$$q_1(y) = -\frac{Q_1'(y)v_1(y)}{-ik\left(c - U_1(y)\right)}$$

$$q_c(y;y_c) = -\mathcal{P}\frac{Q_1'(y)v_c(y;y_c)}{-ik\left(c_c(y_c) - U_1(y)\right)} + C_{\mathrm{I\!I}i}(y_c)\frac{\pi Q_1'(y_c)}{U_1'(y_c)}\delta(y - y_c)$$