Important Qualitative Ozone Relationships

- Ozone half-life in air is typically about 15 minutes in open areas (can be hours in enclosed areas) and increases with lower temperature and lower humidity.

- Ozone is about 50% heavier than air and has a low vapor pressure, so it tends to sink to the floor and does not disperse if there is no air circulation.

- Virtually all ozone instruments have cross-sensitivities with other gases. Chlorine compounds such as C1O2 and nitrogen compounds such as NO2 look very much like ozone to many instruments. Strong VOCs such as vapors of alcohols affect most VOC instruments.

- Maximum ozone concentration in water varies directly by concentration of the gas in air and inversely by temperature: for example 1.5% feed gas (by weight) will have a maximum concentration of about 11 ppm (mg/L) in water at 5 degrees C and 6.4 ppm at 20 degrees C. Doubling the concentrations of ozone in the feed gas will double the concentration in water.

- Dissolved ozone monitors also have cross-sensitivity and other operational problems. For example, the popular and low-cost ORP meters (oxidation-reduction potential meters) are sensitive to pH and various ionic conditions of the water.

- Ozone reactions in air are fairly well understood in terms of starting compounds and ending compounds, but the intermediate reactions and compounds are not always well understood.

- Ozone reactions in water are generally well-understood and documented, but areas of uncertainty still exist.