

Occurrence of Atrazine in Monroe City Lake Water Sources

Atrazine has been monitored on a quarterly basis in Monroe City lake and finished waters since 1994. The results of these analyses, shown on the attached plot, indicate the marked seasonality of atrazine concentrations. Since atrazine, a pre-emergent herbicide for corn, is applied in the spring, peak concentrations in lake waters are often observed following rainfalls throughout the spring and summer.

During this monitoring period, the concentration of atrazine detected in Route J Lake was 3.32 $\mu\text{g/l}$. This was about 20% higher than the mean of 2.76 $\mu\text{g/l}$ observed in South Lake. Since water from the Route J Lake discharges directly into South Lake, it appears that some dilution of atrazine is occurring within South Lake. Peak atrazine concentrations of 12 $\mu\text{g/l}$ were observed in samples from both lakes in June 2001.

Atrazine Removal during Treatment

Atrazine is commonly removed from drinking water supplies by adsorption on powdered activated carbon (PAC). The effectiveness of atrazine removal at Monroe City is indicated by the heavy yellow, atrazine 'trend line'. Whereas, in 1994, atrazine concentrations exceeded the 3 $\mu\text{g/l}$ maximum contaminant level (MCL), atrazine levels have progressively decreased to close to the limit of detection, 0.1 $\mu\text{g/l}$. The mean concentration of atrazine in Monroe City's finished water for the period, 1994 through 2001, was 0.7 $\mu\text{g/l}$, or about 23% of the MCL. However, atrazine removals during treatment have increased until, currently, they routinely exceed 90%.

**Atrazine Seasonal and Annual Concentration Pattern
in Finished and Raw Water Over an Eight Year Period
Monroe City, MO 1994 - 2001**

