32.54. **Model:** Assume that the wire is infinitely long.

**Visualize:** Please refer to Figure P32.54. The wire, looped as it is, consists of a circular part and a linear part.

**Solve:** Using Equation 32.7 and Example 32.3, the magnetic field at P is

\[
B_P = B_{\text{loop center}} + B_{\text{wire}} = \frac{\mu_0 I}{2R} + \frac{\mu_0 I}{2\pi R}
\]

\[
= \frac{4\pi (10^{-7} \, \text{T m / A})(5.0 \, \text{A})}{2(0.01 \, \text{m})} + \frac{4\pi (10^{-7} \, \text{T m / A})(5.0 \, \text{A})}{2\pi(0.01 \, \text{m})} = 4.1 \times 10^{-4} \, \text{T}
\]