

$$x_{\text{H}_2\text{Oexh}} = \frac{35.37}{1 + \frac{35.37}{1000}} = 34.16 \text{ mmol/mol}$$

$$x_{\text{Ccombdry}} = 0.0252 + \frac{29.3}{1000000} + \frac{47.6}{1000000} - \frac{0.371}{1000} \cdot 0.851 - \frac{0.369}{1000} \cdot 0.172 = 0.0249 \text{ mol/mol}$$

$$x_{\text{H}_2\text{dry}} = \frac{29.3 \cdot (0.034 - 0.012 \cdot 0.851)}{3.5 \cdot \left(\frac{25.2}{1000} - \frac{0.371}{1000} \cdot 0.851 \right)} = 8.5 \text{ } \mu\text{mol/mol}$$

$$x_{\text{H}_2\text{Oexhdry}} = \frac{1.8}{2} \left(0.0249 - \frac{47.6}{1000000} \right) + 0.012 \cdot 0.851 + 0.017 \cdot 0.172 - \frac{8.5}{1000000} = 0.0353 \text{ mol/mol}$$

$$x_{\text{dil/exhdry}} = \frac{0.822}{1 - 0.034} = 0.851 \text{ mol/mol}$$

$$x_{\text{int/exhdry}} = \frac{1}{2 \cdot 0.206} \left(\left(\frac{1.8}{2} - 0.050 + 2 + 2 \cdot 0.0003 \right) \left(0.0249 - \frac{47.6}{1000000} \right) - \left(\frac{29.3}{1000000} - \frac{50.4}{1000000} - 2 \cdot \frac{12.1}{1000000} + \frac{8.5}{1000000} \right) \right) = 0.172 \text{ mol/mol}$$

$$x_{\text{raw/exhdry}} = \frac{1}{2} \left(\left(\frac{1.8}{2} + 0.050 + 0.0001 \right) \left(0.0249 - \frac{47.6}{1000000} \right) + \left(2 \cdot \frac{47.6}{1000000} + \frac{29.3}{1000000} - \frac{12.1}{1000000} + \frac{8.5}{1000000} \right) \right) + 0.172 = 0.184 \text{ mol/mol}$$

$$x_{\text{O}_2\text{int}} = \frac{0.209820 - 0.000375}{1 + \frac{17.22}{1000}} = 0.206 \text{ mol/mol}$$

$$x_{\text{CO}_2\text{int}} = \frac{0.000375 \cdot 1000}{1 + \frac{17.22}{1000}} = 0.369 \text{ mmol/mol}$$

$$x_{\text{H}_2\text{Ointdry}} = \frac{16.93}{1 - \frac{16.93}{1000}} = 17.22 \text{ mmol/mol}$$