$$GHG_i = \sum_{j=1}^{n}\left[\sum_{m=1}^{z}\left(F_{G,j} \times t_j\right)_m \times \left(1 - FG_j\right)\right] \times MF_i \times \left[\frac{T_{SC} \times P_{rc}}{T_{rc} \times P_{SC}}\right] \times \rho_i \times 0.001$$

Where:

GHG_i = Annual emissions of greenhouse gas *i* attributable to reciprocating compressor venting, in metric tons;
n = Total number of reciprocating compressors;
j = Reciprocating compressor;
z = Number of operating modes of reciprocating compressor;
m = Operating mode of reciprocating compressor;
$F_{G,j}$ = Gas flow from the venting of reciprocating compressor *j* in operating mode *m*, determined in accordance with paragraph 1 of QC.33.4.15, in cubic metres per hour;
t_j = Annual operating time of reciprocating compressor *j* in operating mode *m*, determined in accordance with QC.33.4.15, in hours;
FG_j = Portion of gas from the vent of reciprocating compressor *j* that is recovered using a vapour recovery system, determined in accordance with paragraph 5 of QC.33.4.15, expressed as a percentage;
MF_i = Molar fraction of greenhouse gas *i* in the gas from the reciprocating compressor venting, determined in accordance with paragraph 3 of QC.33.4;
T_{SC} = Temperature at standard conditions of 293.15 kelvin;
T_{rc} = Temperature at the reciprocating compressor vent, in kelvin;
P_{rc} = Pressure at the reciprocating compressor vent, in kilopascals;
P_{SC} = Pressure at standard conditions of 101.325 kPa;
ρ_i = Density of greenhouse gas *i* that is 1.893 kg per cubic metre for CO_2 and 0.690 kg per cubic metre for CH_4 at standard conditions;
0.001 = Conversion factor, kilograms to metric tons;
i = CO_2 or CH_4;