

IMPACT OF SAFE DRINKING WATER ACT ON NEW MEXICO

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When Prof. Clark asked me to be a speaker at this 21st Water Conference, I suspect he didn't realize how pleased I was and that I was also amused. One concern of the Advisory Committee has been that we seem to be talking only to ourselves at these conferences. I would like to suggest, particularly to the newcomers to the Conference, that this statement may be true, but shouldn't be of concern.

My interest in New Mexico's water problems is a direct result of the Water Resources Research Institute (WRRI). Almost exactly five years ago today, WRRI's Dr. Stucky began a series of Citizen's Water Conferences throughout New Mexico. The purpose of these meetings was to determine some of the most pressing water problems of our communities. I attended the meetings in the north central area and began attending the Water Conference each spring. Today, I am a speaker, so you might say we are "talking to ourselves".

Instead, I believe the Water Conference has a comfortable blend of participants who are very knowledgeable in the history of water use and the problems associated with its development in New Mexico and those who are more like myself, i.e. relative newcomers interested in solving the problem associated with the continuing use of a vital resource, as our population continues to increase.

WRRI's annual conference, I believe, provides an effective means by which new ideas to cope with the changing aspects of water use and development can be explored. Private citizens and public servants alike can learn what water problems are receiving the most attention and how this emphasis affects their particular concerns.

The topic selected for today's conference is an example of where the emphasis is being placed today. Let us look at how the federal Safe Drinking Water Act will affect us in New Mexico.

The Act directs the EPA to develop a series of regulations to be implemented at the state and local levels, and it was the intent of the act that

the states enforce them. The programs under way are listed in the slide and include:

1. Interim primary drinking water regulations for public water systems that specify:
 - a. Maximum contaminant levels for chemical and microbiological constituents.
 - b. Monitoring frequencies
 - c. Analytical methods
 - d. Repeat sampling procedures
 - e. Public notification
 - f. Reporting requirements
 - g. Record keeping requirements
2. Regulations defining state responsibilities and grant requirements for supervising the water supply program.
3. Regulations for state underground injection control (UIC) programs.
4. Regulations defining state responsibilities and grant requirements for supervising the UIC program.
5. National Rural Water Survey to determine the quantity, quality, and availability of rural drinking water supplied by nonpublic systems.

It is interesting to note that during the last four years, the passage of federal water legislation has closely paralleled the identification of the state's water problems. The Citizens' Conferences ranked the ten most pressing water problems in 1971. The slide shows the five most important water problems identified.

1. Declining ground water table and diminishing surface water supply.
2. Need for improved irrigation systems and water use management in irrigated agriculture.
3. Water pollution.
4. Need for knowledge of present and future supplies and demand of water.
5. Shortage of water for industrial, recreational, and municipal uses.

Except for Problem #2 concerning irrigated agriculture, the federal Water Pollution Control Act Amendments of 1972 (PL 92-500) and the Safe Drinking Water Act of 1974 (PL 93-523) provide methods for dealing with the other four problems. Even though the need for the federal legislation appears to be justified by citizen demands, the implementation of this legislation at the

state and local levels can be so inappropriate that the legislation fails in its intent.

This would have been the case if the primary drinking water regulations had been adopted as they were first proposed more than a year ago. The proposed regulations placed an unjustified emphasis on the monitoring of ground water supplies where water quality varies little from year to year. In addition, the regulations required extensive sampling that placed a burden on small communities where economic resources are severely limited. The proposed regulations were an excellent example of how federal legislation cannot be implemented at the state and local levels without consideration of state and local problems. Fortunately, EPA realized that the proposed regulations did not inspire many states to seek the primary responsibility of administering the Safe Drinking Water Act and made a genuine effort to resolve the issues. Perhaps they were pushed in this direction by the fact that if EPA didn't get the states to implement the act then EPA would have to take the responsibility of administering the act.

In working to develop a program that could be administered by the states, the EPA enlisted the help of 27 state and local officials and private citizens. New Mexico was continuously involved during this period. As you know, John Hernandez and Dr. Wolf were appointed to the 15-member National Drinking Water Advisory Council and Francisco Garcia, of the Environmental Improvement Agency, represented the state at many meetings of the EPA work groups. The willingness of EPA to listen to state-local problems has resulted in the interim regulations being more adaptable to local situations. Where the cost of compliance however still proves to be a burden, a community can obtain a variance or exemption or request funds from the state under the Water Supply Construction program or Sanitary Projects Act.

In the past, federal regulations have been drafted based on the idea that national legislation can be uniformly administered only if a goal is decided upon and a method is selected to reach that goal. At first EPA did not acknowledge that different methods can be used to achieve a common goal or that problems in one area may not be urgent in other areas. Regulations used to implement federal law were often not responsive to local needs.

Since then EPA has realized that regulations must be "flexible". This is the new word heard around EPA today when regulation drafting is being discussed. We can see how flexibility, or being realistic, as I prefer to call it, has been used in drafting the interim primary drinking water regulations.

The proposed regulations were based on three assumptions shown in the slide:

1. Small communities of fewer than 2,500 persons are not characteristic.
2. Surface water is the major source of drinking water.
3. Treatment is the method that should be used to obtain safe drinking water.

While these assumptions are applicable to many of the nation's urban areas, not one of them is characteristic of public water systems in New Mexico.

Let us compare these assumptions to our situation here. The state has approximately 370 public water supplies that serve about 80% of the state's population. Fewer than 10% of these serve communities larger than 2,500 persons. The proposed regulations grouped all communities from 25 - 2,500 population in one category that required two coliform density samples per month and did not differentiate between surface and ground water supplies. Yet as we see 94% of our drinking water comes from ground water supplies. The interim regulations, which were promulgated in December, 1975, have broken this category into two. Now communities with a population of 25 - 1,000 are required to collect only one bacteriological sample per month and this can be reduced further by the state on the basis of sanitary surveys if the system has a ground water supply. Sampling for pesticides in ground water supplies was originally required, but the interim regulations leave it up to the state to decide if pesticides are a problem and require sampling. The interim regulations also allow for analytical work to be done by the state. This is a significant change from the proposed regulations which required the individual system to purchase this service. Our state laboratory has historically done water chemistry analyses for our water systems. If the individual system would have had to bear the cost of analyzing the required samples, the impact of the regulations would have been substantial. The interim regulations do not alter this procedure. Samples can be sent to the state laboratory for analysis and federal funds can be used to help pay the cost. We estimate that this cost will be approximately \$250,000 during the first two years of the program. Presently the state spends \$180,000 for water chemical analysis.

Now let us apply assumption #3 to New Mexico. Since surface water supplies are susceptible to rapid changes in their chemical composition, treatment of the water supply becomes necessary and frequent monitoring is important if safe drinking water is the goal. EPA's emphasis on treatment of surface supplies is justified on the national level. However, the situation can be quite different where ground water is the source of drinking water. The chemical quality is relatively constant and contamination appears slowly providing time to cope with a pollution problem before drinking water standards are exceeded. Frequent monitoring is not necessary. The practical approach is to establish a water supply that meets the standards either by regionalization of the water system or dilution. This is an important factor in providing water for domestic use in New Mexico. Where a ground water supply exceeds one or more of the drinking water standards, it is often cheaper to find an alternate supply or dilute the existing supply down to the standards rather than treat the supply. The cost of treatment becomes acceptable only when it can be divided among a large number of users. As we have seen, size is not characteristic of water systems in New Mexico. Annual per capita treatment costs become acceptable only as the system nears 10,000 persons or more. When a system reaches this size, costs range from \$1 - \$35 per person per year, depending on the type of treatment required; but for systems serving less than 100 persons, the cost of treatment can range from \$2 - \$237 per person per year.

Since New Mexico's communities are small and rely on ground water for their water supply, we find New Mexico using a different approach than the EPA envisioned as a national norm for providing citizens with acceptable domestic water supplies.

Under the authority of the Water Quality Act, the Water Quality Control Commission is considering the adoption of ground water standards to protect ground water domestic and agricultural use rather than allow the water supply to become contaminated and require each subsequent user to treat the water.

PL 93-523 also requires EPA to protect underground sources of drinking water. Part C of the Act requires the Administrator of EPA to promulgate regulations for state underground injection control (UIC) programs by December, 1975. The UIC regulations have not yet been proposed; however, a review of the latest draft indicates they will have little impact on New Mexico if promulgated in their present form, except perhaps for the oil and gas regulations.

The draft UIC regulations bring under federal control only injection wells associated with the production of oil and gas and waste disposal wells, barrier and recharge wells, mining and geothermal wells. These types of wells have not presented a ground water contamination problem in New Mexico in the past, although the possibility is increasing that they will in the future. The mining industry is developing in situ mining techniques in the state and subsurface waste disposal is increasing. The federal Water Pollution Control Act Amendments of 1972 (PL 92-500) has encouraged the subsurface disposal of waste since it is a method of eliminating the need for an NPDES permit. Indeed, it was this weakness in PL 92-500 that contributed to the passage of the Safe Drinking Water Act with Part C devoted to protection of present and potential drinking water supplies.

The draft UIC regulations do not address sources of ground water contamination that have been of concern in New Mexico. The draft UIC regulations do not control at this time such pollution sources as surface impoundments, tailings ponds, lagoons, the uncontrolled land application of municipal sewage and the discharge of wastewater to dry arroyos and ephemeral streams where recharge of the ground water can occur. The regulation of these sources is being left to the states.

The Water Quality Control Commission has recognized the need to protect ground water quality and is proposing to control these sources of ground water contaminants. Proposed ground water regulations have been approved for public hearing this summer. Consequently, the major impact in the area of ground water protection will come from the adoption of these state regulations.

In conclusion, it appears that the major impact of PL 93-523 will result from the analytical requirements, that Mrs. Brandvold will discuss, and the record keeping and reporting requirements that must be met by the hundreds of operators of public water supply systems. When the requirements become effective in June of 1977, it is anticipated that only 25 - 30 systems will not meet the standards and the regulations provide two to three years after this date for these systems to achieve compliance or operate under a variance. However,

operators must keep records of analyses and notify the public and the state of violations, recedures which are new and will take time to learn. The Act will cause a greater awareness of the quality of our water supplies and contribute to the debate - what constitutes reasonable degradation of water quality in a water-short state.