.25 | 3,757.01 | 0.62 |
| 10,369.00 | 90.30 | 0.86 | 5,885.28 | 3,848.41 | -111.70 | 3,849.94 | 0.22 |
| 10,460.00 | 89.30 | 359.34 | 5,885.60 | 3,939.41 | -111.55 | 3,940.91 | 2.00 |
| 10,552.00 | 88.73 | 359.40 | 5,887.18 | 4,031.39 | -112.56 | 4,032.89 | 0.62 |
| 10,644.00 | 88.98 | 359.02 | 5,889.02 | 4,123.36 | -113.83 | 4,124.87 | 0.49 |
| 10,736.00 | 89.13 | 358.66 | 5,890.54 | 4,215.33 | -115.69 | 4,216.85 | 0.42 |
| 10,827.00 | 90.09 | 358.84 | 5,891.16 | 4,306.31 | -117.67 | 4,307.85 | 1.07 |
| 10,919.00 | 91.81 | 358.69 | 5,889.63 | 4,398.27 | -119.66 | 4,399.83 | 1.88 |
| 11,010.00 | 90.96 | 358.37 | 5,887.43 | 4,489.21 | -121.99 | 4,490.81 | 1.00 |
| 11,102.00 | 88.60 | 358.67 | 5,887.79 | 4,581.17 | -124.37 | 4,582.80 | 2.59 |
| 11,194.00 | 90.05 | 1.64 | 5,888.87 | 4,673.15 | -124.12 | 4,674.75 | 3.59 |
| 11,285.00 | 88.09 | 0.76 | 5,890.35 | 4,764.12 | -122.21 | 4,765.65 | 2.36 |
| 11,377.00 | 87.83 | 0.70 | 5,893.62 | 4,856.05 | -121.04 | 4,857.54 | 0.29 |
| 11,468.00 | 89.03 | 2.21 | 5,896.12 | 4,946.98 | -118.73 | 4,948.40 | 2.12 |
| 11,561.00 | 87.87 | 359.38 | 5,898.63 | 5,039.93 | -117.44 | 5,041.29 | 3.29 |
| 11,652.00 | 87.65 | 357.41 | 5,902.19 | 5,130.82 | -119.99 | 5,132.22 | 2.18 |
| 11,743.00 | 90.86 | 358.31 | 5,903.37 | 5,221.74 | -123.38 | 5,223.18 | 3.66 |
| 11,835.00 | 91.17 | 358.01 | 5,901.74 | 5,313.67 | -126.34 | 5,315.17 | 0.47 |
| 11,926.00 | 88.88 | 358.21 | 5,901.70 | 5,404.62 | -129.34 | 5,406.15 | 2.53 |
| 12,018.00 | 88.47 | 359.82 | 5,903.83 | 5,496.58 | -130.92 | 5,498.12 | 1.81 |
| 12,110.00 | 88.68 | 359.48 | 5,906.12 | 5,588.55 | -131.48 | 5,590.08 | 0.43 |
| 12,201.00 | 87.35 | 1.27 | 5,909.27 | 5,679.48 | -130.89 | 5,680.99 | 2.45 |
| 12,293.00 | 87.28 | 0.18 | 5,913.58 | 5,771.37 | -129.72 | 5,772.83 | 1.19 |
| 12,385.00 | 87.46 | 0.04 | 5,917.80 | 5,863.28 | -129.55 | 5,864.71 | 0.25 |
| 12,476.00 | 87.90 | 359.79 | 5,921.49 | 5,954.20 | -129.68 | 5,955.61 | 0.56 |
| 12,568.00 | 89.09 | 0.63 | 5,923.90 | 6,046.17 | -129.34 | 6,047.55 | 1.58 |
| 12,659.00 | 90.34 | 0.72 | 5,924.36 | 6,137.16 | -128.27 | 6,138.49 | 1.38 |
| 12,707.00 | 90.61 | 0.81 | 5,923.96 | 6,185.15 | -127.63 | 6,186.46 | 0.59 |
| Final Sperry MWD Survey @ 12707.00 ft | | | | | | | |
| 12,751.00 | 90.61 | 0.81 | 5,923.49 | 6,229.14 | -127.01 | 6,230.43 | 0.00 |
| Straight Line Projection to TD @ 12751.00 ft | | | | | | | |

Design Report for Razor 11H-0215A - Actual Field Surveys**Design Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
|-----------------------------|-----------------------------|-------------------|-----------------|--|
| | | +N/-S (usft) | +E/-W (usft) | |
| 175.00 | 175.00 | 0.17 | 0.46 | First Sperry MWD Survey @ 175.00 ft |
| 12,707.00 | 5,923.96 | 6,185.15 | -127.63 | Final Sperry MWD Survey @ 12707.00 ft |
| 12,751.00 | 5,923.49 | 6,229.14 | -127.01 | Straight Line Projection to TD @ 12751.00 ft |

Vertical Section Information

| Angle Type | Target | Azimuth (°) | Origin Type | Origin | | Start TVD (usft) |
|---------------|-----------------------------------|----------------|----------------|-----------------|-----------------|------------------------|
| | | | | +N/-S (usft) | +E/-W (usft) | |
| Target | Razor 11H-0215A_Rev C0_BHL Tgt | 358.74 | Slot | 0.00 | 0.00 | 0.00 |

Survey tool program

| From (usft) | To (usft) | Survey/Plan | Survey Tool |
|----------------|--------------|----------------------------------|-----------------|
| 175.00 | 1,798.00 | Surface_MWD+IFR1+MS+sag | MWD+IFR1+MS+sag |
| 1,914.00 | 6,261.00 | Vertical & Build_MWD+IFR1+MS+sag | MWD+IFR1+MS+sag |
| 6,358.00 | 12,707.00 | Lateral_MWD+IFR1+MS+sag | MWD+IFR1+MS+sag |
| 12,751.00 | 12,751.00 | Projection to Bit_Blind | BLIND |

Casing Details

| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (") | Hole Diameter (") |
|-----------------------------|-----------------------------|------------------------------------|---------------------------|-------------------------|
| 1,855.00 | 1,830.06 | 9 5/8" (Estimated from Field Data) | 9-5/8 | 13-1/2 |
| 6,297.00 | 5,853.15 | 7" (Estimated from Field Data) | 7 | 8-3/4 |

Design Report for Razor 11H-0215A - 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 11H_Sec. 02 & - actual wellpath hits target center - Polygon | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,558,580.59 | 3,463,470.61 | 40° 51' 16.780 N | 103° 49' 28.410 W |
| Point 1 | | | | 0.00 | 6,865.46 | -4,883.43 | 1,565,352.65 | 3,458,458.28 | |
| Point 2 | | | | 0.00 | 6,890.10 | 215.09 | 1,565,473.61 | 3,463,555.49 | |
| Point 3 | | | | 0.00 | -368.58 | 271.90 | 1,558,217.21 | 3,463,749.43 | |
| Point 4 | | | | 0.00 | -405.61 | -4,823.63 | 1,558,083.91 | 3,458,655.44 | |
| Point 5 | | | | 0.00 | 6,865.46 | -4,883.43 | 1,565,352.65 | 3,458,458.28 | |
| Razor 11H_Sec. 11 & - actual wellpath hits target center - Polygon | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,558,580.59 | 3,463,470.61 | 40° 51' 16.780 N | 103° 49' 28.410 W |
| Point 1 | | | | 0.00 | -605.61 | -4,823.63 | 1,557,883.95 | 3,458,659.22 | |
| Point 2 | | | | 0.00 | -568.58 | 271.90 | 1,558,017.24 | 3,463,753.21 | |
| Point 3 | | | | 0.00 | -8,321.36 | 337.33 | 1,550,266.99 | 3,463,965.10 | |
| Point 4 | | | | 0.00 | -8,339.09 | -4,791.18 | 1,550,152.36 | 3,458,837.78 | |
| Point 5 | | | | 0.00 | -605.61 | -4,823.63 | 1,557,883.95 | 3,458,659.22 | |
| Razor 11H_Sec. 11-T1 - actual wellpath hits target center - Polygon | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,558,580.59 | 3,463,470.61 | 40° 51' 16.780 N | 103° 49' 28.410 W |
| Point 1 | | | | 0.00 | 2,143.87 | -4,927.52 | 1,560,631.01 | 3,458,503.40 | |
| Point 2 | | | | 0.00 | 2,180.91 | 350.29 | 1,560,767.76 | 3,463,779.64 | |
| Point 3 | | | | 0.00 | -468.58 | 371.90 | 1,558,119.11 | 3,463,851.30 | |
| Point 4 | | | | 0.00 | -505.61 | -4,923.63 | 1,557,982.04 | 3,458,557.35 | |
| Point 5 | | | | 0.00 | -468.58 | 371.90 | 1,558,119.11 | 3,463,851.30 | |
| Point 6 | | | | 0.00 | -3,116.96 | 393.52 | 1,555,471.58 | 3,463,922.95 | |
| Point 7 | | | | 0.00 | -3,155.09 | -4,920.29 | 1,555,333.06 | 3,458,610.75 | |
| Point 8 | | | | 0.00 | 2,143.87 | -4,927.52 | 1,560,631.01 | 3,458,503.40 | |
| Razor 11H_Sec. 14-T1 - actual wellpath hits target center - Polygon | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,558,580.59 | 3,463,470.61 | 40° 51' 16.780 N | 103° 49' 28.410 W |
| Point 1 | | | | 0.00 | -3,155.09 | -4,920.29 | 1,555,333.06 | 3,458,610.75 | |
| Point 2 | | | | 0.00 | -3,116.96 | 393.52 | 1,555,471.58 | 3,463,922.95 | |
| Point 3 | | | | 0.00 | -8,421.36 | 437.33 | 1,550,168.89 | 3,464,066.97 | |
| Point 4 | | | | 0.00 | -8,439.09 | -4,891.18 | 1,550,050.49 | 3,458,739.68 | |
| Point 5 | | | | 0.00 | -3,155.09 | -4,920.29 | 1,555,333.06 | 3,458,610.75 | |
| Razor 11H_Sec. 02-T1 - actual wellpath hits target center - Polygon | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,558,580.59 | 3,463,470.61 | 40° 51' 16.780 N | 103° 49' 28.410 W |
| Point 1 | | | | 0.00 | 7,465.46 | -4,983.43 | 1,565,950.66 | 3,458,346.96 | |
| Point 2 | | | | 0.00 | 7,490.10 | 315.09 | 1,566,075.40 | 3,463,644.13 | |
| Point 3 | | | | 0.00 | 2,180.91 | 350.29 | 1,560,767.76 | 3,463,779.64 | |
| Point 4 | | | | 0.00 | 2,143.87 | -4,927.52 | 1,560,631.01 | 3,458,503.40 | |
| Point 5 | | | | 0.00 | 7,465.46 | -4,983.43 | 1,565,950.66 | 3,458,346.96 | |
| Razor 11H-0215A_Rev - actual wellpath misses target center by 662.92usft at 12751.00usft MD (5923.49 TVD, 6229.14 N, -127.01 E) - Point | 0.00 | 0.00 | 5,855.00 | 6,888.08 | -150.92 | 1,565,464.67 | 3,463,189.58 | 40° 52' 24.840 N | 103° 49' 30.375 W |

Directional Difficulty Index

| | | | |
|-------------------------------------|----------------|-------------------------------|----------------------------------|
| Average Dogleg over Survey: | 2.07 °/100usft | Maximum Dogleg over Survey: | 11.78 °/100usft at 5,721.00 usft |
| Net Tortousity applicable to Plans: | 0.65 °/100usft | Directional Difficulty Index: | 6.654 |

Audit Info

North Reference Sheet for Sec. 11-T10N-R58W (Razor 11H Pad) - Razor 11H-0215A - Plan C

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 @ 4976.50usft (Frontier 26). Northing and Easting are relative to Razor 11H-0215A

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: 1.00001235

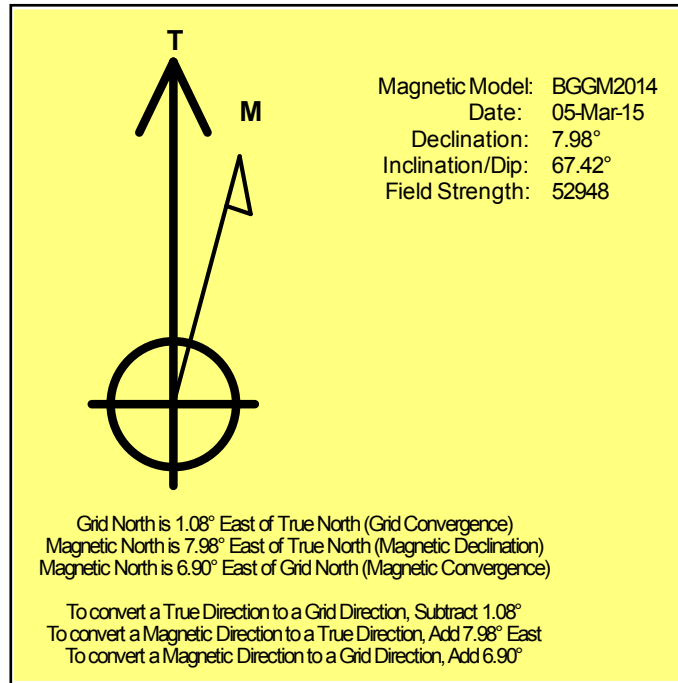
Grid Coordinates of Well: 1,558,580.59 usft N, 3,463,470.61 usft E

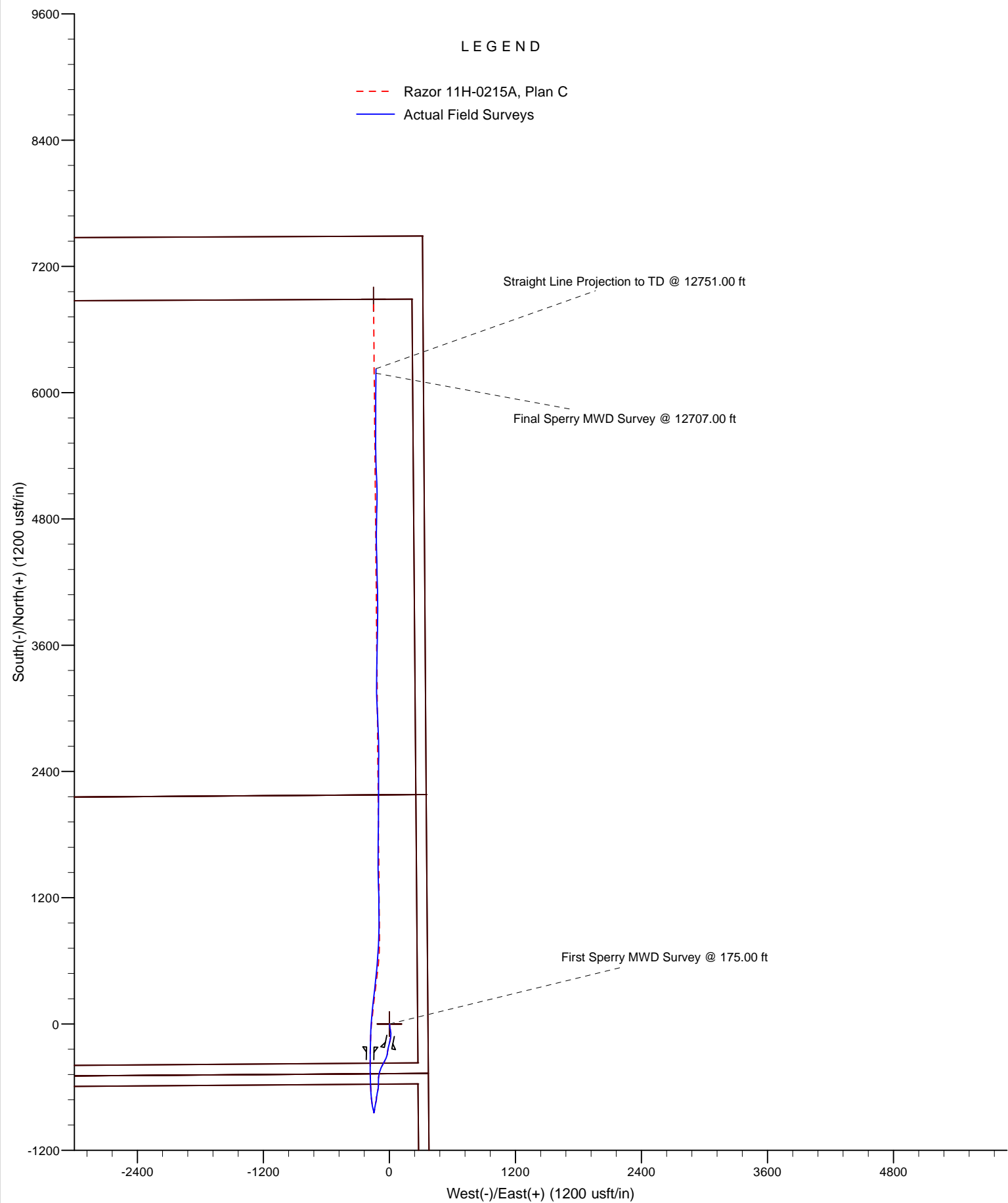
Geographical Coordinates of Well: 40° 51' 16.78" N, 103° 49' 28.41" W

Grid Convergence at Surface is: 1.08°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,751.00usft
the Bottom Hole Displacement is 6,230.44usft in the Direction of 358.83° (True).

Magnetic Convergence at surface is: -6.90° (5 March 2015, , BGGM2014)





Project: Weld County, CO
Site: Sec. 11-T10N-R58W (Razor 11H Pad)
Well: Razor 11H-0215A

Whiting Oil and Gas Corporation

HALLIBURTON
Sperry Drilling

