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A. Kenneth Bunger

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WHAT IS THE PRICE FOR CLEANER WATER?

By A. KENNETH BUNGER/Partner, Louisville

Water quality is a matter of public concern. The U.S. Environmental Protection Agency (EPA) tells us that one-third of our stream miles are in violation of acceptable water quality standards—that all 79 cities included in a recent survey, for example, showed traces of volatile organic chemicals in their drinking water. Despite the fact that government and industry have already spent billions on pollution control, we are also told that the improvements in waste treatment have been negated by the increasing volume of discharges, and that the waste treatment process itself accounts for at least some of the contamination in our drinking water.

Tough problems call for tough solutions. A new federal law on water pollution went into effect in 1972, billed as the most stringent and far-reaching measure ever.

Since then, municipal officials and private industry have devoted time, money, and effort trying to hammer out feasible methods for complying with its terms. If they do not adopt sophisticated treatment methods, the EPA says, they risk fines and even jail terms. Hard put to bear the expense amidst an era of economic uncertainty, their dilemma intensifies as the deadlines built into the law draw nearer. Meanwhile a quasi-legislative body in Washington known as the National Commission on Water Quality is struggling to complete its appointed task of determining—before any conclusive results from the past three years' efforts are available—whether the provisions of the federal law should be modified, refined, or abandoned altogether.

Focus on Effluents

The source of this current activity and controversy is Public Law 92-500: the Federal Water Pollution Control Act Amendments of 1972. Enacted over a Presidential veto, P.L. 92-500 was the result of a protracted debate on the importance of clean water and the lengths to which the nation should go to reclaim and protect this natural resource. A month-long conference between the Senate and House was required to reconcile their differing approaches, and when the dust settled, the nation found itself committed to two national goals:

- Zero discharge of pollutants by 1985.
- Water clean enough to allow swimming and fish propagation by July 1983, wherever possible.

Some have dubbed these aims the "1491 standard," since they seem to require the quality of water that prevailed before Columbus discovered America. Beyond these lofty but non-mandatory goals are a whole series of much more specific controls that municipalities and industries will be required to meet in the future:

- The discharge of pollutants into navigable waters is unlawful except under prescribed circumstances and conditions.
- Any discharges to be allowed are determined by EPA-defined effluent limitations.
- In general, the effluent standards for industry require the application of "best practicable" waste treatment technology by July 1977, and the "best available" technology by July 1983.
- For municipal sewage treatment plants, the comparable requirements are for "secondary treatment" by July 1977, and "best practicable" technology by July 1983.
- Whenever the technology-based effluent limits are inadequate to meet water quality standards set by EPA or a state, even more restrictive controls are applied.

An innovative feature of the pollution control program prescribed by P.L. 92-500 is its focus on effluent: the output from each sewer, pipe, ditch, channel, or other conduit that opens onto navigable water. Formerly the emphasis was on water quality. To impose restrictions or penalties, an environmental agency had to prove there was a link between a polluter's discharges and a deterioration in the quality of the receiving body of water. Establishing this connection was difficult technically, especially if adjacent manufacturers (or cities) dumped their wastes into the same stretch of river.

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Now that P.L. 92-500 is being implemented, the primary concern is what comes out of the pipe or other point of discharge. If the effluent doesn't meet required standards of purity, action can be taken against the polluter without reference to the effect on water conditions.

Further simplifying the enforcement process are the effluent limitations specified by EPA for municipal treatment works and each of 45 industries. These precise, quantitative limitations serve as the minimum discharge standards nationwide. Their proponents point with approval to the relative ease with which the standards can be applied and the equity that comes with holding all plants in the same industry to the same basic level of performance. But others question the logic of requiring,

say, a textile mill that dumps its wastes into a turbulent, fast-moving river to purify its effluent as rigorously as an identical mill discharging into a still, shallow lake.

The policies incorporated in P.L. 92-500 are endlessly debatable. Yet all agree that by clarifying and strengthening government's power to bring enforcement actions based on effluent, the law has placed polluters very much on the defensive.

Discharge Permits

The primary enforcement mechanism established by P.L. 92-500 is the National Pollutant Discharge Elimination System (NPDES), through which permits are issued, monitored, and enforced. Anybody who discharges wastes into navigable waters is required to obtain an NPDES permit—including over 20,000 companies and an equal number of municipalities.

P.L. 92-500 attempts to merge the NPDES and existing state permit programs by requiring EPA to turn over administration of the NPDES permit to any state that can satisfy certain basic prerequisites. EPA estimates that by this summer 30 states will have enacted the necessary legislation or otherwise upgraded their permit programs to the point where they can assume responsibility for NPDES permits.

An NPDES permit is essentially a contract in which the local government that owns a sewage treatment facility, or the corporation that owns a factory, agrees to a specific set of discharge limitations. The permit indicates what pollutants may be expelled and the average and maximum daily amounts authorized. If the limitations are beyond the discharger's immediate capability, the permit specifies interim deadlines for the gradual reduction or elimination of the pollution.

A variety of enforcement actions are available under the terms of P.L. 92-500. Penalties for civil actions range up to \$10,000 per day; criminal violations are subject to fines as high as \$25,000 per day and/or one year imprisonment (doubled for subsequent offenses). Moreover, continuing or recurring violators risk being barred from receiving federal contracts, loans, or grants other than those dealing with pollution abatement.

The Law in Action: A Case History

The following description summarizes the experience of one company that is being regulated under the new federal water pollution control law. It is safe to say there are many others who have had experiences of a similar nature.

The company in question serves the chemical industry

along the Ohio River. Because of the constantly changing mix of incoming chemical products, the company's effluent characteristics vary from one day to the next and cannot be predicted in advance.

In 1968, the company acquired 14 acres of land not served by municipal treatment facilities. It constructed its pretreatment facility according to health authority standards in existence at the time and obtained a Corps of Engineers permit to discharge into a storm water drainage ditch. In 1971, the characteristics of the effluent changed significantly because of an increase in latex-type materials. These contain white emulsified solids, and the new discharge became very noticeable and an objectionable pollutant in the drainage system.

As a result, a new pretreatment plant was constructed and placed in operation in 1972. The facility was designed to treat 20,000 gallons of wastewater per day and construction costs exceeded \$200,000. The plant was inspected by county health authorities and approved in early 1973.

The composition of the wastewater changed further between the time the plant was originally designed and when it began operation. Fortunately, the plant was flexible enough to handle the increased load. Total cost of operation was approximately \$100,000 in 1973, excluding administration. The company installed its own laboratory in mid-1973 and began its own research in an attempt to develop a better, and, it was hoped, less expensive method of treatment. In the fall of 1973, additional research work was begun in carbon absorption techniques and other areas of possible improvement.

By this time P.L. 92-500 had come into effect. Accordingly, the company sought and received an NPDES permit in early 1974. However, the construction and operating costs of facilities needed to produce the quality of effluent called for under the permit (which was much more restrictive than industry limitations) appeared out of reach. The company was left with no alternative but to find a different method of disposing of pretreated wastewater.

A small municipal system serving the area proposed to provide service to the company, intending to include it in an improved and expanded system which would be financed with an EPA grant. Momentarily a solution seemed at hand. But then a startling discovery was made. A much larger neighboring municipality had already developed a plan, whereby it would receive EPA funding to create a regional sewage treatment system that would absorb and eliminate the one operated by the smaller unit. At this point, the company began to seek a

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connection to the major municipal system.

The next problem was the availability of the nearest line of the major municipal system, which was more than a mile away. After study, the cost was estimated at \$100,000, plus easements.

Another alternative was considered. The company, together with adjacent industries, considered developing an industrial park to provide a system sufficient to handle all of their needs and to develop unoccupied land. The company's cost of participation in this particular project was to be in excess of \$200,000, which it planned to recover over five years as the land was used. An additional cost was to be the increased user charges of approximately \$800 per month in addition to the system development costs and the currently-existing pretreatment cost of \$8,000 per month. This additional user charge is due to the high pollutant constituents of the effluent. To solve this problem, the company considered installing the carbon absorption system, which would hike pretreatment operating costs another \$150,000 per year. Combined costs of carbon pretreatment together with other aspects of the proposed system would require capital investment of \$500,000 and an estimated annual operating cost of \$300,000.

With each new analysis showing higher treatment costs, the company was advised to study still another approach: recycling. Rather than attempting to purify the effluent, why not seek methods of salvaging pollutants and re-using them in some productive way? The technology for recycling waste materials is still in the developmental stages and tends to be quite expensive, but the company is exploring this avenue, as it has all the others.

Paying the Bill

There is no "happy ending" to the company's case history. For it and many other public and private polluters, the quest for economically feasible pollution-control methods will continue, punctuated at intervals by changes in pollutant characteristics, EPA regulations, or permit terms—changes which more often than not nullify all previous plans and computations.

Financing the development of pollution control facilities and processes is a major concern in both the private and public sectors. As the case history shows, this is often a complex, dragged-out affair in which original cost projections repeatedly rise in great quantum jumps. It is now obvious that Congress did not possess accurate cost information when it approved P.L. 92-500.

Just how much money is required to clean up our water?

Reliable cost estimates in this field are hard to come by, always an ominous sign when evaluating massive governmental initiatives. Keeping in mind the highly tentative nature of the data, the "best guesses" are that the cumulative 1973-81 costs of implementing the 1977 effluent limitations will be \$77 billion for state and local governments and \$44 billion for industry. About 45 percent of these costs are attributed solely to P.L. 92-500.

But scrutinizing the cost of the 1977 limitations doesn't begin to tell the whole story. What about the more restrictive 1983 requirements? Here we are even farther into the realm of speculation. Yet if some of the estimates available are useful as "ballpark" figures, the implications are astounding. In the public sector, the cost of constructing the necessary facilities has been estimated at \$350 billion. The comparable amount for private industry is placed at \$116 billion.

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Political scientists and economists can debate the public policy and resource allocation issues suggested by expenditures of this magnitude. Public officials and company executives face a starker question: where will the money come from?

For municipalities, there is an EPA grant program that will pay 75 percent of the planning, site acquisition, and construction costs for sewage treatment works meeting the requirements of P.L. 92-500. Congress authorized \$18 billion for the construction subsidies during fiscal years 1973-75, making this one of the federal government's ten largest grant programs. But \$18 billion seems obviously insufficient now that figures such as \$77 billion and \$350 billion are out in the open.

Other than the tax exemption for pollution control bonds, there are few federal subsidies of any consequence for private industry. Unless a company wishes to reduce its profits, the chief option for covering the costs of pollution control facilities is to pass them on to consumers. This is a route that cannot be used often, and one most companies would prefer to avoid in any case.

As they search for ways to finance their rising pollution control costs, municipalities and private industries are finding additional complications in a little-noticed section of P.L. 92-500. The provision requires a local government that receives an EPA construction grant to charge users of its treatment facilities a pro rata share of the expenses attributable to the user's wastes. And each industrial user is to be assessed a share of the federal grant corresponding to its portion of all industrial waste treatment costs.

Traditionally many communities have offered their local industries "volume discounts," and have not attempted to recover the federally-subsidized capital costs at all. If they now attempt to increase their sewer revenues to comply with P.L. 92-500, they risk seeing large industrial users pulling out of their sewage treatment systems or out of town altogether. Yet the alternative is to forego federal aid and try to win voter approval of a bond issue to cover the entire construction expense, which may also entail a tax increase. For their part, many companies have difficulty in absorbing the abrupt sewer fee increases that come about when the pro rata approach goes into effect. In 1975 and beyond, more and more treatment plants built with P.L. 92-500 funds will become operational, and the relationships between city halls and local industries in many places will enter a delicate phase.

The Commission Study

When it passed P.L. 92-500, Congress gave itself an "out" by providing for a special feasibility study, the results of which would be known in time to legislate again, if necessary, before the 1977 and 1983 deadlines arrive. The study is being performed by the 15-member National Commission on Water Quality, consisting of five Senators, five Representatives, and five public members named by former President Nixon. The panel is headed by Vice President Rockefeller, with Senator Edmund Muskie (Maine) and Representative Robert Jones (Alabama) serving as vice-chairmen.

As stated in the law, the Commission's purpose is to report on the technological, economic, social, and environmental effects of achieving or not achieving the 1983 effluent limitations and goals. The group has interpreted its mandate to include similar consideration of the 1977 requirements as well as the 1985 "zero discharge" goal.

The Commission's report is expected in the fall of this year, leaving time for action before the 94th Congress adjourns in late 1976. Meanwhile the future of water pollution regulation remains somewhat uncertain.

The National Commission on Water Quality appears destined to call its shots based on best judgment rather than on conclusive evidence, as it deliberates its position on the key issues.

Technically there is nothing to prevent the Commission from declaring the law's provisions unfeasible and convincing Congress to completely overhaul the existing legislation, as occurred in 1972. Or it could postpone the statutory deadlines and soften some of the more ambitious requirements. Or it could recommend no change at all. Unfortunately there are still almost as many data gaps as there were in 1972. The Commission appears destined to call its shots based on best judgment rather than on conclusive evidence, as it deliberates its position on the key issues.

Municipalities and private companies are left with some hard choices of their own. Those who are conscientious, such as the company in the case history, can proceed to incur the expense of complying with the federal law as it stands, hoping that Congress will not upon further reflection decide that adherence to the 1977 and 1983 timetables is unnecessary after all. Others may decide to drag their feet, banking on new legislation containing extensions and other concessions. In the middle is EPA. As it deals with permit violations, it must keep in mind the possibility of a Congressional retreat from the precepts of P.L. 92-500.

Conclusion

P.L. 92-500, although heavily criticized by many, has already achieved favorable results and promises to improve its record despite a slow start. It has generated tremendous activity in the water pollution control field. In many areas of the nation, waterways are receiving much less pollution through the combined efforts of government and industry. There is a new consciousness of the importance of better waste treatment technology and a broadened appreciation of the need for measured progress toward clearly-defined objectives. The concept of a nationally-coordinated attack upon water pollution has gained wide acceptance. Against the modest record of all previous federal legislation, these are no small accomplishments. We may well be capable at last of reversing the long downward trend we began back in the year 1492. . . . 