$$b_1 = \frac{2x}{3\left(x^2+y^2\right)^{\frac{2}{3}}} \sin\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right) - \frac{2y}{3\left(x^2+y^2\right)^{\frac{2}{3}}} \cos\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right)$$

$$b_2 = \frac{2x}{3\left(x^2+y^2\right)^{\frac{2}{3}}} \cos\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right) + \frac{2y}{3\left(x^2+y^2\right)^{\frac{2}{3}}} \sin\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right)$$

$$\begin{aligned}\frac{\partial b_2}{\partial x} =& -\frac{8x^2}{9\left(x^2+y^2\right)^{\frac{5}{3}}} \cos\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right) - \frac{4xy}{9\left(x^2+y^2\right)^{\frac{5}{3}}} \sin\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right) \\ & - \frac{4y^2}{9\left(x^2+y^2\right)^{\frac{5}{3}}} \cos\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right) + \frac{2}{3\left(x^2+y^2\right)^{\frac{2}{3}}} \cos\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right) \\ \frac{\partial b_1}{\partial y} =& \frac{4x^2}{9\left(x^2+y^2\right)^{\frac{5}{3}}} \cos\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right) - \frac{4xy}{9\left(x^2+y^2\right)^{\frac{5}{3}}} \sin\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right) \\ & + \frac{8y^2}{9\left(x^2+y^2\right)^{\frac{5}{3}}} \cos\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right) - \frac{2}{3\left(x^2+y^2\right)^{\frac{2}{3}}} \cos\left(\frac{2}{3}\operatorname{atan}_2\left(y,x\right)\right)\end{aligned}$$