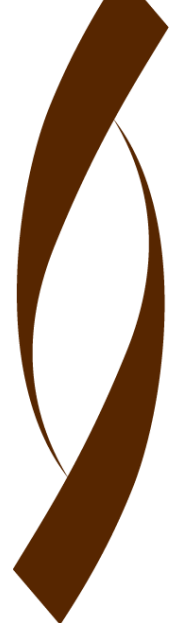
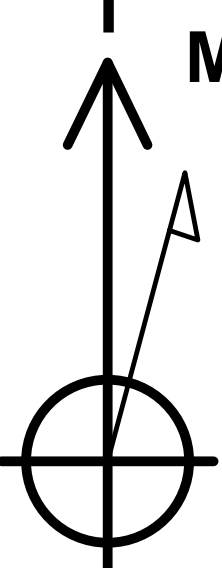




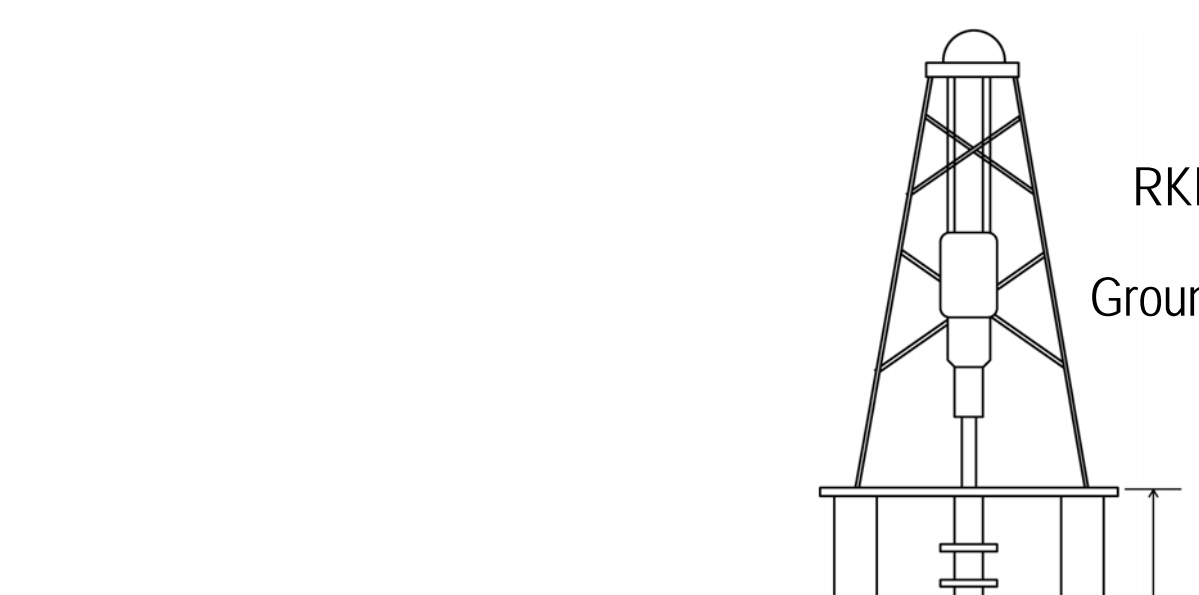
Project: Weld County, Colorado (NAD 83)
Site: Sec.12-T10N-R58W
Well: Razor #12F-0108B
Wellbore: Wellbore #1 / Job #1523841
Design: Plan 2 07-27-15
Rig: Unit 409



PHOENIX
TECHNOLOGY SERVICES



Azimuths to True North
Magnetic North: 7.63°
Magnetic Field
Strength: 52978.5snT
Dip Angle: 67.35°
Date: 7/27/2015
Model: HDGM



RKB @ 4957.80usft (Unit 409)
Ground Level: 4936.80

| WELL DETAILS | | | | | | |
|--------------|-------|-------|-------------|--------------------------|-----------|-------------|
| | +N/-S | +E/-W | Northing | Ground Level: Easting | Latitude | Longitude |
| | 0.00 | 0.00 | 1558617.144 | 4936.80 3465405.194 | 40.854661 | -103.817564 |

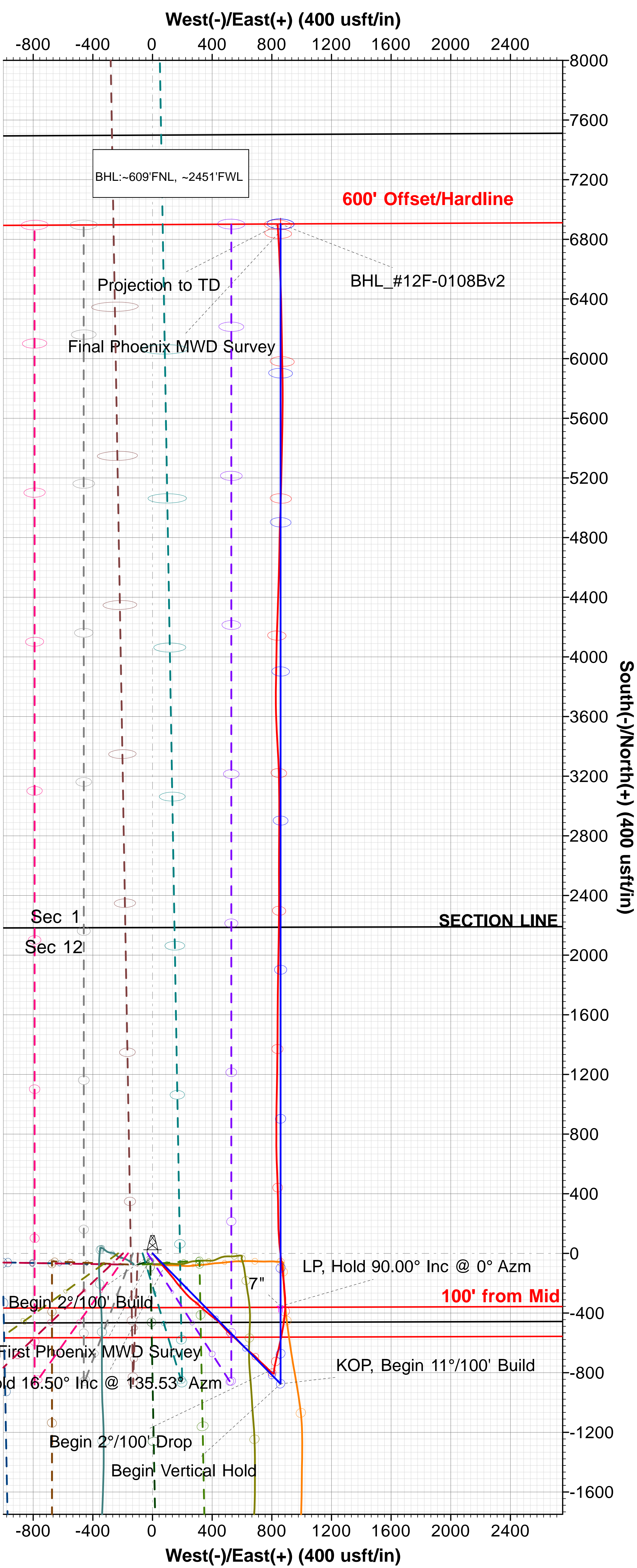
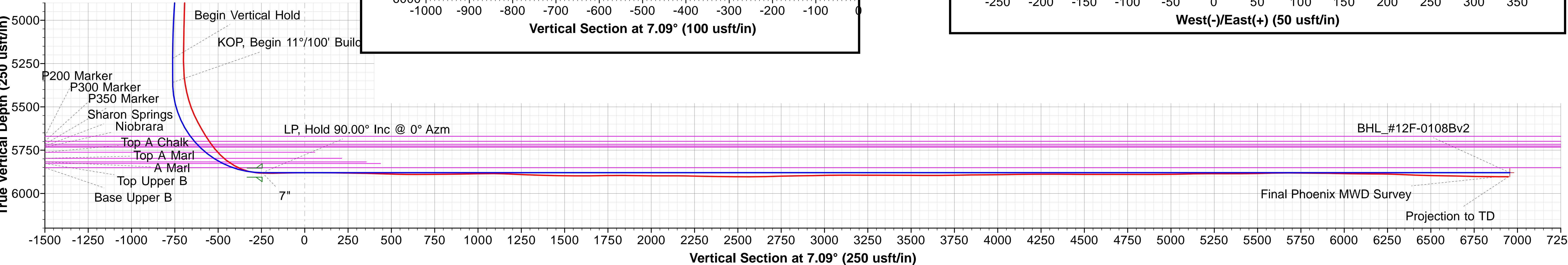
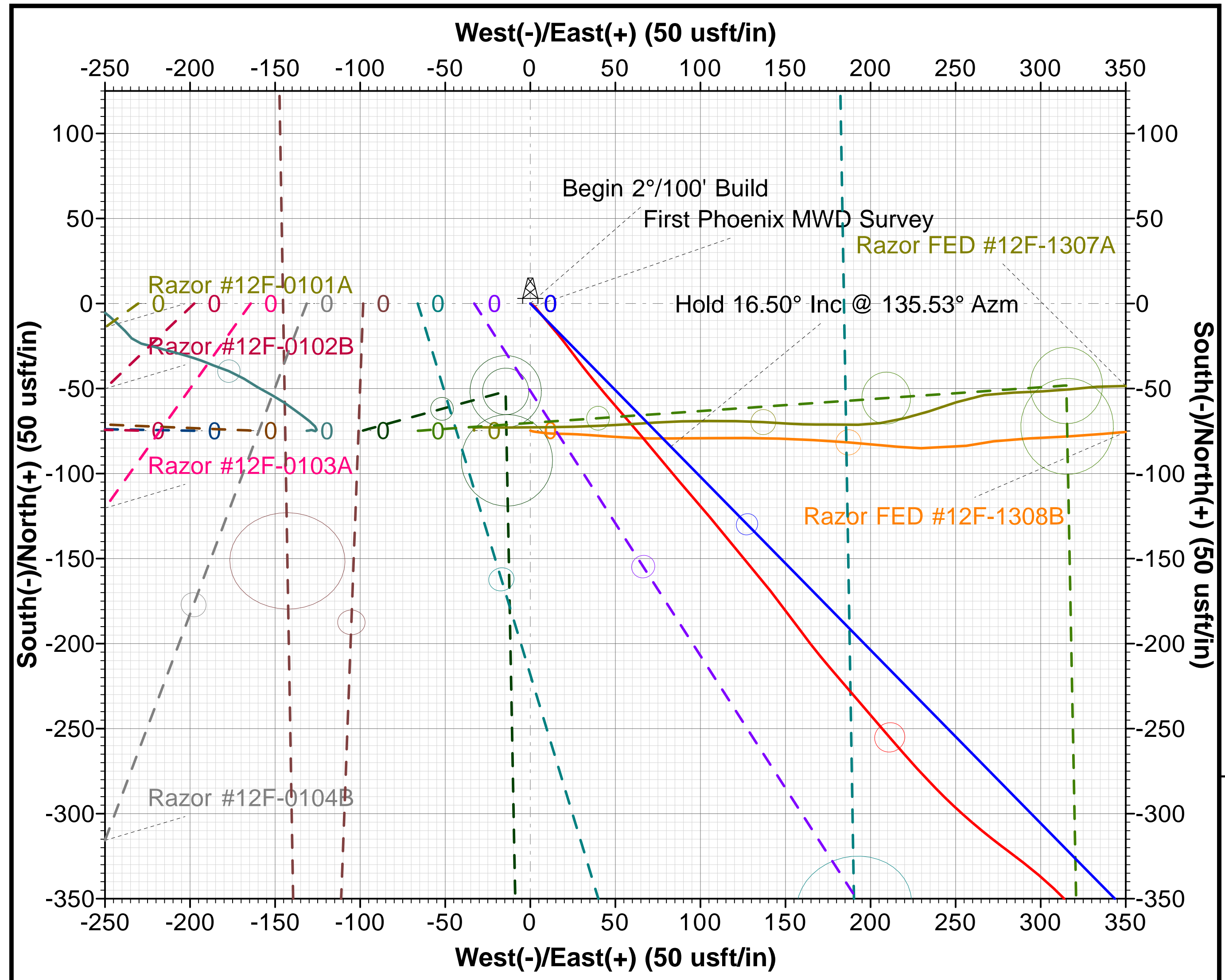
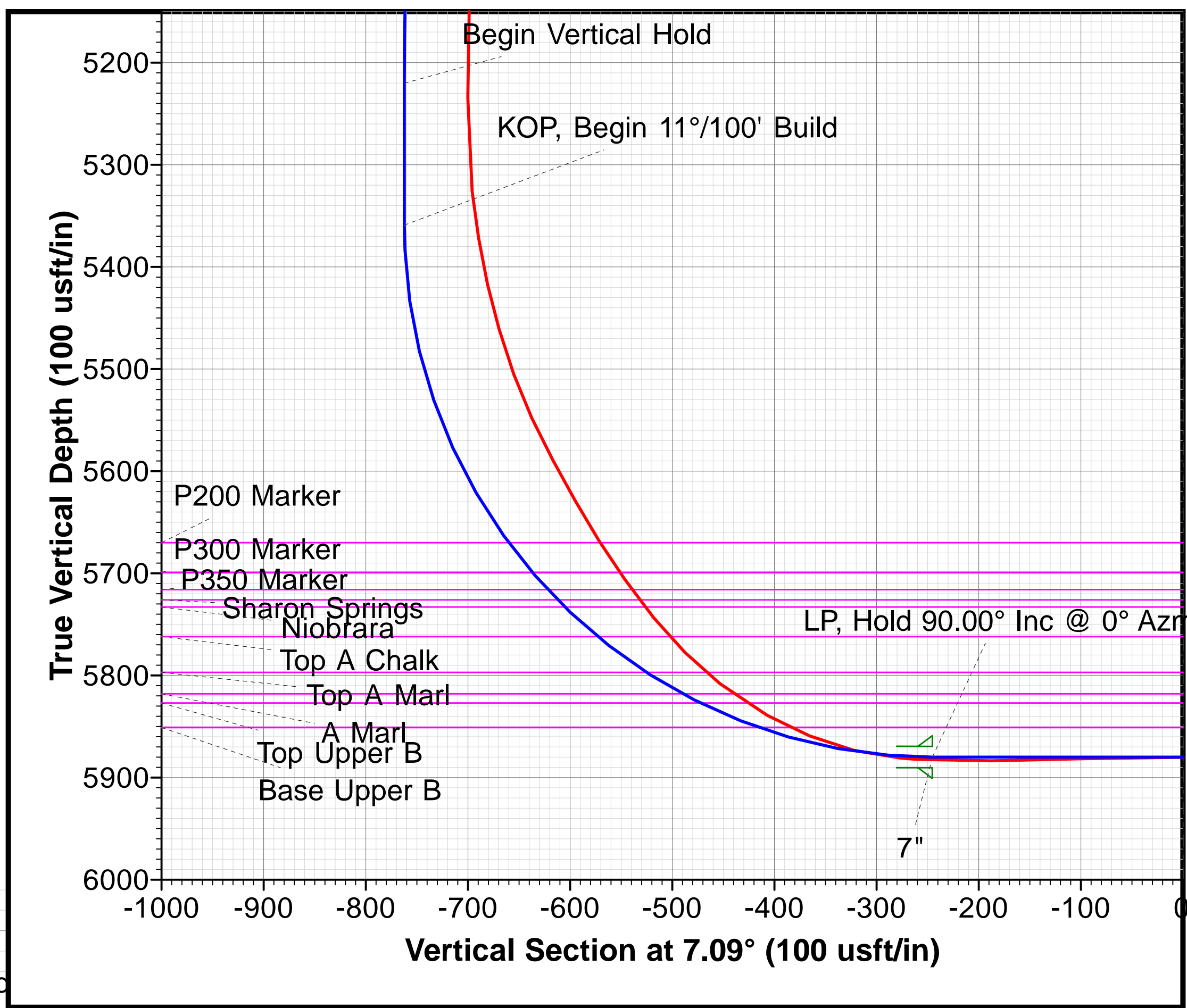
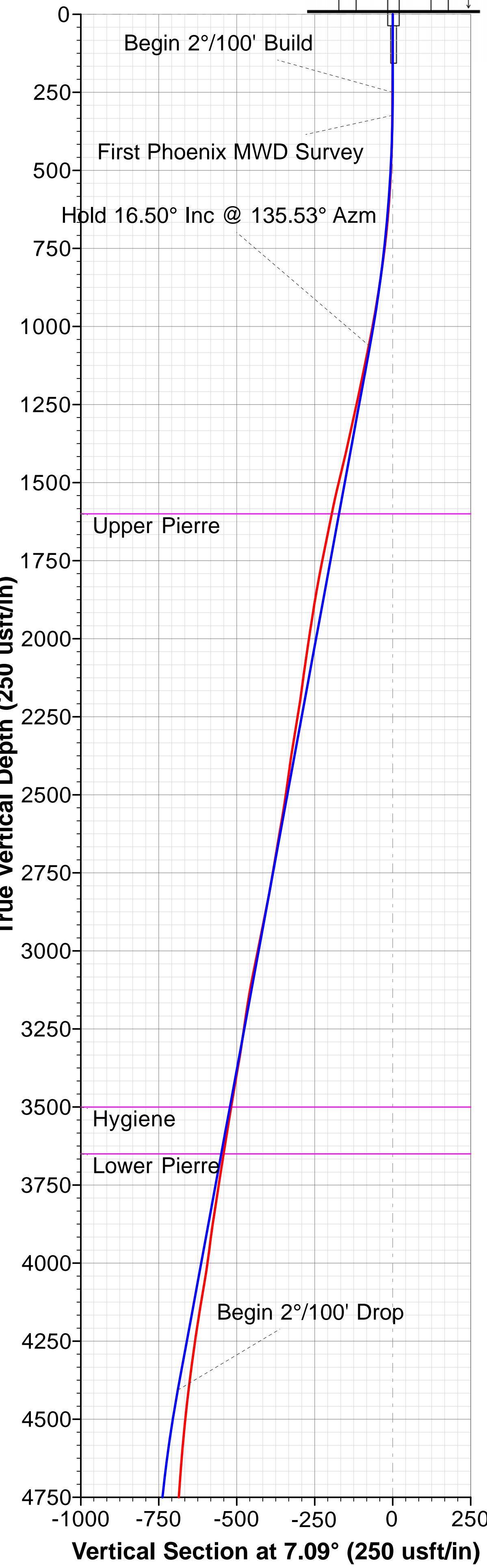
| SECTION DETAILS | | | | | | | | | | |
|-----------------|----------|-------|--------|---------|---------|--------|-------|--------|---------|--|
| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | TFace | VFace | Target | Annotation |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 2 | 250.00 | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 0.00 | 0.00 | | Begin 2°/100' Build |
| 3 | 1074.99 | 16.50 | 135.53 | 1063.64 | -84.18 | 82.65 | 2.00 | 135.53 | -73.33 | Hold 16.50° Inc @ 135.53° Azm |
| 4 | 4561.56 | 16.50 | 135.53 | 4406.63 | -790.82 | 776.35 | 0.00 | 0.00 | -688.89 | Begin 2°/100' Drop |
| 5 | 5386.56 | 0.00 | 0.00 | 5220.27 | -875.00 | 859.00 | 2.00 | 180.00 | -762.23 | Begin Vertical Hold |
| 6 | 5525.42 | 0.00 | 0.00 | 5359.13 | -875.00 | 859.00 | 0.00 | 0.00 | -762.23 | KOP, Begin 11°/100' Build |
| 7 | 6343.60 | 90.00 | 0.00 | 5880.00 | -354.13 | 859.00 | 1.00 | 0.00 | -245.35 | LP, Hold 90.00° Inc @ 0° Azm |
| 8 | 13600.32 | 90.00 | 0.00 | 5880.00 | 6902.59 | 859.01 | 0.00 | 0.00 | 6955.83 | BHL_#12F-0108Bv2 TD at 13600.30' MD |

| DESIGN TARGET DETAILS | | | | | | | |
|-----------------------|---------|---------|--------|-------------|-------------|-----------|-------------|
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
| BHL_#12F-0108Bv2 | 5880.00 | 6902.59 | 859.01 | 1565534.786 | 3466133.093 | 40.873606 | -103.814458 |

| LEGEND | |
|--------|---|
| — | Razor FED #12F-1305A, OH / Job# 1524099, Plan 1 V0 |
| — | Razor FED #12F-1308B, Wellbore #1 / Job #1523835, Surveys (Unit 409) V0 |
| — | Razor #12F-0105A, OH / Job# 1524095, Plan 1 V0 |
| — | Razor #12F-0106B, OH / Job# 1524096, Plan 1 V0 |
| — | Razor FED #12F-1302B, OH / Job# 1524098, Plan 1 V0 |
| — | Razor #12F-0104B, Wellbore #1 / Job #1523838, Plan 1 06-24-15 V0 |
| — | Razor #12F-0108B, Wellbore #1 / Job #1523841, Surveys (Unit 409) V0 |
| — | Razor FED #12F-1307A, Wellbore #1 / Job #1523836, Surveys (Unit 409) V0 |
| — | Razor FED #12F-1303A, Wellbore #1 / Job #1523837, Plan 1 06-24-15 V0 |
| — | Razor #12F-0107A, Wellbore #1 / Job #1523840, Plan 1 06-24-15 V0 |
| — | Razor FED #12F-1301A, OH / Job# 1524097, Plan 1 V0 |
| — | Razor FED #12F-1304B, Wellbore #1, Surveys V0 |
| — | Razor #12F-0101A, OH / Job# 1524093, Plan 1 V0 |
| — | Razor FED #12F-1306B, OH / Job# 1524100, Plan 1 V0 |
| — | Razor #12F-0103A, OH / Job #1523839, Plan 1 06-24-15 V0 |
| — | Razor #12F-0102B, OH / Job# 1524094, Plan 1 V0 |
| — | Plan 2 07-27-15 |

| FORMATION TOP DETAILS | | | | |
|-----------------------|---------|----------------|----------|--------|
| TVDPath | MDPath | Formation | DipAngle | DipDir |
| 1600.00 | 1634.39 | Upper Pierre | 0.00 | 7.09 |
| 3500.00 | 3615.99 | Hygiene | 0.00 | 7.09 |
| 3650.00 | 3772.44 | Lower Pierre | 0.00 | 7.09 |
| 5670.00 | 5858.54 | P200 Marker | 0.00 | 7.09 |
| 5699.00 | 5895.70 | P300 Marker | 0.00 | 7.09 |
| 5716.00 | 5918.57 | P350 Marker | 0.00 | 7.09 |
| 5726.00 | 5932.47 | Sharon Springs | 0.00 | 7.09 |
| 5733.00 | 5942.43 | Niobrara | 0.00 | 7.09 |
| 5762.00 | 5986.01 | Top A Chalk | 0.00 | 7.09 |
| 5797.00 | 6045.50 | Top A Marl | 0.00 | 7.09 |
| 5818.00 | 6086.86 | A Marl | 0.00 | 7.09 |
| 5827.00 | 6106.58 | Top Upper B | 0.00 | 7.09 |
| 5851.00 | 6168.96 | Base Upper B | 0.00 | 7.09 |
| 5851.00 | 6168.96 | Top Lower B | 0.00 | 7.09 |

Map System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone Name: Colorado Northern Zone
Local Origin: Well Razor #12F-0108B, True North
Latitude: 40.854661
Longitude: -103.817564
Grid East: 3465405.194
Grid North: 1558617.144
Scale Factor: 1.000
Geomagnetic Model: HDGM
Sample Date: 27-Jul-15
Magnetic Declination: 7.63°
Dip Angle from Horizontal: 67.35°
Magnetic Field Strength: 52979
To convert a Magnetic Direction to a Grid Direction, Add 6.55°
To convert a Magnetic Direction to a True Direction, Add 7.63° East
To convert a True Direction to a Grid Direction, Subtract 1.09°





Whiting Oil & Gas Corporation

Weld County, Colorado (NAD 83)

Sec.12-T10N-R58W

Razor FED #12F-0108B

Wellbore #1 / Job #1523841

Survey: Phoenix MWD Surveys

Standard Survey Report

18 August, 2015





Phoenix Technology Services LP

Survey Report



| | | | |
|------------------|--------------------------------|-------------------------------------|------------------------------|
| Company: | Whiting Oil & Gas Corporation | Local Co-ordinate Reference: | Well Razor FED #12F-0108B |
| Project: | Weld County, Colorado (NAD 83) | TVD Reference: | RKB @ 4957.80usft (Unit 409) |
| Site: | Sec.12-T10N-R58W | MD Reference: | RKB @ 4957.80usft (Unit 409) |
| Well: | Razor FED #12F-0108B | North Reference: | True |
| Wellbore: | Wellbore #1 / Job #1523841 | Survey Calculation Method: | Minimum Curvature |
| Design: | Surveys (Unit 409) | Database: | Compass 5000 RMR |

| | | | |
|--------------------|--------------------------------|----------------------|----------------|
| Project | Weld County, Colorado (NAD 83) | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | |

| | | | | | | | | |
|-----------------------|----------|------------------|---------------|---------|------------|-------------------|------|---|
| Site | | Sec.12-T10N-R58W | | | | | | |
| Site Position: | | Northing: | 1,558,542.326 | usft | Latitude: | 40.854456 | | |
| From: | Lat/Long | Easting: | 3,465,406.640 | usft | Longitude: | -103.817564 | | |
| Position Uncertainty: | 0.00 | usft | Slot Radius: | 13-3/16 | " | Grid Convergence: | 1.09 | ° |

| Well | | Razor FED #12F-0108B | | | | |
|----------------------|-------|----------------------|---------------------|--------------------|---------------|---------------|
| Well Position | +N/-S | 0.00 usft | Northing: | 1,558,617.163 usft | Latitude: | 40.854661 |
| | +E/-W | 0.00 usft | Easting: | 3,465,405.194 usft | Longitude: | -103.817564 |
| Position Uncertainty | | 0.00 usft | Wellhead Elevation: | 0.00 usft | Ground Level: | 4,936.80 usft |

| | | | | | |
|------------------|----------------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 / Job #1523841 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | HDGM | 7/27/2015 | 7.63 | 67.35 | 52,979 |

| | | | | | |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|
| Design | Surveys (Unit 409) | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) | |
| | 0.00 | 0.00 | 0.00 | 7.09 | |

| | | | | | |
|-----------------------|------------------|--|---------------------|---|--|
| Survey Program | Date | 8/6/2015 | | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description | |
| 324.00 | 13,515.00 | Phoenix MWD Surveys (Wellbore #1 / Job | PHX+MWD+IFR1+SAG+MS | PHX+OWSG MWD + IFR1 + Sag + Multi-Station Corre | |

| | | | | | | | | | |
|---------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|
| 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 |
| 324.00 | 0.99 | 124.66 | 323.98 | -1.59 | 2.30 | -1.30 | 0.31 | 0.31 | 0.00 |
| First Phoenix MWD Survey | | | | | | | | | |
| 417.00 | 2.16 | 140.74 | 416.95 | -3.41 | 4.07 | -2.88 | 1.33 | 1.26 | 17.29 |
| 509.00 | 3.79 | 142.04 | 508.82 | -7.15 | 7.04 | -6.22 | 1.77 | 1.77 | 1.41 |
| 601.00 | 6.25 | 138.59 | 600.46 | -13.30 | 12.22 | -11.69 | 2.69 | 2.67 | -3.75 |
| 694.00 | 8.05 | 142.26 | 692.73 | -22.25 | 19.56 | -19.66 | 2.00 | 1.94 | 3.95 |
| 786.00 | 10.65 | 142.95 | 783.50 | -34.13 | 28.62 | -30.33 | 2.83 | 2.83 | 0.75 |
| 879.00 | 12.62 | 140.03 | 874.59 | -48.77 | 40.33 | -43.42 | 2.21 | 2.12 | -3.14 |
| 971.00 | 14.81 | 139.00 | 963.96 | -65.35 | 54.50 | -58.13 | 2.40 | 2.38 | -1.12 |
| 1,064.00 | 16.55 | 140.30 | 1,053.50 | -84.52 | 70.76 | -75.14 | 1.91 | 1.87 | 1.40 |



Phoenix Technology Services LP

Survey Report



| | | | |
|------------------|--------------------------------|-------------------------------------|------------------------------|
| Company: | Whiting Oil & Gas Corporation | Local Co-ordinate Reference: | Well Razor FED #12F-0108B |
| Project: | Weld County, Colorado (NAD 83) | TVD Reference: | RKB @ 4957.80usft (Unit 409) |
| Site: | Sec. 12-T10N-R58W | MD Reference: | RKB @ 4957.80usft (Unit 409) |
| Well: | Razor FED #12F-0108B | North Reference: | True |
| Wellbore: | Wellbore #1 / Job #1523841 | Survey Calculation Method: | Minimum Curvature |
| Design: | Surveys (Unit 409) | Database: | Compass 5000 RMR |

| Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 1,156.00 | 17.03 | 139.69 | 1,141.57 | -104.87 | 87.85 | -93.23 | 0.56 | 0.52 | -0.66 |
| 1,248.00 | 17.50 | 139.41 | 1,229.43 | -125.65 | 105.56 | -111.66 | 0.52 | 0.51 | -0.30 |
| 1,432.00 | 18.06 | 141.80 | 1,404.64 | -169.07 | 141.20 | -150.35 | 0.50 | 0.30 | 1.30 |
| 1,524.00 | 18.78 | 143.80 | 1,491.93 | -192.23 | 158.77 | -171.16 | 1.04 | 0.78 | 2.17 |
| 1,616.00 | 17.26 | 139.23 | 1,579.42 | -214.52 | 176.43 | -191.10 | 2.26 | -1.65 | -4.97 |
| 1,801.00 | 16.36 | 139.45 | 1,756.51 | -255.10 | 211.29 | -227.07 | 0.49 | -0.49 | 0.12 |
| 1,844.00 | 15.92 | 138.91 | 1,797.82 | -264.15 | 219.10 | -235.08 | 1.08 | -1.02 | -1.26 |
| 1,982.00 | 14.08 | 134.67 | 1,931.11 | -290.22 | 243.48 | -257.94 | 1.55 | -1.33 | -3.07 |
| 2,074.00 | 15.73 | 130.39 | 2,020.02 | -306.17 | 260.94 | -271.62 | 2.15 | 1.79 | -4.65 |
| 2,166.00 | 15.34 | 126.40 | 2,108.66 | -321.47 | 280.24 | -284.42 | 1.24 | -0.42 | -4.34 |
| 2,258.00 | 14.67 | 129.88 | 2,197.52 | -336.16 | 298.97 | -296.69 | 1.22 | -0.73 | 3.78 |
| 2,350.00 | 15.55 | 136.56 | 2,286.35 | -352.59 | 316.39 | -310.84 | 2.12 | 0.96 | 7.26 |
| 2,442.00 | 14.81 | 132.51 | 2,375.14 | -369.49 | 333.54 | -325.49 | 1.41 | -0.80 | -4.40 |
| 2,534.00 | 14.45 | 126.93 | 2,464.16 | -384.33 | 351.38 | -338.02 | 1.58 | -0.39 | -6.07 |
| 2,626.00 | 17.07 | 129.30 | 2,552.70 | -399.78 | 371.01 | -350.93 | 2.93 | 2.85 | 2.58 |
| 2,718.00 | 18.43 | 129.63 | 2,640.31 | -417.61 | 392.66 | -365.95 | 1.48 | 1.48 | 0.36 |
| 2,810.00 | 18.09 | 125.45 | 2,727.69 | -435.17 | 415.50 | -380.56 | 1.47 | -0.37 | -4.54 |
| 2,902.00 | 17.48 | 133.53 | 2,815.30 | -452.97 | 437.16 | -395.55 | 2.76 | -0.66 | 8.78 |
| 3,086.00 | 17.63 | 139.13 | 2,990.74 | -493.08 | 475.43 | -430.63 | 0.92 | 0.08 | 3.04 |
| 3,177.00 | 17.04 | 137.41 | 3,077.61 | -513.32 | 493.47 | -448.48 | 0.86 | -0.65 | -1.89 |
| 3,269.00 | 15.64 | 132.93 | 3,165.90 | -531.69 | 511.67 | -464.47 | 2.05 | -1.52 | -4.87 |
| 3,361.00 | 14.11 | 130.12 | 3,254.81 | -547.36 | 529.33 | -477.84 | 1.84 | -1.66 | -3.05 |
| 3,454.00 | 16.68 | 130.93 | 3,344.47 | -563.41 | 548.08 | -491.46 | 2.77 | 2.76 | 0.87 |
| 3,545.00 | 16.01 | 134.94 | 3,431.79 | -580.84 | 566.83 | -506.43 | 1.44 | -0.74 | 4.41 |
| 3,638.00 | 15.14 | 134.63 | 3,521.38 | -598.43 | 584.56 | -521.70 | 0.94 | -0.94 | -0.33 |
| 3,729.00 | 14.68 | 133.08 | 3,609.31 | -614.65 | 601.43 | -535.72 | 0.67 | -0.51 | -1.70 |
| 3,821.00 | 15.51 | 131.83 | 3,698.14 | -630.82 | 619.12 | -549.58 | 0.97 | 0.90 | -1.36 |
| 3,913.00 | 15.55 | 131.34 | 3,786.78 | -647.17 | 637.54 | -563.53 | 0.15 | 0.04 | -0.53 |
| 4,005.00 | 14.68 | 131.51 | 3,875.60 | -663.04 | 655.53 | -577.06 | 0.95 | -0.95 | 0.18 |
| 4,097.00 | 13.45 | 128.48 | 3,964.84 | -677.42 | 672.63 | -589.22 | 1.56 | -1.34 | -3.29 |
| 4,189.00 | 15.66 | 133.63 | 4,053.88 | -692.65 | 690.00 | -602.19 | 2.78 | 2.40 | 5.60 |
| 4,281.00 | 14.42 | 138.37 | 4,142.73 | -709.78 | 706.60 | -617.14 | 1.90 | -1.35 | 5.15 |
| 4,373.00 | 13.67 | 134.29 | 4,231.98 | -725.94 | 721.99 | -631.27 | 1.35 | -0.82 | -4.43 |
| 4,465.00 | 12.71 | 132.30 | 4,321.56 | -740.34 | 737.26 | -643.68 | 1.15 | -1.04 | -2.16 |
| 4,557.00 | 11.65 | 133.70 | 4,411.48 | -753.57 | 751.46 | -655.05 | 1.20 | -1.15 | 1.52 |
| 4,649.00 | 9.73 | 134.16 | 4,501.88 | -765.40 | 763.75 | -665.28 | 2.09 | -2.09 | 0.50 |
| 4,741.00 | 8.25 | 133.83 | 4,592.75 | -775.39 | 774.09 | -673.92 | 1.61 | -1.61 | -0.36 |
| 4,833.00 | 6.54 | 136.77 | 4,683.98 | -783.78 | 782.44 | -681.21 | 1.90 | -1.86 | 3.20 |
| 4,925.00 | 5.83 | 132.80 | 4,775.45 | -790.77 | 789.46 | -687.28 | 0.90 | -0.77 | -4.32 |
| 5,017.00 | 4.72 | 126.61 | 4,867.06 | -796.20 | 795.93 | -691.88 | 1.35 | -1.21 | -6.73 |
| 5,109.00 | 3.57 | 123.23 | 4,958.81 | -800.03 | 801.36 | -695.00 | 1.28 | -1.25 | -3.67 |
| 5,201.00 | 3.33 | 115.90 | 5,050.65 | -802.77 | 806.16 | -697.13 | 0.55 | -0.26 | -7.97 |
| 5,293.00 | 2.58 | 116.89 | 5,142.53 | -804.87 | 810.41 | -698.69 | 0.82 | -0.82 | 1.08 |



Phoenix Technology Services LP

Survey Report



| | | | |
|------------------|--------------------------------|-------------------------------------|------------------------------|
| Company: | Whiting Oil & Gas Corporation | Local Co-ordinate Reference: | Well Razor FED #12F-0108B |
| Project: | Weld County, Colorado (NAD 83) | TVD Reference: | RKB @ 4957.80usft (Unit 409) |
| Site: | Sec.12-T10N-R58W | MD Reference: | RKB @ 4957.80usft (Unit 409) |
| Well: | Razor FED #12F-0108B | North Reference: | True |
| Wellbore: | Wellbore #1 / Job #1523841 | Survey Calculation Method: | Minimum Curvature |
| Design: | Surveys (Unit 409) | Database: | Compass 5000 RMR |

| Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 5,385.00 | 2.52 | 119.61 | 5,234.43 | -806.81 | 814.02 | -700.17 | 0.15 | -0.07 | 2.96 |
| 5,477.00 | 6.52 | 353.30 | 5,326.25 | -802.61 | 815.17 | -695.86 | 8.98 | 4.35 | -137.29 |
| 5,523.00 | 9.40 | 3.32 | 5,371.81 | -796.27 | 815.08 | -689.57 | 6.93 | 6.26 | 21.78 |
| 5,569.00 | 12.45 | 0.51 | 5,416.97 | -787.56 | 815.34 | -680.90 | 6.73 | 6.63 | -6.11 |
| 5,614.00 | 16.34 | 7.98 | 5,460.55 | -776.43 | 816.27 | -669.74 | 9.56 | 8.64 | 16.60 |
| 5,661.00 | 19.80 | 10.91 | 5,505.23 | -762.06 | 818.69 | -655.19 | 7.61 | 7.36 | 6.23 |
| 5,707.00 | 25.01 | 11.83 | 5,547.74 | -744.88 | 822.16 | -637.71 | 11.35 | 11.33 | 2.00 |
| 5,753.00 | 28.31 | 11.79 | 5,588.84 | -724.68 | 826.39 | -617.14 | 7.17 | 7.17 | -0.09 |
| 5,799.00 | 29.56 | 12.80 | 5,629.10 | -702.94 | 831.13 | -594.98 | 2.92 | 2.72 | 2.20 |
| 5,845.00 | 32.21 | 12.46 | 5,668.57 | -679.90 | 836.29 | -571.48 | 5.77 | 5.76 | -0.74 |
| 5,890.00 | 35.57 | 14.16 | 5,705.92 | -655.49 | 842.08 | -546.54 | 7.76 | 7.47 | 3.78 |
| 5,937.00 | 38.77 | 12.94 | 5,743.37 | -627.89 | 848.72 | -518.33 | 6.99 | 6.81 | -2.60 |
| 5,983.00 | 45.37 | 11.76 | 5,777.50 | -597.79 | 855.29 | -487.65 | 14.45 | 14.35 | -2.57 |
| 6,029.00 | 51.37 | 11.90 | 5,808.04 | -564.16 | 862.34 | -453.41 | 13.05 | 13.04 | 0.30 |
| 6,085.00 | 61.04 | 10.21 | 5,839.16 | -518.53 | 871.21 | -407.03 | 17.45 | 17.27 | -3.02 |
| 6,131.00 | 67.16 | 8.69 | 5,859.24 | -477.73 | 877.99 | -365.71 | 13.63 | 13.30 | -3.30 |
| 6,177.00 | 76.78 | 6.51 | 5,873.46 | -434.43 | 883.74 | -322.02 | 21.39 | 20.91 | -4.74 |
| 6,223.00 | 84.35 | 5.64 | 5,881.00 | -389.34 | 888.54 | -276.69 | 16.56 | 16.46 | -1.89 |
| 6,239.00 | 86.64 | 4.03 | 5,882.26 | -373.44 | 889.88 | -260.75 | 17.48 | 14.31 | -10.06 |
| 6,313.00 | 91.15 | 355.33 | 5,883.69 | -299.55 | 889.46 | -187.47 | 13.24 | 6.09 | -11.76 |
| 6,407.00 | 91.48 | 354.93 | 5,881.53 | -205.91 | 881.49 | -95.54 | 0.55 | 0.35 | -0.43 |
| 6,500.00 | 90.08 | 352.76 | 5,880.26 | -113.47 | 871.52 | -5.03 | 2.78 | -1.51 | -2.33 |
| 6,593.00 | 89.86 | 353.06 | 5,880.31 | -21.18 | 860.04 | 85.14 | 0.40 | -0.24 | 0.32 |
| 6,685.00 | 89.02 | 354.98 | 5,881.21 | 70.31 | 850.45 | 174.75 | 2.28 | -0.91 | 2.09 |
| 6,778.00 | 89.22 | 357.96 | 5,882.64 | 163.12 | 844.73 | 266.13 | 3.21 | 0.22 | 3.20 |
| 6,871.00 | 88.80 | 359.82 | 5,884.25 | 256.08 | 842.93 | 358.16 | 2.05 | -0.45 | 2.00 |
| 6,964.00 | 88.10 | 358.82 | 5,886.76 | 349.04 | 841.82 | 450.27 | 1.31 | -0.75 | -1.08 |
| 7,056.00 | 88.77 | 358.17 | 5,889.27 | 440.97 | 839.41 | 541.21 | 1.01 | 0.73 | -0.71 |
| 7,150.00 | 89.78 | 358.06 | 5,890.46 | 534.91 | 836.32 | 634.05 | 1.08 | 1.07 | -0.12 |
| 7,243.00 | 90.87 | 357.45 | 5,889.94 | 627.84 | 832.67 | 725.81 | 1.34 | 1.17 | -0.66 |
| 7,336.00 | 90.28 | 0.21 | 5,889.00 | 720.80 | 830.78 | 817.83 | 3.03 | -0.63 | 2.97 |
| 7,428.00 | 90.81 | 0.19 | 5,888.13 | 812.80 | 831.10 | 909.16 | 0.58 | 0.58 | -0.02 |
| 7,522.00 | 91.68 | 359.79 | 5,886.09 | 906.77 | 831.08 | 1,002.42 | 1.02 | 0.93 | -0.43 |
| 7,614.00 | 89.22 | 1.02 | 5,885.36 | 998.76 | 831.73 | 1,093.78 | 2.99 | -2.67 | 1.34 |
| 7,707.00 | 87.32 | 1.35 | 5,888.17 | 1,091.69 | 833.65 | 1,186.24 | 2.07 | -2.04 | 0.35 |
| 7,800.00 | 87.90 | 0.88 | 5,892.05 | 1,184.59 | 835.46 | 1,278.66 | 0.80 | 0.62 | -0.51 |
| 7,893.00 | 88.18 | 0.58 | 5,895.23 | 1,277.53 | 836.65 | 1,371.03 | 0.44 | 0.30 | -0.32 |
| 7,986.00 | 89.05 | 0.62 | 5,897.48 | 1,370.50 | 837.62 | 1,463.41 | 0.94 | 0.94 | 0.04 |
| 8,079.00 | 89.72 | 0.48 | 5,898.48 | 1,463.49 | 838.51 | 1,555.79 | 0.74 | 0.72 | -0.15 |
| 8,172.00 | 90.39 | 0.08 | 5,898.39 | 1,556.49 | 838.97 | 1,648.14 | 0.84 | 0.72 | -0.43 |
| 8,265.00 | 91.51 | 0.25 | 5,896.84 | 1,649.47 | 839.23 | 1,740.45 | 1.22 | 1.20 | 0.18 |
| 8,357.00 | 89.30 | 1.23 | 5,896.19 | 1,741.46 | 840.42 | 1,831.87 | 2.63 | -2.40 | 1.07 |
| 8,450.00 | 89.30 | 0.84 | 5,897.33 | 1,834.43 | 842.10 | 1,924.35 | 0.42 | 0.00 | -0.42 |



Phoenix Technology Services LP

Survey Report



| | | | |
|------------------|--------------------------------|-------------------------------------|------------------------------|
| Company: | Whiting Oil & Gas Corporation | Local Co-ordinate Reference: | Well Razor FED #12F-0108B |
| Project: | Weld County, Colorado (NAD 83) | TVD Reference: | RKB @ 4957.80usft (Unit 409) |
| Site: | Sec.12-T10N-R58W | MD Reference: | RKB @ 4957.80usft (Unit 409) |
| Well: | Razor FED #12F-0108B | North Reference: | True |
| Wellbore: | Wellbore #1 / Job #1523841 | Survey Calculation Method: | Minimum Curvature |
| Design: | Surveys (Unit 409) | Database: | Compass 5000 RMR |

| 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) |
| 8,543.00 | 89.50 | 0.48 | 5,898.30 | 1,927.42 | 843.17 | 2,016.76 | 0.44 | 0.22 | -0.39 |
| 8,636.00 | 90.50 | 1.29 | 5,898.30 | 2,020.41 | 844.61 | 2,109.21 | 1.38 | 1.08 | 0.87 |
| 8,728.00 | 88.69 | 1.27 | 5,898.95 | 2,112.38 | 846.66 | 2,200.73 | 1.97 | -1.97 | -0.02 |
| 8,821.00 | 88.97 | 0.67 | 5,900.85 | 2,205.35 | 848.24 | 2,293.18 | 0.71 | 0.30 | -0.65 |
| 8,913.00 | 89.22 | 0.26 | 5,902.31 | 2,297.33 | 848.99 | 2,384.55 | 0.52 | 0.27 | -0.45 |
| 9,005.00 | 89.53 | 359.96 | 5,903.31 | 2,389.33 | 849.16 | 2,475.87 | 0.47 | 0.34 | -0.33 |
| 9,098.00 | 89.89 | 359.53 | 5,903.78 | 2,482.32 | 848.75 | 2,568.10 | 0.60 | 0.39 | -0.46 |
| 9,190.00 | 91.37 | 0.17 | 5,902.77 | 2,574.31 | 848.51 | 2,659.36 | 1.75 | 1.61 | 0.70 |
| 9,282.00 | 91.87 | 359.94 | 5,900.17 | 2,666.28 | 848.60 | 2,750.63 | 0.60 | 0.54 | -0.25 |
| 9,375.00 | 90.45 | 0.72 | 5,898.29 | 2,759.25 | 849.13 | 2,842.96 | 1.74 | -1.53 | 0.84 |
| 9,467.00 | 90.95 | 0.41 | 5,897.16 | 2,851.24 | 850.04 | 2,934.36 | 0.64 | 0.54 | -0.34 |
| 9,560.00 | 91.54 | 0.00 | 5,895.14 | 2,944.22 | 850.37 | 3,026.67 | 0.77 | 0.63 | -0.44 |
| 9,652.00 | 89.52 | 359.54 | 5,894.29 | 3,036.21 | 850.00 | 3,117.91 | 2.25 | -2.20 | -0.50 |
| 9,745.00 | 90.03 | 359.40 | 5,894.66 | 3,129.20 | 849.14 | 3,210.08 | 0.57 | 0.55 | -0.15 |
| 9,837.00 | 89.92 | 358.22 | 5,894.70 | 3,221.18 | 847.23 | 3,301.12 | 1.29 | -0.12 | -1.28 |
| 9,929.00 | 89.72 | 357.31 | 5,894.98 | 3,313.11 | 843.64 | 3,391.91 | 1.01 | -0.22 | -0.99 |
| 10,021.00 | 89.86 | 356.35 | 5,895.32 | 3,404.97 | 838.56 | 3,482.43 | 1.05 | 0.15 | -1.04 |
| 10,113.00 | 89.50 | 357.36 | 5,895.84 | 3,496.83 | 833.51 | 3,572.97 | 1.17 | -0.39 | 1.10 |
| 10,205.00 | 90.34 | 357.57 | 5,895.96 | 3,588.74 | 829.44 | 3,663.67 | 0.94 | 0.91 | 0.23 |
| 10,298.00 | 91.31 | 359.53 | 5,894.62 | 3,681.69 | 827.09 | 3,755.63 | 2.35 | 1.04 | 2.11 |
| 10,390.00 | 90.67 | 0.81 | 5,893.04 | 3,773.67 | 827.36 | 3,846.94 | 1.56 | -0.70 | 1.39 |
| 10,483.00 | 90.28 | 0.94 | 5,892.26 | 3,866.66 | 828.78 | 3,939.39 | 0.44 | -0.42 | 0.14 |
| 10,575.00 | 90.84 | 1.02 | 5,891.36 | 3,958.64 | 830.35 | 4,030.86 | 0.61 | 0.61 | 0.09 |
| 10,667.00 | 91.03 | 0.64 | 5,889.86 | 4,050.62 | 831.69 | 4,122.30 | 0.46 | 0.21 | -0.41 |
| 10,759.00 | 89.92 | 2.10 | 5,889.10 | 4,142.59 | 833.88 | 4,213.84 | 1.99 | -1.21 | 1.59 |
| 10,851.00 | 90.31 | 1.81 | 5,888.92 | 4,234.53 | 837.02 | 4,305.47 | 0.53 | 0.42 | -0.32 |
| 10,943.00 | 89.22 | 2.06 | 5,889.29 | 4,326.48 | 840.13 | 4,397.09 | 1.22 | -1.18 | 0.27 |
| 11,035.00 | 89.80 | 1.87 | 5,890.08 | 4,418.42 | 843.28 | 4,488.72 | 0.66 | 0.63 | -0.21 |
| 11,127.00 | 90.08 | 1.66 | 5,890.18 | 4,510.38 | 846.12 | 4,580.32 | 0.38 | 0.30 | -0.23 |
| 11,219.00 | 89.92 | 1.41 | 5,890.18 | 4,602.34 | 848.58 | 4,671.89 | 0.32 | -0.17 | -0.27 |
| 11,311.00 | 89.94 | 1.20 | 5,890.29 | 4,694.32 | 850.68 | 4,763.42 | 0.23 | 0.02 | -0.23 |
| 11,403.00 | 89.89 | 1.36 | 5,890.43 | 4,786.30 | 852.73 | 4,854.95 | 0.18 | -0.05 | 0.17 |
| 11,495.00 | 90.50 | 1.65 | 5,890.11 | 4,878.26 | 855.15 | 4,946.51 | 0.73 | 0.66 | 0.32 |
| 11,587.00 | 90.98 | 1.65 | 5,888.92 | 4,970.22 | 857.80 | 5,038.09 | 0.52 | 0.52 | 0.00 |
| 11,679.00 | 91.45 | 1.57 | 5,886.97 | 5,062.16 | 860.38 | 5,129.65 | 0.52 | 0.51 | -0.09 |
| 11,770.00 | 89.78 | 1.32 | 5,886.00 | 5,153.12 | 862.68 | 5,220.20 | 1.86 | -1.84 | -0.27 |
| 11,862.00 | 90.00 | 1.25 | 5,886.17 | 5,245.10 | 864.74 | 5,311.73 | 0.25 | 0.24 | -0.08 |
| 11,954.00 | 90.34 | 1.24 | 5,885.90 | 5,337.08 | 866.74 | 5,403.25 | 0.37 | 0.37 | -0.01 |
| 12,047.00 | 91.06 | 1.24 | 5,884.76 | 5,430.05 | 868.75 | 5,495.76 | 0.77 | 0.77 | 0.00 |
| 12,138.00 | 91.57 | 1.27 | 5,882.68 | 5,521.00 | 870.74 | 5,586.26 | 0.56 | 0.56 | 0.03 |
| 12,230.00 | 89.72 | 0.59 | 5,881.64 | 5,612.98 | 872.24 | 5,677.72 | 2.14 | -2.01 | -0.74 |
| 12,322.00 | 89.13 | 0.11 | 5,882.56 | 5,704.97 | 872.80 | 5,769.08 | 0.83 | -0.64 | -0.52 |
| 12,414.00 | 89.86 | 0.02 | 5,883.37 | 5,796.97 | 872.90 | 5,860.38 | 0.80 | 0.79 | -0.10 |
| 12,506.00 | 88.71 | 358.78 | 5,884.52 | 5,888.95 | 871.94 | 5,951.54 | 1.84 | -1.25 | -1.35 |



Phoenix Technology Services LP

Survey Report



| | | | |
|------------------|--------------------------------|-------------------------------------|------------------------------|
| Company: | Whiting Oil & Gas Corporation | Local Co-ordinate Reference: | Well Razor FED #12F-0108B |
| Project: | Weld County, Colorado (NAD 83) | TVD Reference: | RKB @ 4957.80usft (Unit 409) |
| Site: | Sec.12-T10N-R58W | MD Reference: | RKB @ 4957.80usft (Unit 409) |
| Well: | Razor FED #12F-0108B | North Reference: | True |
| Wellbore: | Wellbore #1 / Job #1523841 | Survey Calculation Method: | Minimum Curvature |
| Design: | Surveys (Unit 409) | Database: | Compass 5000 RMR |

| 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) |
| 12,598.00 | 88.99 | 358.65 | 5,886.37 | 5,980.91 | 869.88 | 6,042.54 | 0.34 | 0.30 | -0.14 |
| 12,690.00 | 89.97 | 358.91 | 5,887.20 | 6,072.88 | 867.92 | 6,133.57 | 1.10 | 1.07 | 0.28 |
| 12,782.00 | 89.33 | 359.52 | 5,887.77 | 6,164.87 | 866.66 | 6,224.70 | 0.96 | -0.70 | 0.66 |
| 12,874.00 | 87.46 | 359.09 | 5,890.34 | 6,256.83 | 865.54 | 6,315.82 | 2.09 | -2.03 | -0.47 |
| 12,966.00 | 87.88 | 358.44 | 5,894.08 | 6,348.73 | 863.56 | 6,406.77 | 0.84 | 0.46 | -0.71 |
| 13,058.00 | 88.63 | 358.14 | 5,896.88 | 6,440.64 | 860.82 | 6,497.64 | 0.88 | 0.82 | -0.33 |
| 13,150.00 | 89.44 | 357.53 | 5,898.43 | 6,532.56 | 857.34 | 6,588.43 | 1.10 | 0.88 | -0.66 |
| 13,242.00 | 88.44 | 357.72 | 5,900.14 | 6,624.47 | 853.53 | 6,679.16 | 1.11 | -1.09 | 0.21 |
| 13,334.00 | 89.05 | 357.27 | 5,902.15 | 6,716.36 | 849.51 | 6,769.85 | 0.82 | 0.66 | -0.49 |
| 13,426.00 | 89.66 | 356.68 | 5,903.19 | 6,808.22 | 844.66 | 6,860.42 | 0.92 | 0.66 | -0.64 |
| 13,457.00 | 89.86 | 356.52 | 5,903.32 | 6,839.17 | 842.82 | 6,890.90 | 0.83 | 0.65 | -0.52 |
| Final Phoenix MWD Survey | | | | | | | | | |
| 13,515.00 | 89.86 | 356.52 | 5,903.46 | 6,897.06 | 839.30 | 6,947.91 | 0.00 | 0.00 | 0.00 |
| Projection to TD | | | | | | | | | |

| Survey Annotations | | | | |
|-----------------------|-----------------------|-------------------|--------------|--------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
| | | +N/-S (usft) | +E/-W (usft) | |
| 324.00 | 323.98 | -1.59 | 2.30 | First Phoenix MWD Survey |
| 13,457.00 | 5,903.32 | 6,839.17 | 842.82 | Final Phoenix MWD Survey |
| 13,515.00 | 5,903.46 | 6,897.06 | 839.30 | Projection to TD |

Checked By: _____ Approved By: _____ Date: _____