

$$CO_2 = V_G \times \frac{[MF_{CO_2-in} \times (1 - MF_{H_2S-out}) - MF_{CO_2-out} \times (1 - MF_{H_2S-in})]}{(1 - MF_{H_2S-out} - MF_{CO_2-out})} \times \rho_{CO_2} \times 0.001$$

Where:

CO_2 = Annual CO_2 emissions attributable to acid gas scrubbing equipment, in metric tons;

V_G = Annual volume of unprocessed natural gas flow into the acid gas scrubbing equipment, measured in accordance with paragraph 1 of QC.33.4.3, in cubic metres at standard conditions;

MF_{CO_2-in} = Mole fraction of CO_2 in unprocessed natural gas flow into the acid gas scrubbing equipment, determined in accordance with paragraph 2 of QC.33.4.3;

MF_{CO_2-out} = Mole fraction of CO_2 in unprocessed natural gas out of the acid gas scrubbing equipment, determined in accordance with paragraph 2 of QC.33.4.3;

MF_{H_2S-in} = Mole fraction of H_2S in unprocessed natural gas into the acid gas scrubbing equipment, determined in accordance with paragraph 3 of QC.33.4.3;

MF_{H_2S-out} = Mole fraction of H_2S in processed natural gas out of the acid gas scrubbing equipment, determined in accordance with paragraph 3 of QC.33.4.3;

ρ_{CO_2} = Density of CO_2 , namely 1.893 kg per cubic metre, at standard conditions;

0.001 = Conversion factor, kilograms to metric tons.