**Section 364.302 WQI Factor**

a) The WQI factor is determined by comparing the measured value of certain critical water quality parameters in the waters of the State with Illinois Pollution Control Board water quality standards for those parameters.

b) The procedure for calculating the WQI factor is as follows:

1) Average the 1974 and 1975 sample data for each water quality station for each of the following parameters: dissolved oxygen, fecal coliform bacteria, ammonia nitrogen, total dissolved solids, and nitrate plus nitrite nitrogen.

2) Determine the percentage of 1974 and 1975 samples which indicated violations of applicable water quality standards for dissolved oxygen, ammonia nitrogen, fecal coliform bacteria, total dissolved solids, and pH as then set forth in Chapter 3 of the Board's regulations.

3) The parameter pH (relative acidity) is not considered in (b)(1) because its nature is such that an "average" pH is generally meaningless as an expression of water quality. Nitrate plus nitrite nitrogen is not considered in (b)(2) because there is no numerical standard which applies for most water quality sampling stations.

4) The 10 sets of parameter values for each station of all stream segments are then arranged in order of severity and given a rank number. These numbers are subsequently combined to complete a water quality index for each station, according to the following formula:

S = ½ (RA + RV)Amm + ½ (RA + RV) Fec Col + ½ (RA + RV)DO + ½ (RA + RV)TDS + RVpH + RA[N + N]

where:

S = "Water Quality Index" value for a given station

RA = rank number by average value for a given station and parameter

RV = rank number by percent violations of water quality standards for a given station and parameter

Amm, DO, Fec Col, TDS, pH, N + N = parameter designation subscripts

5) The S values found for each station are used as a basis for determining a water quality index value for the basin segments. This process requires the averaging of SSta values for each segment according to the following formula:

WQI = (S1 + S2 + S3 + . . . + SN) / N

Where WQI = segment water quality index value = average of station S values for the segment and,

N = Number of stations in the segment