

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WSG 131

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MEMORANDUM

Subject: Issues in Potable Reuse

From: William R. Diamond, Director  
Implementation and Assistance Division

To: Water Division Directors  
Regions I-X

This memorandum is prompted by two reasons. Some regions have expressed an interest in Headquarter's position on the reuse of treated municipal wastewater for the purpose of augmenting drinking water supplies. In addition, prolonged drought events in recent years may be prompting some utilities to look at alternative supplies including reuse of highly treated wastewater effluents.

As water supplies become more scarce and demand keeps growing, more and more utilities are turning highly treated wastewater effluents as a source of augmenting potable water supplies. Major water reuse water projects involving indirect potable reuse can be found in California, Texas and Florida and several states have promulgated regulations to govern these projects along with other water reuse practices (see attached copy of "*Guidelines for Water Reuse*" EPA/625/R-92-004 published in September 1992, for summary information on these requirements.) In 1998, the National Research Council (NRC) of the National Academy of Sciences published a report entitled "*Issues in Potable Reuse.*" The report presented the results of an extensive study of the practice and concluded that "planned indirect potable reuse is a viable application of reclaimed water - but only when there is careful, thorough, project-specific assessment that includes contaminant monitoring, health and safety testing and system reliability evaluation." We support this conclusion and believe that in areas across the country experiencing water supply problems, options involving indirect potable water reuse should be explored in combination with water conservation which is mandated by the Safe Drinking Water Act.

The NRC report raises some issues with indirect potable water reuse but points out that similar concerns apply to the safety of potable water from conventional sources, particularly the large number of sources exposed to sewage contamination which could be considered unplanned potable reuse. The report notes more than two dozen major utilities serving populations from 25,000 to two million people, use water from rivers that receive wastewater discharges amounting to more than 50% of the stream flow during low flow conditions; large cities such as

Philadelphia, Cincinnati and New Orleans, drawing water from the Delaware, Ohio and Mississippi Rivers, respectively are effectively practicing indirect potable water reuse.

Indirect potable water reuse projects must be designed to provide assurances of safety. Projects must take into consideration the contaminants which may be present in reclaimed water in greater concentration than in natural waters. We note however, that most of the contaminants which the NCR report cites as a concern for reuse projects are covered by recently promulgated drinking water regulations: *giardia*, *cryptosporidium*, disinfection by-products, or are included in the candidate contaminant list for future drinking water regulations. The NRC report provides extensive guidelines for microbiological, chemical, toxicological and epidemiological studies as well as monitoring programs, risk assessments and system reliability assessments. These guidelines can be used to tailor an assessments of reuse projects which will vary from project to project depending on the composition of the source water, and supplement the information provided in the EPA "*Guidelines for Water Reuse*" document.

In conclusion, the safety of any given project is a function of the nature of the wastewater, the extent to which it is treated, the characteristics of the water supply reservoir or aquifer in which the water will reside, and the length of residence in the environment. Therefore, each project must be examined on a case-by-case basis and a detailed assessment is necessary for each project. The ultimate decision regarding the potential for employing indirect potable reuse must be made at the local level.