$$\frac{\partial}{\partial t}\frac{q'^2}{2dQ/dy} + U\frac{\partial}{\partial x}\frac{q'^2}{2dQ/dy} + \frac{\partial}{\partial x}\frac{1}{2}\left(v'^2 - u'^2\right) - \frac{\partial}{\partial y}\left(u'v'\right) = 0$$