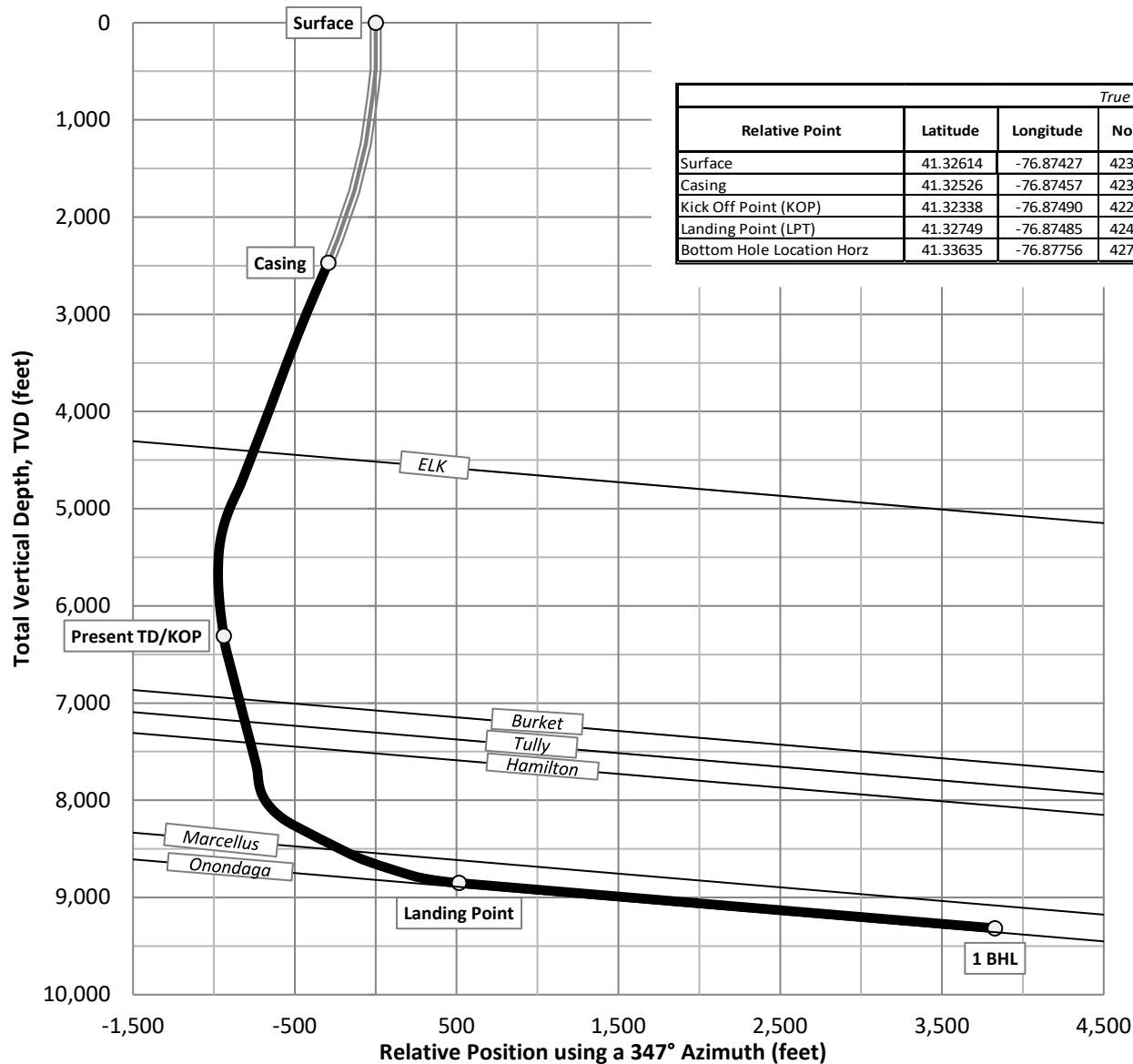


# Directional Drilling Plan

## Hillegas 1 Marcellus Horizontal



| True North NAD83 - Pennsylvania North |          |           |           |            |         |          |                   |               |          |          |  |
|---------------------------------------|----------|-----------|-----------|------------|---------|----------|-------------------|---------------|----------|----------|--|
| Relative Point                        | Latitude | Longitude | Northing  | Easting    | MD (ft) | TVD (ft) | Inclination (deg) | Azimuth (deg) | N/S (ft) | E/W (ft) |  |
| Surface                               | 41.32614 | -76.87427 | 423668.40 | 2209021.20 | 0       | 0        | 0                 | 0             | 0.00     | 0.00     |  |
| Casing                                | 41.32526 | -76.87457 | 423346.90 | 2208942.00 | 2500    | 2468.97  | 15.51             | 190.82        | -319.72  | -81.62   |  |
| Kick Off Point (KOP)                  | 41.32338 | -76.87490 | 422661.10 | 2208858.30 | 6441    | 6308.69  | 7.4               | 42.6          | -1003.79 | -172.12  |  |
| Landing Point (LPT)                   | 41.32749 | -76.87485 | 424158.60 | 2208856.90 | 9700    | 8851.75  | 82                | 347           | 492.44   | -158.75  |  |
| Bottom Hole Location Horz             | 41.33635 | -76.87756 | 427379.10 | 2208080.10 | 13045   | 9317.29  | 82                | 347           | 3719.98  | -903.89  |  |

Surface Casing  
Production Casing