LET $\underline{F}_1 = \dfrac{(0, zx, -xy)}{\rho(y^2+z^2)}$

$\underline{F}_2 = \dfrac{(-yz, 0, xy)}{\rho(x^2+z^2)}$

$\underline{F}_3 = \dfrac{(yz, -zx, 0)}{\rho(x^2+y^2)} = \cos\phi\,(\sin\theta, -\cos\theta, 0)$

EACH HAS [redacted] CURL

$$\frac{(x,y,z)}{\rho^3}.$$