$$Q_{HW,\,77°F} = \sum_{i=1}^{6} \frac{M_i C_{pi}\left(135°F - 58°F\right)}{\eta_r}$$

$$\text{or } Q_{HW,\,42.8°C} = \sum_{i=1}^{6} \frac{M_i C_{pi}\left(57.2°C - 14.4°C\right)}{\eta_r}$$