

tetrachloroethylene manufacturing processes (Callahan, 1979). There are two double bonds as signified by the diene suffix in the IUC designated name. Hexachlorobenzene has six chlorines on the six-carbon aromatic structure known as benzene. These compounds have low volatilization rates, and low water solubilities. The proposed water quality criteria for these compounds are 0.320 ug/L and 0.00072 ug/L, respectively.

The Calcasieu Toxics Inventory Data

Plots of the data collected from 20 biweekly sampling sessions (February 2, 1987 to March 23, 1988) show the variability which exists in the observed concentrations over time. In Figure 6, chloroform concentrations in the water samples from Bayou D'Inde near its Mouth (sampling station number CT5) are plotted over time. The concentrations in the samples ranged from 52 ug/L to below detection limit. The peak concentrations tend to occur at periods of low flow in May, September-October and December. The high variability may also be attributed to tidal influence in that area of Bayou D'Inde where tides average approximately one foot. In Figure 7, observed bromoform concentrations have been overlaid on the chloroform concentrations. As might be expected in a saltwater area where excess chlorine is present, perhaps from a chlorination process, the bromoform concentrations are higher than the chloroform concentrations. The bromoform concentrations range from 450 ug/L to below detection level. Again at periods of low flow, May, September-October-November, and January, the bromoform concentrations are higher in the water.

The similarity in the structure of the compounds leads one to expect that their occurrence in the environment might be related also. Correlation among the compounds ranged from 0.24 for tetrachloroethylene to dibromochloromethane to 0.89 for tetrachloroethylene to EDC. The relative occurrence of tetrachloroethylene to EDC is shown in Figure 8. The correlation coefficient is significant with a probability of error of 0.0001.

It is interesting to compare the data which has been collected from the Calcasieu Basin with that of the Mississippi River. Data is collected daily at New Orleans/Carrollton water intake station, on the Early Warning Organic Compound Detection System. In 631 samples collected from April 1986 to May 1988, 67.8% of the samples had detectable levels of chloroform, 35.9% of the samples contained detectable levels of EDC and 17.7% of the samples contained detectable levels of tetrachloroethylene. In Bayou D'Inde at CT5, from February, 1987 to March, 1988, 18 out of 20 samples (90%) had detectable levels of chloroform and EDC, 85% of the samples had detectable levels of bromodichloromethane, 80% of the samples contained detectable levels of bromoform, dibromochloromethane and tetrachloroethylene.

The state of Louisiana is currently in the process of water quality standards revision. The proposed revision includes specific numerical criteria for 45 toxic compounds. The state standards also include