94. (a) The wave is traveling in the $-y$ direction (see §17-5 for the significance of the relative sign between the spatial and temporal arguments of the wave function).

(b) Figure 34-5 may help in visualizing this. The direction of propagation (along the y axis) is perpendicular to $\vec{B}$ (presumably along the x axis, since the problem gives B_x and no other component) and both are perpendicular to $\vec{E}$ (which determines the axis of polarization). Thus, the wave is z-polarized.

(c) Since the magnetic field amplitude is $B_m = 4.00\ \mu\mathrm{T}$, then (by Eq. 34-5) $E_m = 1199$ V/m. Dividing by $\sqrt{2}$ yields $E_{\mathrm{rms}} = 848$ V/m. Then, Eq. 34-26 gives

$$I = \frac{1}{c\mu_0} E_{\mathrm{rms}}^2 = 1.91 \times 10^3\ \mathrm{W/m}^2\ .$$

(d) Since $kc = \omega$ (equivalent to $c = f\lambda$), we have

$$k = \frac{2.00 \times 10^{15}}{c} = 6.67 \times 10^6\ \mathrm{m}^{-1}\ .$$

Summarizing the information gathered so far, we have (with SI units understood)

$$E_z = 1199 \sin\left(\left(6.67 \times 10^6\right) y + \left(2.00 \times 10^{15}\right) t\right)\ .$$

(e) and (f) Since $\lambda = 2\pi/k = 942$ nm, we see that this is infrared light.