Appendix B.

Conversion Factors

Conversions of concentrations of contaminants measured to comparison concentrations.

General information for benzene, toluene, ethylbenzene and xylenes:

1.0 milligram = 1,000 micrograms (1.0 mg = 1,000 µg)
1.0 µg = 0.001 mg

1,000 parts per billion (ppb) = 1.0 part per million (ppm)
1.0 ppb = 0.001 ppm

Conversions from µg/m^3 to ppb:

$$ppb = \frac{\text{concentration of chemical in } \mu g/m^3 \text{ x } 24.45}{\text{molecular weight of chemical}}$$

(24.45 is a constant, and is the volume in liters of one mole of gas.)

Part 2. Specific conversions.

Benzene:
Maximum concentration is 4.5 µg/m^3
Molecular weight of benzene is 78.11

$$ppb = \frac{4.5\ \mu g/m^3 \text{ x } 24.5}{78.11}$$

= 1.4 ppb benzene in air

Toluene:
Maximum concentration is 7.1 µg/m^3
Molecular weight = 92.14

$$ppb = \frac{7.1\ \mu g/m^3 \text{ x } 24.5}{92.14}$$

= 1.9 ppb toluene in air

Ethylbenzene:
Maximum concentration is 1.0 µg/m^3
Molecular weight is 106.17

$$ppb = \frac{1.0\ \mu g/m^3 \times 24.5}{106.17}$$

= 0.23 ppb ethylbenzene in air

Xylenes:
Maximum concentration is 2.8
Molecular weight is 106.16

$$ppb = \frac{2.8\ \mu g/m^3 \times 24.5}{106.16}$$

= 0.65 ppb total xylenes in air