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FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS—1968

(90-28)

HEARINGS BEFORE THE COMMITTEE ON PUBLIC WORKS HOUSE OF REPRESENTATIVES

NINETIETH CONGRESS

SECOND SESSION

ON

H.R. 15906 and Related Bills

TO AMEND THE FEDERAL WATER POLLUTION CONTROL
ACT, AS AMENDED (OIL AND HAZARDOUS SUBSTANCE
POLLUTION CONTROL ACT)

APRIL 23, 24, 25, AND MAY 2, 1968

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FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS—1968

TUESDAY, APRIL 23, 1968

HOUSE OF REPRESENTATIVES,
COMMITTEE ON PUBLIC WORKS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:10 a.m., in room 2167, Rayburn Building, the Hon. John A. Blatnik presiding.

Mr. BLATNIK. The Committee on Public Works will please come to order.

We meet this morning to hear testimony over a 3-day period on administration bills H.R. 15906, and H.R. 15907, by Mr. Fallon, chairman of the full Committee on Public Works. We also have S. 2760, passed by the Senate last December. We have summary bills which should be listed in the record at this point by House bill number, and name and brief title descriptions or purposes, almost 10 or 12 in number, all related to the general subject.

(The listing of the bills follow:)

H.R. 15906, by Mr. Fallon and Mr. Blatnik; H.R. 15928, by Mr. Howard; H.R. 16015, by Mr. Polanco-Abreu; H.R. 16163, by Mr. Pepper. To amend the Federal Water Pollution Control Act, as amended (Oil and Hazardous Substance Pollution Control Act).

H.R. 16559, by Mr. Keith, Mr. Boland, Mr. Bates, Mr. O'Neill, Mr. Halpern, Mr. Kupferman, Mr. Dulski, Mr. McClory, and Mr. Blackburn; H.R. 15907, by Mr. Fallon and Mr. Blatnik. To amend the Federal Water Pollution Control Act, as amended, relating to the construction of waste treatment works, and to the conduct of water pollution control research, and for other purposes (Water Quality Improvement Act of 1968).

S. 2760 (Passed Senate Dec. 12, 1967); H.R. 14000, by Mr. Nedzi. An act to amend the Federal Water Pollution Control Act to authorize research and demonstration programs for the control of lake pollution and acid and other mine water drainage, and to prevent pollution of water by oil.

H.R. 13923, by Mr. Fallon, by request; H.R. 16207, by Mr. Blatnik. To amend the Federal Water Pollution Control Act, as amended, to control pollution from vessels within the navigable waters of the United States.

H.R. 7234, by Mr. Kupferman. To provide that plans and regulations established pursuant to section 10 of the Federal Water Pollution Control Act for the control of water pollution shall apply to vessels (including boats) and marinas.

H.R. 494, by Mr. Dingell. To amend the Federal Water Pollution Control Act, as amended, to strengthen and improve authority to enforce abatement of pollution, to provide for filing of notice with respect to discharge of matter into interstate or navigable waters and to require permits to regulate such discharge of matter, and for other purposes.

H.R. 5735, by Mr. Morse. To amend the Federal Water Pollution Control Act to authorize grants for the maintenance of certain treatment works.

H.R. 16044, by Mr. Dingell. To amend the Federal Water Pollution Control Act to authorize certain grants for assisting in improved operation of waste treatment plants.

H.R. 13852, by Mr. Pucinski. To amend section 4 of the act of March 3, 1905, to prohibit the dumping of certain spoil into the Great Lakes.

H.R. 13708, by Mr. Rostenkowski. To abate the pollution of the Great Lakes and other navigable waters of the United States from sewage, wastes, oils, and detergents and to encourage water pollution control.

H.R. 2109, by Mr. Horton; H.R. 11119, by Mr. Mosher. To provide grants for assistance in the research and development of methods to abate pollution of the water of Lake Ontario and Lake Erie.

H.R. 13407, by Mr. Zwach; H.R. 13794, by Mr. Brown, of Michigan; H.R. 16257, by Mr. Blackburn. To amend the Federal Water Pollution Control Act in order to authorize comprehensive pilot programs in lake pollution prevention and control.

H.R. 10751, by Mr. Hanley. To amend section 5 of the Federal Water Pollution Control Act, as amended, to authorize the Secretary of the Interior to undertake a research and demonstration program for the improvement of the quality of the Nation's lake waters.

H.R. 13064, by Mr. Langen. To amend the Federal Water Pollution Control Act to authorize certain grants for rehabilitation of the lakes of the United States.

H.R. 13312, by Mr. Steiger, of Wisconsin; H.R. 13638, by Mr. Dow; H.R. 13665, by Mr. Vander Jagt; H.R. 13853, by Mr. Riegle; H.R. 14002, by Mr. Reuss; H.R. 14153, by Mr. Ruppe. To amend the Federal Water Pollution Control Act, as amended, to authorize a program of research and demonstration for the control of pollution in lakes.

H.R. 13396, by Mr. Kupferman. To amend the Federal Water Pollution Act to establish research and planning programs with respect to the prevention and restoration of eutrophic lakes.

H.R. 3342, by Mr. Talcott. To amend the Federal Water Pollution Control Act to require certain studies of the pollution of the Monterey Bay and adjacent waters, and to prohibit the operation of any interceptor drain so as to pollute such waters.

H.R. 8380, by Mr. Cramer. To amend section 11 of the Federal Water Pollution Control Act relating to abatement of pollution from Federal installations.

H.R. 8752, by Mr. Eilberg; H.R. 8759, by Mr. McCarthy. To amend the Federal Water Pollution Control Act to establish standards and programs to abate and control water pollution by synthetic detergents.

H.R. 17, by Mr. Horton. To amend the Federal Water Pollution Control Act in order to establish an incentive award program for industries, municipalities, and other political subdivisions of States which demonstrate excellence in waste treatment and pollution abatement programs.

OPENING STATEMENT

Mr. BLATNIK. I have a brief statement which I would like to read now.

Our continuing concern for clean water brings our attention to a number of bills pending before this committee. Particular emphasis will be placed on the growing need for the prevention, removal and control of pollution on our lakes, the devastating effects of oil pollution as demonstrated by the oil spills of the now famed *Torrey Canyon* tanker, and the proposed new debt financing of waste treatment construction plants. We appreciate the talent and the time of the cross-section of witnesses that have responded and will soon give us the benefit of their knowledge.

From the reservoir of information gathered from this hearing and from a variety of other sources, we seek to make meaningful improvement in the quality of the Nation's water by expanding and in some instances tightening our water pollution control legislation.

The call for clean water is becoming louder and louder as communities and industries demand more water. Congress has answered this call by unanimously passing two historic pieces of legislation in

the form of the 1965 Water Quality Act and the Clean Water Restoration Act of 1966. The President has responded with a clear mandate for clean water. So from every echelon and from every walk of like response is being heard in answer to the call for clean water.

We have come a long way since the first national water pollution control legislation was first hammered out right here in this committee. We are now gearing up for the national effort to clean up our all-important waters. Generations of gross neglect have finally caught up with us and we are faced with the moment of truth.

As we start these hearings, there are encouraging signs that we are winning the cause for clean water. But there is so much to be done and we need to muster strength from every corner. Much of that strength to bolster and to buttress the cause for clean water at every level will come from concerned people like yourselves. We appreciate your cooperation and look forward to your contribution in the strides forward for clean water.

We would like to welcome our former colleague, the distinguished Secretary of Interior Stewart Udall, and your distinguished panel of experts which include:

Max Edwards, Assistant Secretary of Interior for Water Pollution Control;

Joe G. Moore, Jr., Commissioner of the Federal Water Pollution Control Administration, Department of Interior;

Phillip S. Hughes, Deputy Director of the Bureau of the Budget; and

David Finnegan, Assistant Legislative Counsel with the Department of Interior.

Mr. Secretary, will you please proceed at will, and you will be open to questions, and questions directed to areas of specific interest, concern, or need clarification, either you or your associates can handle it.

Mr. Secretary.

STATEMENT OF HON. STEWART L. UDALL, SECRETARY OF THE INTERIOR; ACCOMPANIED BY HON. MAX N. EDWARDS, ASSISTANT SECRETARY OF THE INTERIOR FOR WATER POLLUTION CONTROL; HON. JOE G. MOORE, JR., COMMISSIONER, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, DEPARTMENT OF THE INTERIOR; PHILIP S. HUGHES, DEPUTY DIRECTOR, BUREAU OF THE BUDGET; AND DAVID FINNEGAN, ASSISTANT LEGISLATIVE COUNSEL, DEPARTMENT OF THE INTERIOR

Secretary UDALL. Mr. Chairman, I have a prepared statement. I would like for it to appear in its entirety in the record as if read.

Mr. BLATNIK. It will be so included.

(The statement referred to follows:)

STATEMENT OF HON. STEWART L. UDALL, SECRETARY OF THE INTERIOR

Mr. Chairman and Members of the Committee, I welcome this opportunity to appear, in response to your invitation, to discuss with the committee the need for new legislation to preserve, enhance, and restore the quality of the Nation's waters.

It has been not quite two years since I became, with the assent of Congress, the Federal officer with primary responsibility to protect the quality of America's

water resources. Your role, Mr. Chairman, and that of this committee, reaches back to the origins of the national water pollution control program. The Federal Water Pollution Control Act, which became permanent law in 1956, and the strengthening amendments of 1961, 1965, and 1966, are in no small measure the products of your deliberations.

The Water Quality Act of 1965 and the Clean Water Restoration Act of 1966 provided new and expanded authorities for an all-out assault on the pollution of our rivers, lakes, and coastal waters. But the enormity and the complexity of the water pollution problem, and the heavy demands on the Federal budget, deny us a period of consolidation, devoted to the effective implementation of our enlarged responsibilities. Conditions call for further legislation. The law must be sufficient to the task.

You have before you major clean water legislation proposed by the Administration: the "Water Quality Improvement Act of 1968" (H. R. 15907), the "Oil and Hazardous Substance Pollution Control Act of 1968" (H. R. 15906 and identical bills), and legislation to control pollution from vessels within the navigable waters of the United States (H. R. 13923 and H. R. 16207). Additionally, we urge the enactment of S. 2760, already passed by the Senate, which deals with important aspects of the oil pollution problem, as well as with lake eutrophication and acid and other mine water pollution.

I have already conveyed to Congress by letter the Administration's support of these proposed amendments to the Federal Water Pollution Control Act. Each is addressed to one or more parts of the total water pollution problem.

Today I want to discuss the need for: (1) Federal assistance to construct waste treatment works by a method which supplements the present grant program; (2) more effective means to cope with pollution by oil and other hazardous substances; (3) a program for the control of pollution from vessels; and (4) legislation to control pollution of lakes and to control pollution from acid and other mine drainage.

THE "WATER QUALITY IMPROVEMENT ACT OF 1968"

No conservation measure before Congress today is more important, in my judgment than this bill, introduced in the House as H. R. 15907.

The Water Quality Act of 1965 called for the establishment of enforceable State water quality standards on all interstate and coastal waters. Over half the State standards have now been approved. The rest will soon be approved.

These standards include implementation plans which call for the construction of needed waste treatment works on a timely basis. But these works will cost money—large sums of money. The recent Interior report, "The Cost of Clean Water," states that the "cost of constructing municipal waste treatment plants and interceptor sewers is estimated at \$8.0 billion, exclusive of land and associated costs" over the next five years. We have some indications that these initial estimates may be conservative. Whatever these costs finally turn out to be, the fact remains that these facilities will be needed or communities will not meet the schedules of the water quality standards and will face State and Federal enforcement actions. One can readily see that, to implement the water quality standards program on the basis of the schedules contained in the State standards which have been approved, there is an urgent need to provide adequate funds to finance the municipal construction phase of the standards program. The Water Quality Improvement Act of 1968 is the cornerstone of this program.

In enacting the Clean Water Restoration Act of 1966, Congress unanimously authorized \$3.4 billion for grants for municipal waste treatment plants for fiscal years 1968-1971. \$203 million was appropriated this fiscal year, compared with an authorization of \$450 million. The President's budget for the next fiscal year contains \$225 million, compared to \$700 million authorized.

The Administration believes that the Federal Government is committed to help localities meet large water pollution expenditures now. H.R. 15907 will enable us to commit the full \$700 million authorized for fiscal year 1969.

Instead of the program's being funded entirely by direct grants, as is now the case, we are proposing that there be added to the existing program a contract approach aimed primarily at the larger urban areas.

Specifically:

1. The bill would authorize long-term contracts—up to 30 years—with States and local public bodies. These contracts could be initiated once a level of contractual authority is established in an Appropriation Act for fiscal year 1969.

These contracts would be binding obligations of the United States. Once executed, appropriations to liquidate them would be automatic.

2. These contracts could be pledged by the States or local public bodies as security for bonds issued by them to cover the cost of the treatment plants, including the Federal share.

3. Under the contracts the Federal Government would pay the principal and interest on that portion of the bonds that represents the normal Federal grant share under the present Act. The contracts would also provide a Federal guarantee of the non-Federal share and the payment of an interest subsidy to reduce the net effective interest rate to States and localities to a rate reasonably comparable to rates on tax-exempt municipal bonds.

4. The bill provides that the interest on bonds issued to construct these plants shall not be exempt from Federal income taxation.

Let me emphasize that this non-tax-exempt feature is a major element of this very important legislation. It is, however, not intended as an "opening wedge" precedent, as some have contended, to do away with tax-exempt bonds. I cannot emphasize this point too strongly.

This provision is important for three reasons:

First, the bill provides for a Federal guarantee of the entire bond, even the local share, and for an annual Federal payment of principal and interest on part of them. It would not be good policy to apply this guarantee to tax-exempt bonds.

We believe that the Federal guarantee would have the effect of lowering the risk, equivalent to a triple-A bond rating for the communities concerned.

Second, without this provision, we are convinced that the proposal could add substantially to the volume of new issues of tax-exempt bonds by State and local public bodies. This would be particularly undesirable in view of the already large volume of municipal bond issues and the current high interest rates which States and localities are required to pay. Making the proposed new bonds taxable rather than tax-exempt would avoid adding to pressures on the municipal bond market and would thus result in significant savings in interest costs to States and localities on their borrowings for other urgent needs such as schools, roads, and other public facilities.

Third, the use of taxable rather than tax-exempt bonds would also be significantly cheaper for the Federal Government, even with the interest subsidy. The reason is that, as public and private studies have demonstrated, tax-exemption costs more to the Federal Government in lost revenues than communities gain in lower interest costs. Therefore it is possible for the Federal Government to give communities an equivalent interest subsidy and still save money.

5. The contracts would be available where the waste treatment system, not the particular project, serves 125,000 people or more or serves all or part of a standard metropolitan statistical area.

In our cost study, we indicated that there is a pressing need to upgrade waste treatment facilities in our major metropolitan areas. The program, which is designed primarily to meet urban requirements, also would cover smaller communities which form a part of, or are contiguous to, larger metropolitan areas. It is our hope that this legislation will encourage metropolitan or regional waste collection and treatment.

6. The bill would also require the establishment of a system of user charges which would be sufficient to amortize the local share, pay operation and maintenance costs, and establish a reasonable reserve to meet planned expansion needs.

The term, user charge, implies a utility function and consequently a relationship between the payment required and the cost of providing the service. In addition, economic efficiency and equity would be more fully served if the charge paid by users of the system reflected the costs which this use imposes on the system.

The user charge has attained particular validity in current times because of the movement from old practices in waste disposal to a new level of municipal sanitation reflected in the provision of sewage treatment works, and because of the high costs of local government in general. The charge permits the separation of sewage treatment function from the much pressed property tax. It relates the costs of service more closely to the users, manifesting a more equitable distribution of the costs of government among the members of the community. As the costs of local government continue to rise, and as the pressures on the overloaded tax bases of local government mount, the merits of user charges for sewerage service should become increasingly apparent. Further, user charges require

industrial firms to pay an equitable share of treatment costs, and provide them an incentive to reduce their wastes through pretreatment, process changes, and better management of wastes.

We envision too, that such charges will also be needed to pay the local share of bonds.

7. The bill provides that not more than ten percent of the funds available for contracts could be obligated in any one State. Contract funds not obligated in one year carry over to the succeeding year and are added to the total contractual authority for that year.

We recognize that this is a departure from the allocation formula approach now in the Act. But we believe that this change is important, if the Federal Government really means to meet its commitment to the highly urbanized areas of the country with the greatest water pollution control needs. We fully expect that the smaller communities of the Nation, which are not eligible under the contract approach, will use the direct grant method to finance construction.

8. In 1966 Congress added to the Act a provision which was intended to encourage communities to proceed with the construction of treatment works without a Federal grant or only a partial one. We would approve the project and the community would, usually with State help, finance it. They could then seek reimbursement for the Federal share from allocations available for grants prior to July 1, 1971.

The 1966 amendment made it very clear, however, that approval of the project could not be construed, at any time, as an obligation or commitment of the Federal Government to provide funds for the project. As of April 1, 1968, 379 funded or partially funded projects have been approved. These could receive a total Federal payment of about \$215 million when, and if, the money is available for such payment.

The Water Quality Improvement Act of 1968 is designed to replace the 1966 amendment after July 1, 1968, without affecting eligible projects already approved. We recognize that some States, like New York, have initiated a program with some reliance on this reimbursement provision. We believe, however, that these States will realize that the contract approach is a vast improvement because it gives the community more than a fond hope of payment. It gives them a commitment or obligation of the Federal Government. In our view, this should be far more acceptable than the reimbursement feature now in the Act.

In addition to these features of H.R. 15907, the bill would reorder and extend the Act's present provisions relating to research, demonstrations, investigations, training, and information.

The Administration views this legislation as a vital stimulant to attain water quality standards. It is, in our opinion, a realistic way to clean up water pollution within a reasonable time framework. It is designed to help our urban areas—the majors, city managers—the county officials, and the governors—meet the ever-mounting costs of rescuing the Nation's waterways and restoring them to acceptable levels of purity.

CONTROL OF POLLUTION BY OIL AND OTHER HAZARDOUS SUBSTANCES AND POLLUTION FROM VESSELS AND SHORE INSTALLATIONS

In many respects, the problems of vessel pollution, oil pollution, and spills of other hazardous substances are closely related. All may come from the same sources, may be intermittent in nature, may occur at almost any point in or near navigable waters, and may result in damages ranging from the almost invisible to the deadly or catastrophic. The *Torrey Canyon* disaster and the recent breakup of the *Ocean Eagle* in San Juan Harbor have increased public awareness of the problem.

The Report of the President, "Oil Pollution," prepared jointly by the Department of the Interior and the Department of Transportation in 1967, concerns problems of pollution from spills of oil and other hazardous substances. The 1967 Report to Congress, "Wastes from Watercraft," (Senate Document No. 48, 90th Congress, 1st Session), considers pollution resulting from the operation of vessels of all types.

The Oil Pollution Report was prepared at the President's direction in the wake of the *Torrey Canyon* disaster and other oil pollution incidents. The Report suggests a number of legislative needs to strengthen Federal authority to prevent and control spills:

(1) amendments to the Oil Pollution Act, 1924, to extend coverage to all spills whether or not they are grossly negligent or willful, to spills from all sources,

and to spills within the Contiguous Zone, as well as within the territorial sea and navigable waters of the United States;

(2) legislation to require an oil discharger to pay all of the costs, of removing the oil, incurred by the Secretary of the Interior;

(3) legislation to make the person who discharges or deposits hazardous substances other than oil into navigable waters or the Contiguous Zone responsible for removing the substance, and to empower the Secretary of the Interior to act if such person fails to act, and to recover the costs.

Oil Pollution Provisions of S. 2760

S. 2760, passed by the Senate and now before you, would fulfill the Report's recommendations relating to the control of oil pollution in the navigable waters of the United States. It would repeal the Oil Pollution Act, 1924, and incorporate its provisions, with strengthening changes, into the Federal Water Pollution Control Act. Most of these changes were recommended by the Administration last June. The bill would:

(1) Delete the requirement that a "discharge" be "grossly negligent or willful" before liability attaches;

(2) Limit criminal penalties to cases in which the discharge was due to a willful act;

(3) Apply civil penalties to all discharges except emergencies imperiling life or property, unavoidable accident, collision, or stranding, the last two to apply only to vessels;

(4) Expand the Act's coverage to shore installations;

(5) Specifically include in its coverage Puerto Rico, the Virgin Islands, Guam, and American Samoa;

(6) Require the owners of vessels and shore installations to remove discharged oil from navigable waters and adjoining shorelines or to pay the cleanup costs in all cases except where the discharge was caused by an Act of God.

Thus, the discharger has the responsibility to clean up the oil under our direction. We would only act where he fails to meet his responsibility. The Government can then recover its cost and, in the case of a vessel, the owner cannot limit his liability.

We realize that this clean-up provision is quite severe, but we believe there is a clear and present need for this authority as recently demonstrated in Puerto Rico. We hope that it will make those in charge of tankers and shore installations more conscious of their responsibility to the Nation to prevent damage to its natural resources. Those who control the oil should be responsible for bearing this cost rather than the public.

(7) Authorize appropriations to a revolving fund to enable the Secretary in finance such clean-up measures.

In my letter of March 8, 1968, to this Committee, I recommended certain amendments to this portion of S. 2760 in order to facilitate administration of these provisions. The primary purpose of the proposed amendments is to clarify certain provisions of the bill and to delineate more precisely the respective roles of the Department of the Interior and other Federal agencies. We believe quite strongly that the Coast Guard and other agencies must be given a big role in making the legislation work.

The "Oil and Hazardous Substance Pollution Control Act of 1968"

The oil pollution control portion of S. 2760 is a major step toward closing yet another chink in our pollution control armor. However, the bill does not reach certain aspects of the recommendations in the Oil Pollution Report. The "Oil and Hazardous Substance Pollution Control Act of 1968," before you as H.R. 15906 and identical bills, addresses itself to additional key areas not covered in S. 2760. S. 2760 and H.R. 15906 are complementary. They do not overlap, but, taken together, they extend our ability to control oil pollution to the Contiguous Zone, the nine-mile strip of ocean beyond our territorial waters, which was established by an International Convention on September 10, 1964.

The bill would further provide for the clean up of large or unusually hazardous discharges of pollutants other than oil. The Water Quality Act of 1965 authorizes the Secretary of the Interior to request the Attorney General to bring suit to secure abatement of pollution which reduces the quality of interstate waters below established water quality standards. However, the legal procedure necessarily delays abatement action for at least six months. Thus, the Federal Government now lacks authority to cope with large and unusually hazardous discharges of material, such as those which occurred recently on the Clinch River

in Virginia and at Dunreith, Indiana, as they occur and before they do great damage. Immediate action is important for containment, and for the control of spills of hazardous substances.

The clean-up authority is similar to that applicable to oil. It is not, however applicable to all discharge of matter, but only to those of sufficient quantity to warrant a finding by the Secretary of the Interior that the discharge or threatened discharge presents an imminent and substantial hazard to the public health or welfare.

Control of Pollution from Vessels

Vessels—watercraft of widely varying types—are included in the category of the migratory polluter. Sanitary wastes, litter, bilge pumpage, and polluted ballast discharges are among the kinds of pollutants emanating from these sources. Watercraft wastes are highly visible, offensive to the senses, and often have a pollution effect disproportionate to their quantity. H.R. 13923 and H.R. 16207 embody the legislative action which we believe is required to mount a comprehensive attack on vessel pollution.

Pollution of waters by watercraft discharges is widespread. Boats and vessels move from point to point in the Nation's waters and may cause local pollution at any point in their travels. Pleasure craft gathering for a weekend of fun or during a holiday, may suddenly impose a load of untreated wastes on receiving waters equivalent to those from a small community. Vessels traveling to and from foreign ports may well transport organisms which can reinfect our environment.

Today, there are approximately 46,000 documented commercial vessels, 65,000 nondocumented commercial fishing vessels, 1,500 Federal vessels, and 8,000,000 recreational watercraft using the navigable waters of the United States. There are, in addition, almost 40,000 foreign ship entrances through Customs recorded each year in these waters. The 8,000,000 recreational watercraft are served by some 5,500 marinas, many with satellite facilities such as restaurants, boatels, and shore-based sanitary facilities located across the Nation.

The following pollution problems stem from these watercraft sources:

Public health is threatened.—I quote an excerpt from a January 1968 report by the U.S. Public Health Service: "The fecal material from boats has a much different public health significance than municipal sewage, whether treated or untreated. Fresh fecal material contains pathogens which when introduced into the growing area have not had time to become less viable as those in a sewage system." Paraphrased, pathogens (i.e., disease causing organisms) are more active in fecal material from watercraft than those discharged from municipal sewage systems due to the freshness of such discharges.

Shellfish harvesting is curtailed.—For reasons of pathogen concentration by the shellfish, some States (Virginia as an example) prohibit shellfish harvesting where there is appreciable watercraft traffic nearby.

Drinking water for millions of Americans can be threatened by waste discharges from watercraft.—Except where the Interstate Quarantine Regulations prohibit the discharge of vessel wastes, including bilge and ballast waters in close proximity to a public water supply intake on the Great Lakes, there is no protection under existing Federal authority for the many water supplies drawn from our inland waterways and other lakes.

The aesthetic character of our waterways may be threatened or destroyed.—The total number of boat passages is almost countless. Yet, all boats serve as possible vehicles for litter pollution during each and every passage. Uncounted tons of refuse and trash from these floating platforms wash up on pleasure beaches and the bottom shore lines of our lakes, rivers, estuaries and coastline. Further, the unsightliness of floating fecal material in contact water sport areas needs no elaboration.

No single control mechanism of watercraft pollution exists today over this Nation's waterways. To be sure, there is some State regulation, but this is, for the most part, imperfect and certainly nonuniform. The inadequacy of these controls can be demonstrated by the needs of watercraft using public waterways.

A barge tow plowing its way down the Ohio and Mississippi Rivers from Pittsburgh to New Orleans may pass through the jurisdiction of 11 States.

A coastal freighter may touch as many as 25 harbors in 20 State jurisdictions between Portland, Maine, and Portland, Oregon.

The pleasure boater, whose number is increasing by more than 200,000 owners per year, poses the same problem since the ubiquitous boating public often travels or trailers watercraft from one jurisdiction to another.

Essentially, each and every one of these watercraft operators needs a uniform set of waste control regulations and approved treatment or control devices.

Voluntary compliance to recommended regulations produces only partial control and, as a result, is patently unfair to those who have acted responsibly. H.R. 13923 and H.R. 16207 include measures which, when enacted and fully implemented, should rectify many of the problems I have cited.

1. The bill would apply to foreign and domestic vessels, and to the navigable waters and the Contiguous Zone. The bill would direct the Secretary of the Interior to establish, by regulation, standards for the control of sewage emitting from vessels.

The standards will be developed after an extensive investigation and research effort is carried out to examine the efficiency and effectiveness of various systems for the treatment of sewage from vessels, including a careful study of the costs of installing, operating, and maintaining such systems on various classes of vessels.

The standards will be as uniform as possible for various classes of vessels within similar circumstances.

The regulations will set reasonable compliance schedules. These schedules will distinguish between new vessels and existing vessels. Special consideration will be given to those vessels that included sewage control systems on board to meet State requirements or the voluntary levels of treatment established in the 1965 Handbook on Sanitation and Vessel Construction of the United States Public Health Service.

2. The bill directs the Secretary to prescribe regulations governing the discharge of ballast and bilge water into such waters from vessels engaged in commerce. They will apply to all commercial type vessels. The regulations will limit the quantity of such discharges and the time and place of the discharges. The regulations will not necessarily prohibit all such discharges in all our waterways.

3. The bill directs the Secretary to issue regulations governing the discharge of litter, garbage, sludge, and other substances, other than oil and dredge spoil, from vessels whether such substance originates on the vessel or is transported by the vessel.

4. Before the Secretary issues any regulations, he must consult with Defense and other interested Federal and State agencies and representatives of various interested industries. After the regulations are issued, the Secretary is required to give everyone a reasonable opportunity to comment before they become final.

5. The bill would authorize the Secretary to exempt certain classes of vessels. Defense and other Federal vessels must comply with the regulations, except where national security is involved.

6. Once the standards are issued, a program for certifying the adequacy of various devices will be initiated. Under this program manufacturers may request the Secretary to consider a particular device together with the manufacturer's test data to determine whether such a device, if installed on a vessel and used and maintained properly, will enable the vessel to conform with the standards. Once certified by the Secretary, the manufacturer will be able to sell as certified all devices that conform to the certification.

In addition, the Secretary of Transportation, operating through the United States Coast Guard, must also certify the device from a safety standpoint. The Secretary of Transportation will issue regulations on this subject.

7. After the effective date of the regulations, it will be unlawful to pollute the navigable waters of the United States from vessels and to make any discharges from vessels into such waters, except in accordance with the regulations.

8. The bill establishes penalties for violations.

Detailed information about the problem to which H.R. 13923 and H.R. 16207 are directed is contained in the report, "Wastes from Watercraft," submitted to Congress last summer in compliance with Section 17 of the Federal Water Pollution Control Act, as amended by the Clean Water Restoration Act of 1966.

The basis for computing waste loads from recreational watercraft used in the report has been challenged. We estimated that 1,340,000 recreational watercraft were equipped with sanitary facilities, a figure reached by averaging two closely related figures estimated from industry and Coast Guard data. We realize that the estimate is based on incomplete information. The report states, at page 50 of the Senate Document, that no statistical information is available on the number of recreational watercraft equipped with sanitary facilities, and that our derivation must be clearly labeled as an estimate of the pollution poten-

tial of such craft and used only as a guide to their gross pollution potential. Even if the figure 1,340,000 is too high, we must recognize that the waste load from recreational watercraft constitutes a significant problem.

OTHER PROVISIONS OF S. 2760 LAKE POLLUTION CONTROL AND CONTROL OF POLLUTION FROM ACID AND OTHER MINE DRAINAGE

In addition to its oil pollution control provisions, which I have discussed, S. 2760, as passed by the Senate, would give the Secretary of the Interior specific authority to make grants to or enter into contracts with public or private agencies and organizations and individuals to—

(1) Develop and demonstrate new or improved methods for the prevention, removal, and control of natural or manmade pollution in lakes, including undesirable nutrient and vegetation effects; and

(2) Carry out projects to demonstrate feasible and practical techniques of eliminating or controlling acid or other mine water pollution.

The bill would also authorize the Secretary, in cooperation with other Federal agencies, to enter into agreements with States to carry out projects to demonstrate the engineering and economic feasibility and practicality of various techniques for the elimination or control of acid or other water pollution from active or abandoned mines within all or part of a watershed or drainage area. Appropriate feasibility studies would be required, preference given to areas with greatest present or potential public value for public uses, and assurance required that the project area will not be affected adversely by mine pollution from nearby sources. An appropriation of \$15 million would be authorized for this purpose.

Lake eutrophication and acid and other mine water drainage are two significant pollution problems to which the Federal Water Pollution Control Administration is directing vigorous efforts. We would welcome the directives found in S. 2760 for accelerated activities in these areas. We are deeply concerned about the premature aging of the Nation's lakes, from the vast reaches of Lake Michigan and Lake Erie to the countless small lakes to which our people look for recreation and beauty. We are deeply concerned about the old and lingering problem of acid mine drainage. I would be glad to give the committee any information beyond that found in my March 8 letter on S. 2760 concerning these provisions of the bill, on the problems to which they are addressed, and on our present and projected activities for the control of these difficult water pollution problems.

CONCLUSION

The President, in his recent Message to Congress, "To Renew a Nation," set forth a priority agenda for action to meet the dangers which threaten our environment. Key items on that agenda are the subjects of legislation before you today—the financing of community waste treatment plants to prosecute the war on water pollution with conviction, and the protection of waters, beaches, and coasts against the devastation of oil spillage and other hazardous substances. I urge this committee, which acted for clean water well before the national awakening to the threat of pollution, to act again, at this session of Congress, to protect the Nation's waters from the ravages of pollution.

Mr. Chairman, I am submitting for the record a discussion of the role of the Department of the Interior and more particularly the Federal Water Pollution Control Administration in the field of oil pollution control during the past year.

A DISCUSSION OF THE ROLE OF THE DEPARTMENT OF THE INTERIOR AND MORE PARTICULARLY THE FEDERAL WATER POLLUTION CONTROL ADMINISTRATION IN THE FIELD OF OIL POLLUTION CONTROL DURING THE PAST YEAR

WRITTEN STATEMENT BY SECRETARY UDALL

The Department of the Interior has major responsibilities for the protection of various natural resources and within the Department, the Federal Water Pollution Control Administration has a special responsibility for protecting our greatest natural resource—water—from pollution. This responsibility extends to all of the waters of the United States and is not limited by whether or not that

ater has the capability of being used by vessels. Protection of this natural source requires a special blending of talents, capabilities, and expertise, a combination which is only rarely found except in a water pollution control organization.

The Department of the Interior and the Federal Water Pollution Control Administration need the support of agencies such as the Coast Guard with the men, equipment, and logistic know how to implement reaction programs when a major oil spill occurs on our coasts, in our estuaries, our Great Lakes, and possibly the major navigable streams of this Nation. These capabilities complement the resources of the Department of the Interior to make an effective team. We view our role as the agency responsible for protection of our natural resources. As such, we have technical expertise capable of making the necessary judgments on courses of action to take to assure maximum protection of these vital water and water oriented resources. No pat answer is available which can be catalogued on how to react to a specific spill situation, although general courses of action can be developed.

There are some areas in which our authorities, as outlined in the proposed legislation, and the authorities of the U.S. Coast Guard may seem to overlap under certain conditions. Over the past several months, we have discussed this matter with the Department of Transportation and we are in agreement that the proposed legislation makes a realistic division of responsibility between the two Departments. Whenever a situation arises that crosses the responsibility interface, it will be bridged by cooperative effort; the FWPCA providing its technical expertise in the physical sciences related to water pollution control, and the Coast Guard providing its expertise in naval matters.

Spill pollution control from fixed sources for oil and other hazardous substances cannot be predicted finitely. Prevention through State control requirements, if uniformity across the Nation can be assumed, can go a long way towards minimizing their occurrence but cannot eliminate them. Today, the States generally lack clean-up authority for such spills and have little in the way of developed reaction capability. Since spills, even occurring on intrastate streams, can and do affect interstate waters (e.g., Clinch River in Virginia-Tennessee), there is a vital need to provide a reaction capability to stop these spills in their tracks. A well-conceived contingency plan incorporating immediate clean-up fund expenditure capability is a prime requirement. This clean-up authority must be available on a river basin basis and not be encumbered by diffuse jurisdictions if spill pollution control is to be effective. We view this gain as a complementary tool to the various State and Federal agency interests and authorities which is not available today but which is needed.

During the past twelve months, the Department of the Interior—largely through FWPCA—has been developing added capabilities for the control of oil spills and exerting substantial influence towards preventing and minimizing the effects of such spills. Let me cite only a few of those various activities.

This Department in conjunction with the Department of Transportation prepared the report, "Oil Pollution." This report is really a landmark document as its preparation necessitates some deep and searching reappraisals by both departments and brought forth actions toward the control of the problem.

We have prepared preliminary contingency plans for coping with spills of oil and other hazardous substances in each of our nine FWPCA regions. In preparing these plans, we have conferred with the Coast Guard, the Corps of Engineers, the States, industries and others; considered oil spill potentials from pipelines, tank farms and other sources as well as from vessels and related shore facilities; considered the spill potentials of other hazardous materials; and made a survey of diked waste storage from the standpoint of spill pollution potentials. These plans are not complete today, and I hope we will never consider them to be complete for to be effective they must be living documents, ever changing and improving to meet today's and tomorrow's needs and conditions.

We have prepared a prototype contingency plan using the Potomac River as its example. This plan will, of course, have value in protecting the Potomac but will be principally used to ensure that the FWPCA plans in each Region and basin meet certain minimums of excellence and utility.

Even these preliminary contingency plans have been effective in guiding our efforts in many spill pollution incidents. The most publicized recent oil spill is, of course, the S/T *Ocean Eagle*. In that incident, the FWPCA was in contact with the situation within two or so hours of its occurrence. Our field chief flew to Puerto Rico on the same flight with Coast Guard specialists from Washington.

Within twelve hours of the accident, we had a functioning team at the scene and were coming to grips with the problem. Our activities included:

Assisted in the organization of agencies; Federal, Commonwealth, and otherwise, in developing and coordinating a plan of action.

Particularly directed advice to the Puerto Rico Department of Public Works (assigned as clean-up agency by the Commonwealth) in the manner in which clean-up might be accomplished.

Endorsed Commonwealth request for release of U. S. Navy equipment and personnel to attempt removal of bow section to sea.

At the outset outlined disadvantages involved in the use of detergents and emulsifiers in the briefings with the other agencies.

Assisted in locating difficult-to-obtain equipment needed for treatment and removal of spilled oil, e.g., diaphragm pumps and adsorbent materials.

Performed tests relative to the feasibility of using sorbent materials for oil removal.

Initiated and cooperated in the evaluation of actual and potential damage to aquatic life from both the oil alone and from the various schemes considered for oil pollution abatement.

Assisted in dissemination of the information to the news media relative to status of oil removal.

One area of particular note was our advice relative to the massive use of detergents. We recommended against such massive use because of damage to aquatic life, the cost, and damage to beaches. The cost of detergents to disperse 1,000,000 gallons of crude oil would approach \$1 million plus the cost of application; detergent oil would cause the beaches to become "quick" and more subject to rapid erosion; and massive dousing of San Juan Harbor with oil and detergent would have killed virtually all aquatic life including an estimated 2,000,000 lbs. of fish. Our recommendations were reflected in the actions of the Commonwealth government which evolved a policy of "no soap" on the shore and harbor areas.

Another spill of serious note was the railroad accident at Dunreith, Indiana, January 1, 1968, which spilled a cyanide compound into a tributary of the Big Blue River. Engineers, chemists, and laboratory and field equipment were rushed to Indiana from our Ohio Basin installations to provide technical assistance in neutralizing the poison to safeguard downstream water supplies. Prompt action by the State of Indiana assisted by our Ohio Basin Regional averted a major disaster. No persons died or became ill from this pollutional spill; the only major casualties being some livestock.

Recently, our contingency plans and technical expertise have played a role in other spill incidents, including:

Pipeline break in James River, Virginia.

Pipeline break in Bayou Boeuf, Louisiana.

Sunken barge in Columbia River, Washington.

Sunken tanker, *R. C. Stoner*, Wake Island.

Disabled tanker, *Pegasus*, off East Coast.

On scene pollution control expert during removal of grounded tankers *Wappelo* and *Verena*, Sandy Hook, New Jersey.

Permanent assignment of aquatic biologist to Anchorage, Alaska to monitor oil pollution from off-shore drilling, oil loading, and transportation.

Further, within the Department of the Interior, the Federal Water Pollution Control Administration has called on and received expert assistance from such agencies as the Bureau of Sport Fisheries and Wildlife and the Bureau of Commercial Fisheries in several of these spill situations. Technical expertise and competence with coverage throughout the Nation's watersheds give the Department of the Interior the necessary tools to make the judgments necessary to protect our water resources and to complement the excellent air and sea capabilities of the Coast Guard for surveillance and marine reaction.

Secretary UDALL. I know the committee members will have questions, and we have all the experts at the table here. I hope we can be responsive to most of your questions.

Mr. BLATNIK. You may read part of it or you can summarize it as will, Mr. Secretary.

Secretary UDALL. First, Mr. Chairman, I would like to commend the decision of this committee to have one hearing and consider all of the pending water pollution bills.

Without doubt, in my judgment the legislation you are considering here today is as vital as any conservation legislation pending before this Congress. And I am very hopeful that we can get legislation before the Congress adjourns in the very vital areas of full funding for water pollution grants to meet the requirements of the 1966 act as well as action to give us the remedies and the tools we need to combat air pollution.

You have before you this morning clean water legislation proposed by the administration—namely the Water Quality Improvement Act of 1968—the Oil and Hazardous Substance Pollution Control Act of 1968, and legislation to control pollution from vessels within navigable waters. We urge enactment of these bills.

Additionally, we urge the enactment of S. 2760, already passed by the Senate, which deals with important aspects of the oil pollution problem, as well as with lake eutrophication and acids and other mine water pollution.

THE WATER QUALITY IMPROVEMENT ACT OF 1968

It is the Water Quality Improvement Act of 1968 that I would like to discuss first, Mr. Chairman. I would say that no conservation measure is more important. I think this legislation holds the key to shifting to high gear the water pollution control program—a level that we are now ready to achieve after 2 years of very hard work to establish our water quality standards. We are at the point now where if we can get the right action tempo at the local level by the cities, with the States and the Federal Government doing their part, then I think we can see the fur really fly in terms of water pollution action.

The Water Quality Act of 1965, of course, calls for the establishment of enforceable State water standards on all interstate and coastal waters. We have approved, I think, 29 or 30 of the State standards. The rest will be approved soon. I would say we are making very good headway with regard to the water quality standards.

In these standards are included implementation plans which call for the construction of needed waste treatment works on a timely basis.

Indeed, water quality standards submitted by a State is a schedule, an action timetable to get the cleanup program down. But of course all of these municipal treatment works cost money, large sums of money.

Our Interior Department report, which we call "The Cost of Clean Water" submitted to Congress in January, states that the "cost of constructing municipal waste treatment plants and interceptor sewers is estimated at \$8 billion, exclusive of land and associated costs" over the next 5 years. We have some indications that these initial estimates may be conservative. Whatever these costs finally turn out to be, the fact remains that these facilities will be needed or communities will not meet the schedules of the water quality standards and will face State and Federal enforcement actions.

One can readily see that to implement the water quality standard program on the basis of the schedules contained in the State standards which have been approved, there is an urgent need to provide adequate funds to finance the municipal construction phase of the standards program. The Water Quality Improvement Act of 1968 is the cornerstone of this program.

In enacting the Clean Water Restoration Act of 1966, Congress unanimously authorized \$3.4 billion for grants for municipal wastewater treatment plants for fiscal years 1968-71. The sum of \$203 million was appropriated for this fiscal year, the fiscal year we are in right now compared with an authorization of \$450 million.

In other words, we fell substantially short.

The President's budget for the next fiscal year contains \$225 million, compared to \$700 million which this committee authorized in the 1966 legislation.

We were confronted, Mr. Chairman, with this as a major problem last year. Many of the Governors, many of the mayors are saying, and quite frankly I cannot blame them, that, Well, we are working on water quality standards, we are getting ready to go, but the Federal Government isn't getting its money on the line. And this loomed up as a major roadblock to action.

I will give you an example. We had, I think, one of our most highly successful enforcement conferences 2 months ago on Lake Michigan. The four States that share Lake Michigan as a resource all came in. They were all cooperative. Most of the Governors spoke up, and the only main complaint at us was that, Where is the Federal Government's money to meet the schedules that were set out in the 1966 act?

Now, we attacked this as our main problem in this area. Last year we studied this problem all fall with the Bureau of the Budget people with the Department of the Treasury, and the legislation that you have pending before you today is the result of our effort to devise a budget with all the severe budgetary stringencies that we have, to get the action level moved up to that contemplated by the Congress in the 1966 act.

Of course we were confronted with the fact that because of budgetary stringencies we could not get the additional funds that would be required for cash grants, and this program, the Federal water pollution control program, has always been a program where the Federal Government put cash on the line for its share of a municipal wastewater treatment plant.

Of course the one obvious method that we could use is the same method that some of the States are using—in fact the localities and the States have both gone to the bonding approach in terms of building this kind of public works. So we naturally looked at several alternatives with regard to having the Federal Government put its full faith and credit back of the municipal bonds for us to sign up firm and binding contracts that will enable them to get a lower interest rate on bonds, and for us then to pay the interest and principal as it comes due each year, whether this is 20 years, 25 years, or 30 years. We would sign up firm contracts. And this is the way we could get the Federal Government's commitment on the line and get these projects moving.

So let me discuss specifically the provisions of this bill, having outlined the background.

Mr. BLATNIK. Mr Secretary, I am sorry. This is important. This is now specifically outlining and stating the points of this new financing, bonding?

Secretary UDALL. That is right. It is what we have called the full-financing approach to enable us to meet the full commitments envisioned by this committee in the 1966 act.

The first thing the bill would do is authorize long-term contracts—up to 30 years—with States and local public bodies. These contracts could be pledged by the States or local public bodies as security for bonds issued by them to cover the cost of the treatment plants, including the Federal share.

Under the contracts the Federal Government would pay the principal and interest on that portion of the bonds that represents the normal Federal grant share under the present act.

As you will recall under the 1966 act, this can be 30 percent, 40 percent, 50 percent, or in some instances 55 percent. Whatever that Federal percentage is, it is determined we would pay our share of these bonds and retire them as they came due.

The contracts would also provide a Federal guarantee of the non-Federal share and the payment of an interest subsidy to reduce the net effective interest rate to States and localities to a rate reasonably comparable to rates on tax-exempt municipal bonds.

4. The bill provides that the interest on bonds issued to construct these plants shall not be exempt from Federal income taxation.

Let me emphasize this nonexempt tax feature is a major element of this very important legislation. I think you will see why. It is, however, not intended as an opening wedge precedent to eliminating the tax exemption for municipal bonds—this does not represent a decision by the administration that we are going to change the law with regard to tax-exempt bonds—but we have a very special situation here. And the provision that we have in this legislation is important for three reasons:

First, the bill provides for a Federal guarantee of the entire bond, even the local share, and for an annual Federal payment of principal and interest on part of them. It would not be good policy to apply this guarantee to tax-exempt bonds.

We believe that the Federal guarantee would have the effect of lowering the risk, equivalent to a triple-A bond rating for the communities concerned.

Second, without this provision, we are convinced that the proposal could add substantially to the volume of new issues of tax-exempt bonds by State and local public bodies. This would be particularly undesirable in view of the already large volume of municipal bond issues and the current high interest rates which States and localities are required to pay. Making the proposed new bonds taxable rather than tax-exempt would avoid adding to pressures on the municipal bond market and would thus result in significant savings in interest costs to States and localities on their borrowings for other urgent needs such as schools, roads, and other public facilities.

Third, the use of taxable rather than tax-exempt bonds would also be significantly cheaper for the Federal Government, even with the interest subsidy. The reason is that, as public and private studies have demonstrated, tax-exemption costs more to the Federal Government in

lost revenues than communities gain in lower interest costs. Therefore it is possible for the Federal Government to give communities an equivalent interest subsidy and still save money.

5. The contracts would be available where the waste treatment system, not the particular projects, serves 125,000 people or more or serves all or part of a standard metropolitan statistical area. In our cost study, we indicated that there is a pressing need to upgrade waste treatment facilities in our major metropolitan areas. These are the areas that have been largely left out of the earlier grant programs because of the limitations written into those laws.

The program, which is designed primarily to meet urban requirements, also would cover smaller communities which would form a part of, or are contiguous to, larger metropolitan areas. It is our hope that this legislation will encourage metropolitan or regional waste collection and treatment.

The bill would also require the establishment of a system of user charges which would be sufficient to amortize the local share, pay operation and maintenance costs, and establish a reasonable reserve to meet planned expansion needs.

7. The bill provides that not more than 10 percent of the funds available for contracts in any year could be obligated to any one State. Contract funds not obligated in 1 year carryover to the succeeding year and are added to the total contractual authority for that year.

We recognize that this is a departure from the allocation formula approach now in the act. But we believe that this change is important, if the Federal Government really means to meet its commitment to the highly urbanized areas of the country with the greatest water pollution control needs. We fully expect that the smaller communities of the Nation, which are not eligible under the contract approach, will use the direct grant method to finance construction.

8. In 1966, Congress added to the act a provision which was intended to encourage communities to proceed with the construction of treatment works without a Federal grant or only a partial one. We would approve the project and the community would, usually with State help, finance it. They could then seek reimbursement for the Federal share from allocations available for grants prior to July 1, 1971.

The State of New York, with their bond program, made a special case on this. And I think the committee wisely enacted that special provision into law.

The 1966 amendment made it very clear, however, that approval of the project could not be construed, at any time, as an obligation or commitment of the Federal Government to provide funds for the project. As of April 1, 1968, 379 funded or partially funded projects have been approved. These could receive a total Federal payment of about \$215 million when, and if, the money is available for such payment.

The Water Quality Improvement Act of 1968 is designed to replace the 1966 amendment after July 1, 1968, without affecting eligible projects already approved. We recognize that some States, like New York, have initiated a program with some reliance on this reimbursement provision. We believe, however, that these States will realize that the contract approach is a vast improvement because it gives the com-

munity more than a fond hope of payment. It gives them a commitment or obligation of the Federal Government, a flat contractual agreement. In our view this should be far more acceptable than the reimbursement feature now in the act.

CONTROL OF POLLUTION BY OIL AND OTHER HAZARDOUS SUBSTANCES AND POLLUTION FROM VESSELS AND SHORE INSTALLATIONS

In many respects the problems of vessel pollution, oil pollution, and spills of other hazardous substances are closely related. All may come from the same sources, may be intermittent in nature, may occur at almost any point in or near navigable waters, and may result in damages ranging from the almost invisible to the deadly or catastrophic. The *Torrey Canyon* disaster and the recent breakup of the *Ocean Eagle* in San Juan Harbor have increased public awareness of the problem.

Indeed I think I should report to the committee that it seems like almost a weekly event that I get a report from water pollution control people on some kind of oil spill or another. Some of them get in the press. There was one in the press, as the chairman noted, in Hawaii this morning. We had a bad one on the Columbia River 2 weeks ago. There are large and small spills. And of course the dramatic ones like the *Torrey Canyon* and the *Ocean Eagle* do show the tremendous damage and the tremendous problems that can be caused by these large major spills.

After the *Torrey Canyon* report, Mr. Chairman, the President directed that the Department of Interior and the Department of Transportation make a study of this whole problem. The report of that study suggested a number of legislative needs to strengthen Federal authority to prevent and control spills.

One, amendments to the Oil Pollution Act, 1924, to extend coverage to all spills whether or not they are grossly negligent or willful, to spills from all sources, and to spills within the contiguous zone, as well as within the territorial sea and navigable waters of the United States.

Two, legislation to require an oil discharger to pay all of the costs of removing the oil, incurred by the Secretary of the Interior.

Three, legislation to make the person who discharges or deposits hazardous substances other than oil into navigable waters or the contiguous zone responsible for removing the substance, and to empower the Secretary of the Interior to act if such person fails to act, and to recover the costs.

These were recommendations that we devised, the two departments working together, to provide the kind of quick remedies that we feel are going to be absolutely essential, if we are to be able to reduce the damage and produce countermeasures as needed.

OIL POLLUTION PROVISIONS OF S. 2760

S. 2760, passed by the Senate and now before this committee, would fulfill the report's recommendations relating to the control of oil pollution in the navigable waters of the United States. It would repeal the Oil Pollution Act, 1924, and incorporate its provisions, with

strengthening changes, into the Federal Water Pollution Control Act.

We think this is a very wise step to get all of our legislation together under one act. Most of these changes were recommended by the administration last June.

The Senate bill would:

1. Delete the requirement that a "discharge" be "grossly negligent or willful" before liability attaches.

2. Limit criminal penalties to cases in which the discharge was due to a willful act.

3. Apply civil penalties to all discharges except emergencies imperiling life or property, unavoidable accident, collision, or stranding, the last two to apply only to vessels.

4. Expand the act's coverage to shore installations.

5. Specifically include in its coverage Puerto Rico, the Virgin Islands, Guam, and American Samoa.

6. Require the owners of vessels and shore installations to remove discharged oil from navigable waters and adjoining shorelines or to pay the cleanup costs. Thus, the discharger has the responsibility to clean up oil under our direction. We only act where he fails to meet his responsibility. The Government can then recover its costs and, in the case of a vessel, the owner cannot limit his liability.

We realize that this cleanup provision is quite severe, but we believe there is a clear and present need for this authority as recently demonstrated in Puerto Rico. We hope that it will make those in charge of tankers and shore installations more conscious of their responsibility to the Nation to prevent damage to its natural resources. Those who control the oil should be responsible for bearing this cost, rather than the public in our judgment.

7. Authorize appropriations to a revolving fund to enable the Secretary to finance such cleanup measures.

We are working now so that in all of these different areas—and the Coast Guard has important responsibilities, the Corps of Engineers has important responsibilities, along with FWPCA—we have a contingency action plan, so that we can anticipate any kind of disaster and know where supplies of the chemicals or emulsifiers, or whatever we are going to use are located, and have an action plan ready to go in the event that a large or small disaster occurs.

In my letter of March 8, 1968, to this committee, I recommended certain amendments to this portion of S. 2760 in order to facilitate administration of these provisions. The primary purpose of the proposed amendments is to clarify certain provisions of the bill and to delineate more precisely the respective roles of the Department of the Interior and other Federal agencies. We believe quite strongly that the Coast Guard and other agencies must be given a big role in making the legislation work. And we are going to have to have some team work, and we would like legislation to spell that out.

THE OIL AND HAZARDOUS SUBSTANCE POLLUTION CONTROL ACT OF 1968

The oil pollution control portion of S. 2760 is a major step toward closing yet another chink in our pollution control armor. However, the bill does not reach certain aspects of the recommendations in the oil pollution report. The Oil and Hazardous Substance Pollution Con-

Control Act of 1968, before you as H.R. 15906 and identical bills, addresses itself to additional key areas not covered in S. 2760. S. 2760 and H.R. 15906 are complementary. They do not overlap, but, taken together, they extend our ability to control oil pollution to the contiguous zone, the 9-mile strip of ocean beyond our territorial waters, which was established by an international convention on September 10, 1964.

The bill would further provide for the cleanup of large or unusually hazardous discharges of pollutants other than oil. The Water Quality Act of 1965 authorizes the Secretary of the Interior to request the Attorney General to bring suit to secure abatement of pollution which reduces the quality of interstate waters below established water quality standards. However, the legal procedure necessarily delays abatement action for at least 6 months. Thus, the Federal Government now lacks authority to cope with large and unusually hazardous discharges of material, such as those which occurred recently on the Clinch River in Virginia and at Dunreith, Ind., as they occur and before they do great damage. Immediate action is important for containment, and for the control of spills of hazardous substances.

The cleanup authority is similar to that applicable to oil. It is not, however, applicable to all discharge of matter, but only to those of sufficient quantity to warrant a finding by the Secretary of the Interior that the discharge or threatened discharge presents an imminent and substantial hazard to the public health or welfare.

CONTROL OF POLLUTION FROM VESSELS

I then move on to legislation proposed for the control of pollution from vessels.

Vessels—watercraft of widely varying types—are included in the category of the migratory polluter. Sanitary wastes, litter, bilge pumpage, and polluted ballast discharges are among the kinds of pollutants emanating from these sources. Watercraft wastes are highly visible, offensive to the senses, and often have a pollution effect disproportionate to their quantity. H.R. 13923 and H.R. 16207 embody the legislative action which we believe is required to mount a comprehensive attack on vessel pollution.

I am going to skip over to the top of page 16, Mr. Chairman, to talk about the details of this legislation.

This bill would apply to foreign and domestic vessels, and to the navigable waters and the contiguous zone. The bill would direct the Secretary of the Interior to establish by regulation, standards for the control of sewage emitting from vessels.

The standards will be developed after an extensive investigation and research effort is carried out to examine the efficiency and effectiveness of various systems for the treatment of sewage from vessels, including a careful study of the costs of installing, operating, and maintaining such systems on various classes of vessels.

The standards will be as uniform as possible for various classes of vessels within similar circumstances.

The regulations will set reasonable compliance schedules.

The bill would direct the Secretary to prescribe regulations governing the discharge of ballast and bilge water into such waters from vessels engaged in commerce.

The bill directs the Secretary to issue regulations governing the discharge of litter, garbage, sludge, and other substances, other than oil and dredge spoil, from vessels whether such substance originate on the vessel or is transported by the vessel.

Before the Secretary issues any regulations he must consult with Defense and other interested Federal and State agencies and representatives of various interested industries.

The bill would authorize the Secretary to exempt certain classes of vessels.

Once the standards are issued, a program for certifying the adequacy of various devices will be initiated.

In addition, the Secretary of Transportation, operating through the U.S. Coast Guard, must also certify the device from a safety standpoint.

After the effective date of the regulations, it will be unlawful to pollute the navigable waters of the United States from vessels and to make any discharges from vessels into such waters, except in accordance with the regulations.

The bill establishes penalties for violations.

Detailed information about the problem to which H.R. 13923 and H.R. 16207 are directed is contained in the report, "Wastes from Watercraft," submitted to Congress in compliance with section 1' of the Federal Water Pollution Control Act, as amended by the Clean Water Restoration Act of 1966.

OTHER PROVISIONS OF S. 2760 LAKE POLLUTION CONTROL AND CONTROL OF POLLUTION FROM ACID AND OTHER MINE DRAINAGE

Moving to the bottom of page 18 to the other provisions, I am not going to read that, Mr. Chairman, but this does describe in detail the provisions of S. 2760 with regard to lake pollution control and control of pollution from acid and other mine drainage.

These are vital provisions.

I would simply like to say in conclusion that I know this is a large order facing this committee to tackle these major bills.

Yet, I think this Congress has a wonderful opportunity to finish the work that was done in 1965 and 1966 with the Water Quality Act and with the Clean Waters Restoration Act. And I think if you will give us these tools to work with, that we can say with some confidence that we can move forward aggressively, working with the local communities, working with the States, in a unique partnership to clean up the lakes and the rivers and to protect the water resources of this Nation.

I believe I have the people here, Mr. Chairman, who can answer or try to answer any questions that you have, and we are delighted to be here this morning.

Mr. BLATNIK. Thank you very much, Mr. Secretary. It is certainly a wide-ranging statement and certainly a statement that comes to grips with several important aspects of pollution, including financing which is a very troublesome problem.

Mr. Secretary, obviously, we will be able to ask some questions this morning, but obviously these different areas to which you have out

ined will require a great deal of study on our part, discussion, and I want the committee members to know that we will have more discussions within our own committee, perhaps in executive session and study groups, and have members of your staff available and members of the Bureau of the Budget. It is sort of a large meal to digest in one sitting.

But I think the presentation in broad strokes and delineating the areas for legislative action was necessary to open these hearings.

I will not go too much in the financing. I think that would be a controversial matter. Yet it does appeal to a lot of us and must have a lot of merit. Certainly I think we would all agree that there is a need to assist the municipalities with the financing.

Some alterations have to be made in your proposal to make it more acceptable as well as workable to the municipalities, and I am sure there will be no objection to that.

Many members of this committee on both sides are not distressed, but certainly disappointed that after we got the national attitude and support for water pollution abatement facilities really cranked up, following the water quality legislation of 1965 and 1966, we had sort of a slump and letdown. We feel that we sort of pulled a run—not intentionally—through circumstances beyond the control of those in the Congress and those in the executive.

The effect pulled the rug out of those States that we were trying to motivate and stimulate and activate to get them going.

Just a few questions, Mr. Secretary, for the time being.

WATER QUALITY STANDARDS

On your water quality standards, page 2, you say about 25 to 30 States have already been approved. Could you give us some idea about how long it will take for the rest of them to be approved?

Secretary UDALL. Well, we actually have approved 31. The others are in the process of negotiation. I think we anticipate at this point—there are perhaps two or three of the States where we are having some rather violent disagreements—but I think we can get agreements on most of them within the next several weeks, Mr. Chairman.

Some of these negotiations tend to string out, and I would rather not tie myself too tightly to a time schedule, because I think it is more important to get the right result than to simply decide that we are going to conclude it in a particular period of time. Much of this is technical. But I would say that I think we are laying down a very sound set of standards.

We are receiving fine cooperation from the States. And I think that certainly within the next few weeks that you will see most of the State's standards approved.

Mr. BLATNIK. The standards will have to be established then in effect before municipalities and the industries involved know precisely what is expected of them to proceed then to undertake whatever is necessary and required to maintain the standards that are agreed upon; is that not right?

Secretary UDALL. The standards, as the Congress contemplated in the 1965 act, lay the framework for the whole cleanup program. They are the absolute vital elements. We have not had to set a single set of

Federal standards; we do not want to unless we are pushed in a position where we absolutely have to. Once we get agreement on the standards they will be administered in the first instance by the State. They will be regarded as their own standards, and I think this is going to give us the right kind of action focus, because they will be pushing for the standards enforcement and for the action agreed upon just as much as we are.

NEW FINANCING METHOD—WASTE TREATMENT WORKS

Mr. BLATNIK. Mr. Hughes, on the Secretary's statement on page 4 under paragraph 1, last sentence, and this deals with the long-term contract up to 30 years with States and local public bodies:

These contracts could be initiated once a level of contractual authority is established in an Appropriation Act for fiscal year 1969. These contracts would be binding obligations of the United States.

Now the last sentence:

Once executed, appropriations to liquidate them would be automatic.

Could you make any comments on it? Does the Bureau of the Budget concur with it? I am not familiar with the financing aspect. Do you see any impossible complications or conflict of jurisdiction with the appropriations of the other House?

Mr. HUGHES. I do not believe so, Mr. Chairman. As the Secretary indicated, we have shared this committee's concern over our inability to finance as fully as we wish the authorizations which the Congress has provided for the control of water pollution. And we believe this contract technique is a means through which we can do a much more adequate job than we have done.

Briefly, the legislation provides for Appropriations Committee approval of the contracting process. In other words, it would approve the entering into of contracts in a specified amount, and once that approval had been extended under the terms of the bill, then the subsequent contracts would be binding and the 30-year payments that the legislation would authorize would be automatic.

Mr. BLATNIK. Has this fiscal arrangement or mechanism been used in any other Federal grant programs, such as hospitals, schools, airports?

Mr. HUGHES. Not in precisely this form, Mr. Chairman. It is a new approach basically. The contract authority has been used in other program areas, but in somewhat different context than this.

Mr. BLATNIK. Who authorizes the contract authority in those instances? Would it be the operating agency, like HEW for the case of education?

Mr. HUGHES. Yes.

Mr. BLATNIK. Department of Transportation would be for airports.

Mr. HUGHES. Once the contract authority had been extended by the Congress, the agency in charge would then utilize it to carry out the purposes of the authorizing act. The procedure would be the same here.

This bill, which obviously is under the jurisdiction of this committee, would provide the basic authorization, and then the individual yearly contract payments would be provided by appropriation action.

The appropriation action would commit the Government to an extended period of contract payments in accordance with the provisions of the statute.

Mr. BLATNIK. On the same page 4, under paragraph 3:

Under the contracts the Federal Government would pay the principal and interest on that portion of the bonds that represents the normal Federal grant share under the present act.

That is understandable, and I think reasonable.

Later on, if I could have an explanation of this proposal:

Contracts would also provide a Federal guarantee of the non-Federal share and the payment of an interest subsidy to reduce the net effective interest rate of States and localities to a rate reasonably comparable to rates on tax-exempt municipal bonds.

Contracts would also provide the Federal guarantee of the non-Federal share.

The question would be: Is that unusual or what is the justification for that guarantee?

Mr. HUGHES. This is a new sort of approach, Mr. Chairman. The concept basically is that the Federal Government in extending the Federal guarantee to the Federal share of the obligation extends a substantial benefit to the community and in effect supports the whole obligation. I think the committee is aware of our concern that the Secretary expressed over tax exemptions as a means of supporting—as a subsidy means, in effect, of supporting local obligations.

We recognize, however, that the withdrawal of tax exemption in his particular situation would cause the community to pay a somewhat higher rate than would be charged for the tax-exempt obligation. And the interest subsidy which is referred to in the last sentence would be in recognition of that somewhat higher rate and would be a Federal subsidy to lead the community into essentially the same position as it would have been had it borrowed on a tax-exempt basis.

I think it might be well, if you wish at this point, to talk a little about the tax-exempt problem; and briefly the situation is this: We feel that a number of factors make it wise in a program of as direct Federal concern that this one is to provide an alternative to normal local tax-exempt financing. There is a great deal of evidence of pressure on the tax-exempt bond market, pressure which has resulted in increased interest rates and the prospect of even further increases.

The taxable market is a much broader market. And it would take correspondingly heavier pressure. So that concern has caused us to suggest this guaranteed, Federal guaranteed approach rather than a tax-exempt approach.

Also, and of more direct concern to us and I believe to the committee, it is quite clear that tax exemption per se is a relatively inefficient subsidy means to carry out Federal objectives.

The tax exemption has two effects really. It provides somewhat lower interest rates to the community, but it also provides higher income than would be provided by a taxable security to the investor. The lower interest rates to the community are not—they are not proportionately lower in consideration of the cost in lost taxes to the Federal Government. As a consequence, this approach which we have outlined in this legislation, would achieve the same result with the

same borrowing cost to the local community at about 30 percent or an average less cost to the Federal Government.

Mr. BLATNIK. You have answered my question that I had on page 5 where the Secretary states:

It would not be good policy to apply this guarantee to tax-exempt bonds. And at the bottom of page 5, the statement:

The use of taxable rather than tax-exempt bonds would also be significantly cheaper for the Federal Government, even with the interest subsidy.

We will need obviously much more briefing and discussion and explanation on the financing aspects.

With the number of witnesses, I would like to sort of move along Mr. Jones.

SOLID WASTE: RELATED TO WATER POLLUTION

Mr. JONES. Mr. Chairman, just a brief question.

Mr. Secretary, during the development of our water resource program we have moved to satisfy the public requirements. We started off with flood control and navigation. And we added hydroelectric power. Then we proceeded to recognize the competitive need of better quality of water. We have recognized the importance of recreation.

All of those factors went into the great and enormous problem of dealing with our water resources in a prudent and wise manner.

However, we have done it to satisfy the immediate needs and have not in all instances made long-range plans. Now we are considering an acceleration of water quality protection for municipalities, political subdivisions. But it seems to me that there has been great neglect of dealing with solid waste disposal, which is an integral part of the municipal function, in dealing with the problem of waste disposal along with water pollution.

Do you not think it is time for the Federal Government and the Congress to consider this enormous problem in relationship to water pollution abatement?

Secretary UDALL. Congressman, I certainly say without question that is one of the major conservation problems that we are not at tackling head on at the present time. And I would certainly agree with you that we need to give it the attention that it deserves.

We as a rich society have enormous productivity. We produce an enormous amount of waste.

Mr. JONES. We have had numerous instances in the Great Lake area, particularly of disposal problems, that the larger municipalities are faced with in the Great Lakes area. We also recognize the part that solid waste disposal has played in the eutrophication in the lakes area.

It seems to me that it would be necessary for us to give thought to this connection; because if we are going out and say we are just going to deal with water abatement programs, then 5 years we are coming back and we are going to deal with solid waste disposal, and then we are going to have to have new moneys for that, then the price tag is certainly going up.

I think that we could at this time give attention to that question. Secretary UDALL. I certainly agree with you.

Mr. JONES. Thank you.

Mr. BLATNIK. Mr. Wright.

INADEQUATE FEDERAL SUPPORT FOR WASTE TREATMENT WORKS

Mr. WRIGHT. Mr. Secretary, you speak in your statement of an all-out assault on pollution and the need for further legislation.

I would like to say that I believe you as Secretary of the Interior have been more vitally interested and more accurately concerned than any of your predecessors in your office with this problem of pollution.

I want to congratulate you on your leadership and your great interest in this field.

However, I am not certain that the amounts of appropriations recommended by the administration for this year and for next year are using the tools that Congress already has given them in our Water Quality Act of 1966. I do not believe they amount to what can be called an all-out assault.

You mentioned on page 3 of your statement that the present fiscal year \$203 million is appropriated. I gather that that is about the amount that the administration requested, is it not?

Secretary UDALL. I think very close to it.

Mr. WRIGHT. And our act that we passed in 1966, we authorized \$450 million for the present fiscal year, so that you asked for about half of what we authorized to be expended in this all-out assault?

Secretary UDALL. That is correct. This is the shortfall that caused us to conclude that we had to come up with a new method of getting the Federal commitment on the line in order to get into full gear.

And I quite agree with you that we have not this fiscal year met the target. We have fallen short. That is the reason we have come in with the legislation.

BOND APPROACH

Mr. WRIGHT. For the coming fiscal year our act that we passed in 1966 authorized \$700 million, and this gradually—not so gradually—rather sharply escalated program that we set forth, we authorized \$700 million and the President's budget is asking for \$225 million, less than a third of the amount that we authorized.

You are suggesting a long-term bonding proposal. Incidentally, do you know the first person to recommend that approach to this committee, the financing of water pollution abatement?

Secretary UDALL. I do not recall.

Mr. WRIGHT. Nelson Rockefeller recommended it to us in 1965 and again in 1966.

That essentially as I understand it is what they have done in New York on the State pollution programs.

Secretary UDALL. Well, most States, Congressman, have used those—10 or 12 or is it now 14 States that make State grants—most of them have used the bond approach. And of course the local governments use the bond approach as well. The Federal Government is keying itself into the bond approach by this payment device, rather than our being the one level of government to put up cash—everybody else is using the bond approach in terms of financing this kind of public works project.

Mr. WRIGHT. That sounds fairly plausible, and I do not want to prejudice myself against it. I do have some reservations about the amount you propose.

In 1955 the President's Clay Commission under President Eisenhower recommended a long-term bonding approach essentially similar to this that you recommend today for financing of the Interstate highway program. This was rejected by Congress. We adopted instead a pay-as-we-go approach to build out of current revenues each year the amount of highway that could be built out of those revenues.

We created a special trust fund, as you are quite aware, and have followed the pay-as-we-go approach on the interstate highway program. I think it has been a significant success.

One of the reasons that we rejected the long-term bonding approach at this time was that our analysis indicated to us that for every dollar's worth of highway built, it ultimately would cost us \$1.55 when we paid the interest over the period of amortization.

Now, that was calculated on interest rates prevalent in 1955. I daresay it would be still higher today.

I wonder how this comports with our efforts to put the Government in a fiscally responsible position so as to improve our international dollar balance and respect for the dollar throughout the world?

The President's insistence—I think quite properly—that we do one of two things, or a combination of two things, either reduce appropriations or raise taxes to bring it into a current balance on a pay-as-we-go basis—I wonder how this long-term bonding proposal that you have offered today comports with that?

Secretary UDALL. Congressman, let me discuss this and then Director Hughes would like to comment on it.

You have put your finger on a basic policy question. And I say quite frankly, I think in terms of the situation we find ourselves in that going to the approach of the Federal Government paying its part of the bonds as they become due is under these circumstances very sound.

And I recall, because I came to Congress when you did, and this was one of the major pieces of legislation in 1955 and 1956, when we wrote the highway legislation. And there was a feeling in the Congress at that time that we could set up a special fund, and that we could pay for the highway program as we went along through that fund.

We have basically adopted over the years the same approach to water pollution. What happened in my view, however, is that in 1966 the Congress saw that its level of appropriations, which then was under \$200 million, was too small. We were only helping the small communities. Congress decided to make a commitment to put up at least 30 percent of the money for all communities in the country, to move to a very high level of activity.

In fiscal year 1970, the authorization will go to a billion dollars of Federal grants, then to \$1.25 billion under the act. Quite frankly under the current budgetary stringencies we do not have the cash.

Now, we have a provision in this legislation so that if there is an alteration in the budgetary picture, we could increase the cash amount. We can come in and pay off our portion of bonds if we want to, so we do have that provision in it. But from the standpoint of social or political philosophy, I think I can justify the bond approach; because after all, that is what the States and cities are doing in this field.

There is one thing about the water pollution control program. If we clean up our rivers and our lakes, everyone will benefit. And our children and theirs will benefit and maybe they should pay a little bit on this. Maybe they should share in the cost.

Under your highway program, you finish the Interstate Highway network, it is paid for, and the people that use it the next 20 years from now, they use it free. They do not have to pay anything. We aid for it.

I think you can argue this thing both ways.

So that I would say we would rather have the cash grant approach. We would rather pay as we go. However, since we do not have that kind of money available now, I think this is a good substitute. I would rather see the other, if I had my preference, but I think that you can justify it as a sound approach, because this is precisely the way the cities and the States are financing this type of public works project.

Mr. WRIGHT. In that connection, I wonder if you have explored with the Appropriations Committee or any of its members their attitude toward this kind of arrangement, as Mr. Hughes described it—

Secretary UDALL. Congressman, I explained this to both of my Appropriations Committees, the Public Works Appropriations Committees, earlier this year. And I went into great detail on it. I thought I made a very good record on it.

I will be candid with the committee. I know Congressman Davis of Wisconsin was one, and others, said they did not indicate necessarily that they were against it, but they said that they did not like the aspect that you were getting what they called an automatic commitment by the Federal Government which becomes one of those uncontrollable items with regard to budgets. And it does have that negative aspect to it. We might as well be honest about it.

Mr. WRIGHT. I suppose some of these fellows are inclined to call anything of this type that obligates us in the future without giving the appropriating process annual review, they are inclined to call it back-door financing. I wonder if they would apply that term to this approach?

Secretary UDALL. This would not be back-door financing. We have made it very plain to them. That is the reason that I brought the subject up with the committees. I told them this legislation was pending. We hoped it would be enacted. We thought it would get us on schedule; but that we would review the matter with them each year. We would bring our commitments to them. We would lay the whole thing out. And this would enable us to make them a party to the whole program, and this is what we envision.

You see, Congressman, just to give you some idea of the magnitudes here, we could move 2 fiscal years from now to \$1.25 billion in Federal commitments. And let us assume we still only had \$225 million in grants. In other words, this would be over a billion in Federal commitments for something in the beginning on the order of \$30 to \$35 million that we would pay the first year. In fact, next fiscal year there will be no Federal outlay whatsoever because the first payments do not come due for 1 year from the time we sign the first contract.

Mr. WRIGHT. Laying aside any possible legal aspects, I am certain that if the Congress were going to take this approach, it would have

to recognize that such obligations as were incurred would be somewhat obligatory and mandatory on future Congresses for appropriations for amounts to pay on national—to the sense that our national debts are obligatory—they are beyond our control. There is not any way that Congress can exercise 1 year of control over that amount other than by what legislation we might enact to influence interest rates.

There is to my mind a further question. This country continues to grow and I presume it will continue in the future to grow. I assume that our cities will continue to experience the burgeoning growth that they have had the last few years, perhaps accelerate. I anticipate that the needs may become even more demanding than they are today. What happens now if we obligate all this money that we think we can afford to pay off bonds for facilities that have been built in what we might call a crash program, and then we encounter greater demands in the future than we had anticipated and have not got any money left to help finance new construction?

Secretary UDALL. Well, let me discuss that question as candidly as I can with you, because the Congress 2 years ago, when you wrote the 1966 act, set the levels of Federal participation for a 5-year program. You were attempting at that time to forecast what the needs would be and we made the first cost study since then, which you have before you.

Here we are 2 years later, back reviewing the whole matter. We are in trouble, and we are trying to keep the program on schedule. I would anticipate that this is going to be the process that we will have to go through, and that 2 years, 3 years from now we will be back again trying to look at what the national needs are to see whether we are on schedule and so on.

But I think our view at this writing would be that, because of the fact that setting the water-quality standards has taken really a year longer than we thought it would, it was a bigger job than I think anyone else realized when we began it. Therefore, I think it would be our view that if we can move ahead on this schedule that is laid out, at least for the next 2 or 3 years, and scale up, moving up to \$700 million of Federal assistance, to a billion, to \$1.25 billion, that this is going to get a very vigorous program going.

It is going to really be moving almost from low gear into high gear in terms of community action if we move ahead.

Then we can come back and review it at that point to see whether we are meeting the national needs. I think we can meet them. And I think the program as we have it laid out is a pretty sound one as far as we know today.

Mr. WRIGHT. Mr. Secretary, I have some other questions. I do not want to usurp the time. I know some other members of the committee have some questions they want to ask. I assume that you or some of the people from your staff will be available to us throughout the remainder of our deliberations.

Let me just say that while I do have some quite serious reservations about this long-term bonding approach, I certainly do want to congratulate you for your continuing interest and imaginative approach for all the work that has gone into the approach.

Thank you.

Mr. BLATNIK. Mr. Cleveland.

MR. CLEVELAND. Mr. Chairman, I think the chairman has quite properly pointed out that this is something we are going to have to digest, and certainly we cannot digest it all at once.

I want to commend the Secretary because he has answered one of my first questions, as I listened to his testimony and read his presentation, and one of my first questions was to ask him if really what his all amounted to did not boil down to the fact that the Federal Government was going to take the bond route very much as the local community and States were now doing, particularly this is so in New Hampshire. And he has been very candid about that, and I think it is quite clear that although they are calling these things contracts, and it is a nice-sounding word, they are really talking about something which is, in essence, a bond.

RELATIONSHIP BETWEEN CONTRACT LEVEL AND TOTAL AUTHORIZATION

To help orient my thinking on this, Mr. Secretary, I would also like to find out how this legislation, if we approve it, meshes into what we have already done. For example, are the authorizations and appropriations that we have already enacted—you refer to them on page 3 of your statement—they would of course go along as they are going along. Is it contemplated that the interest payment or the payments under these contracts will come out of that authorization and appropriation?

Secretary UDALL. No. Let us assume that for the coming fiscal year we got the \$225 million appropriation. Then since the authorization for next fiscal year was \$700 million, we are \$475 million short.

The \$475 million, we would take up that slack with this Federal commitment.

MR. CLEVELAND. You would have to dip a little bit into the \$225 million in order to meet the commitments—

Secretary UDALL. Let us assume you pass this law and you make it effective for fiscal 1969, and there would be no payment due the first year. So we would not have to do that. We would anticipate, however, or we would hope at this time, that we could keep the grant money at roughly the \$200-million range. We may not be able to, and we will have to review that each year with the Bureau of the Budget. Whatever money that we had to put up to pay the interest and principal payments would be on top of the grant money.

MR. CLEVELAND. To continue this line of questioning, will this new theory or new approach of the contracts come in under the authorizations from this committee?

Secretary UDALL. That is correct. We are trying to make up the gap in your authorization in the 1966 act.

MR. CLEVELAND. So the authorizations that we have passed remain as an umbrella on this situation?

Secretary UDALL. They are the ceiling we are trying to reach.

MR. CLEVELAND. However, that is as Mr. Wright has pointed out not completely a ceiling or completely an umbrella, because that only represents annual payments of interest and principal, which would in effect permit you to spend a great deal more—in reality spend a great deal more than the authorization, correct?

Mr. HUGHES. Mr. Cleveland, if I could talk to that point. The statute says that the contracts entered into in value during the year that is the total contracts entered into during that year, cannot exceed the difference between the cash grant figure and the total authorization. The authorization figure in the legislation is an overall ceiling.

We could enter into contracts the annual payments for which would make up that difference.

Do I make myself clear?

Mr. CLEVELAND. If what you say, if I understand what you say then the authorization that this committee has passed remains in effect not only as to interest and principal payments, but as to total contractual—

Mr. HUGHES. That is correct. The combination of the cash grant.

Mr. CLEVELAND. Would you call my attention to where that is in the bill, please?

Secretary UDALL. Page 9.

Mr. HUGHES. I refer you, Mr. Cleveland, to page 9, section 3. I think perhaps the think to do is read the language from H.R. 15907.

For the purpose of making grants under subsection (b) of this section, there is authorized to be appropriated \$700 million for the fiscal year ending June 30, 1969; \$1 billion for the fiscal year ending June 30, 1970; and \$1.25 billion for the fiscal year ending June 30, 1971. For the purpose of liquidating contracts entered into under subsection (f) of this section, there is authorized to be appropriated such sums as may be necessary for those fiscal years and for each fiscal year thereafter. Sums appropriated pursuant to this subsection shall remain available until expended.

Mr. CLEVELAND. Are you sure that that language puts your total authorization under that ceiling of \$700 million? It does not read exactly that way.

Mr. HUGHES. It does not, Mr. Cleveland. I may be misinformed, but I thought it did.

I am sorry. I misinformed you. I thought the language was in the bill. It is rather in the accompanying documents. It is in the form of an expression of intent. And the intent would be to authorize contracts equivalent to the difference between the cash and the total authorization.

I am sorry for the misinformation.

Mr. CLEVELAND. In other words, as far as you people are concerned this can be amended in that respect, because that is your intention.

Mr. HUGHES. Our intention was to provide a total program level equivalent to the authorization each year.

Mr. CLEVELAND. The language that has been supplied to me is that the authorization will serve only as a guide to determine the principal sums available for determining the limitations in the appropriation act.

This is going to be one of the questions I am sure the committee will want to know.

Mr. HUGHES. That is quite right.

Mr. CLEVELAND. You must admit that if we were to enact this legislation, that under this legislation you could go into these contracts up to an amount of the annual payments to meet the authorization. That is a different kettle of fish than if you treat the whole amount of the contract over the 30-year period as part of the authorization.

Secretary UDALL. That would be a much different magnitude.

Mr. HUGHES. It would be a vastly expanded program.

Mr. CLEVELAND. In other words, that would be a real bond?

Secretary UDALL. That is right.

NOT BACKDOOR FINANCING

Mr. HUGHES. I think part of the point here gets back to Mr. Wright's point concerning the appropriation review and the effect of that on the legislation. He had raised the question as to whether this constituted backdoor financing in the sense that it is of concern to us as it is to the Appropriations Committee, and I think the answer is unqualifiedly it is not backdoor financing as would for instance a straight public debt authorization be.

Mr. CLEVELAND. Mr. Chairman, as Mr. Wright, I have other questions, but I recognize that there are other members of the committee with questions, and in conclusion I would like to say that, Mr. Secretary, as always when you appear before Congress, you give us something to think about. You have certainly given us something to think about today. And I am sure that many other committees, legislative committees in Congress, will be following our deliberations on this matter with interest; because although you were addressing yourself to the problem of clean water, which is a national problem, if I read the papers correctly, there are many other national problems of concern. The precedent we are setting here will be watched with more than ordinary interest.

Mr. BLATNIK. Thank you.

Mr. Edmondson.

Mr. EDMONDSON. First I would like to join my colleagues in congratulating the Secretary as another example of what I have heard referred to as "imagineering." And I think the gentleman who occupies the chair of Secretary of Interior right now is one of the ablest "imagineers" that we have in Government.

This is a very serious problem, regardless of what criticism may be directed against it, and I think it is a recognition that we are lagging in an area of vital importance to the country. We must find financing methods of some kind to close this gap to keep up the demands of this expanding economy of society.

CONTRACT PROPOSAL GEARED TO POPULOUS AREAS

Now, I profess to you quite frankly that I am a little bit disturbed about the fact that the new devices that are proposed would appear to be restricted pretty largely in their operation to the metropolitan or urban areas of the country. And I would like to ask either the Secretary or somebody else who is knowledgeable on the subject to tell us just how many areas in the country would be covered by the language in your contract—the description is under paragraph 5:

The contracts would be available where the waste treatment system, not the particular project, serves 125,000 people or more or serves all or part of a standard metropolitan statistical area—

As defined by the Bureau of the Budget.

I would like to know just how many areas there are in the country that fit that description and what percentage of the people in the United States are included in that?

Secretary UDALL. Mr. Moore tells me that there are 233 standard metropolitan statistical areas, and I do not know whether we can give you the percentage of population. We can certainly furnish it for the record.

Mr. EDMONDSON. Would you supply, for the record the number of people living in standard metropolitan statistical areas.

Secretary UDALL. Yes.

(The information referred to follows:)

April 1965 population estimates (1960 figures for the two SMSA's defined since the most recent compilation) indicate that approximately 124 million persons live in the 233 metropolitan statistical areas of the United States.

(See also, p. 610, May 2, 1968.)

Mr. EDMONDSON. Now, just a rough calculation in my own State I know that this 50,000 city level which I understand applies would probably take care of only 3 of the 6 congressional districts in the State of Oklahoma; I know that this population level which I understand applies would probably take care of only 3 of the 6 congressional districts in the State of Oklahoma. Over in the neighboring State of Arkansas, I think it would probably take care of 2 of the 4 congressional districts in the State of Arkansas if my knowledge of the population statistics in the State is accurate. I think you are going to find a lot of congressional districts in the country left out of this new device and its helpfulness if the Oklahoma-Arkansas situation is typical.

Secretary UDALL. Congressman, Mr. Moore wants to comment. Let me say, however, that the Senate committee, when they held our hearing 3 weeks ago, inquired into this subject. I am sure this is a matter the committee will want to go into. We felt we had a valid reason and a good cutoff point with regard to the 125,000 population cutoff that was used for the standard statistical area. But I think the committee has every right and reason to want to know why or what the reasons are for drawing a line in any particular place.

It is our anticipation of course that under the cash grant program which has traditionally been the program that the smaller communities have looked to, that most of them will get their money from that part of the program, and obviously if that is the case, the areas in which most of the people live and most of the waste treatment construction will take place, will be assisted under the new side of the program.

Mr. MOORE. Congressman, I just want to make the comment that the act, prior to 1966, had a limitation as to the dollar amount of an individual grant. This limitation ranged from \$250,000 prior to 1961 up to \$2.4 million after 1965 for a multimunicipal project. The dollar ceiling of necessity caused the initial years of the program to concentrate primarily in less populous areas, and not in areas where waste treatment facilities were of such cost that this limit would not make a major contribution to extremely large facilities.

There is in the present act, and the Secretary has mentioned this there is in the present act still the requirement that 50 percent of the first \$100 million appropriated in any year has to be utilized for con-

struction grants to smaller communities, that is those below 125,000 population. And so this feature of the existing statute is not changed with the contract authority. There would still be out of cash appropriations a fixed minimum sum allocated for construction grants to smaller communities.

Another feature that I think needs to be emphasized is the fact that the priority systems for making the construction grant allocations are initially established by the States and reviewed by the Department of Interior. So that there is some flexibility within the statute as it presently exists to assure that the needs of the smaller communities are met.

Mr. EDMONDSON. I appreciate those facts, and I appreciate the fact that our municipalities have been dealt with fairly under the present law; but I am concerned that as you estimate your authorization for appropriations going up from \$700 million in fiscal year 1969 to \$1.25 billion for fiscal year ending June 30, 1971, that there is no equivalent escalation of any kind for the amount reserved for your smaller communities. Although I think their needs are escalating also, as industries move into rural areas in a number of parts of the country, I think this need is going to be even greater. So I would like to have that matter particularly reviewed in this committee before we proceed to mark up this bill.

Mr. Chairman, I have other questions, but in the interest of letting other members have a piece of the time here this morning, I will reserve mine.

Mr. BLATNIK. Mr. Clausen.

Mr. CLAUSEN. I am pleased to again welcome the very distinguished Secretary of Interior. I will not belabor the point, but I, too, am inclined to share the same point of concern as expressed by the gentleman from Oklahoma. As you know, Mr. Secretary, I have run some research and we find ourselves with 70 percent of the people living on 1 percent of the land in this country. I think the experience with the Interstate Highway System, plus the primary and secondary highway program, has in effect built the great interstate highways; but it has left the smaller communities with an inability to keep pace with the highway improvement requirements.

I am hopeful that we could look at this particular situation as a means of possibly reflecting the flow of some of the population.

INCENTIVES TO INDUSTRY FOR WATER POLLUTION CONTROL

My question to you would be: What percentage of the overall pollution problem as you view it is in the so-called public sector? Now, this is the local, State, and Federal municipalities, and the sewage treatment plants, and what percentage would be categorized as being in the private sector—I mean industry?

Secretary UDALL. Let my experts give me a figure. While they are getting it ready, let me say one thing. The sort of modern up-to-the-minute approach to waste treatment construction that we favor, because we think this is the cheapest and most efficient way, is to have large regional units built wherever possible, where your industrial wastes are mingled with the other wastes of the community. This is what we favor, because we think it will hold costs down. It will give us higher efficiencies, and this is the thing that we have urged.

This means that if you do it that way, the local government, because it will build and run the facility, usually has its own contractual arrangements with industry with regard to treating the particular type of effluent that industry may have.

The calculation on our study that we did last year is, we came up with \$8 billion for the public sector, with a range of from \$2.6 to \$4.6 billion in the industrial sector. This is in the initial phase.

This would seem to be better than 2 to 1 in terms of the total picture.

Mr. CLAUSEN. That is actually in the public sector?

Secretary UDALL. Yes. The \$8 billion is in the public sector; the \$2.6 to \$4.6 billion in the private sector.

Mr. CLAUSEN. As you know, I was the author of an amendment during previous water quality legislation that would study ways and means of permitting the private sector, in particular, to have for instance tax credits or something like this to encourage them to do the job. Could you respond on the type of progress we are making and what your thoughts are on this?

Secretary UDALL. Congressman, there was a great deal of discussion as I recall 2 years ago when we came before you on the 1966 act with regard to industry and the various tax credit proposals.

I think we have seen a rather significant development in this field in the last 2 years. I do not see any loud demand by industry for incentives. I think this is to the credit of industry, and I want to say why I think this has happened. Because the 1965 act and the 1966 act put industry nationwide on the same footing. In other words, if it is a steel company, pulp mill or whatever it is, and they are in Minnesota, California, or Arkansas, they are roughly going to have the same water quality standards. Therefore, industry realized that since the Nation now had a new goal of cleaning up its waters, and they were going to have to put in modern waste treatment works, that if they invested and other similar companies in other parts of the country were having to make similar investments, added to the cost of the product, then the normal economics were not disrupted.

I do not want to misrepresent the situation that there are not industries that still are not advocating tax incentives. But I think they realized that this really was putting a new burden on them, and that they said, "We are going to do business differently." When it was apparent, too, that there was difficulty in Congress in developing the right kind of tax incentives, this meant that industry would not drag their feet. I think industry has done quite well in the last year or two, and I think most of them are moving right ahead with your projects and programs, and I tend to want to give them a pat on the back, because I think in the main industry has faced their responsibility and done quite well. I noticed about a year ago that Fortune magazine for much of the same reasons I have recited here came out against any tax incentives for pollution control on the basis that industry should do it as part of the cost of doing business and pass it on to the consumer.

Mr. CLAUSEN. I have other questions, but I will yield.

Mr. BLATNIK. Mr. Howard.

OIL POLLUTION PROBLEM

Mr. HOWARD. Mr. Secretary, I certainly wish to thank you for coming this morning. Although many of the questions had to do with bonding and establishing who is responsible for oil pollution spillage, I believe that we have another problem that has come to the floor recently with the experience that we had in San Juan with the *Ocean Eagle*. And that is: How we will combat an oil pollution disaster, breaking up of an oil tanker? We had something more than an inkling of the problem with the *Torrey Canyon* off the coast of Cornwall last year. There it was more of an established fact of merely fighting the oil. The ship was a complete wreck, just about all of the oil was out. It was coming toward shore and they had to combat it.

However, with the *Ocean Eagle*, March 5, at the entrance to the Port of San Juan, there was some other factors involved. Certainly it was over a million gallons of oil that had come from the ship, but we also had the ship itself with the stern resting on the edge of the channel just inside the harbor and the bow just outside the entrance of the harbor, where the water is a bit more rough. Something had to be done not only with the ship, but also with the oil that was coming out.

One big question was: Who is in charge? And who has the authority, and who has the responsibility for what must be done in the coming days, and what interests are involved?

With the *Ocean Eagle* itself certainly the Commonwealth of Puerto Rico was involved. Being a hazard to the Port of San Juan, we had the Coast Guard vitally involved; with the possibility of something happening to the stern section of the ship and the channel being completely blocked, we had the Navy involved. Also involved certainly was the company that owned the ship, the *Ocean Eagle*; and also the oil company that owned the cargo that was involved. The insurance company that insured both, which might very well be a foreign company, was involved in it, as was the Federal Government with the Department of the Interior concerned with water pollution control, and this ship was flying the Liberian flag, and we had a foreign nation involved.

I think from what I have seen and discussed with people who work with the operation of the *Ocean Eagle*, everyone concerned was very fortunate that the captain of the Port of San Juan, Capt. Warner K. Thompson, Jr., U.S. Coast Guard, was there. Because he did immediately fill this vacuum of who is in charge here, and made decisions which turned out to be very correct decisions.

In almost every instance he did have the complete cooperation of all these other areas that I have just mentioned who are involved with him. There was a responsibility that he had of the safety of the Port of San Juan. Under that he made many decisions for the good of the port, in attempting to keep it open or have it reopened as soon as possible.

But very often he may have been treading on thin ice in making decisions that he made. It is fortunate that he did make them, because he was extremely able in this. But I think it pointed out the problem and the great necessity of having formulated a method of operation.

We are continually having this problem. The *Torrey Canyon* was

one example and the *Ocean Eagle* was another. There was one in this morning's paper showing the oil slick in Hawaii. The ships are getting much larger. One that has just been completed or is being completed is a ship of 500,000 tons, one tank of which holds as much oil as the entire *Ocean Eagle*, 6 million gallons. We are approaching a 100-foot draft in our ships. Around the world they are establishing manmade islands off the coasts. I believe there is one off the coast of Kuwait, and there is talk of one off the east coast of the United States, where these huge floating "Rayburn Buildings" will stop at the island, transport its crude oil, and have it refined there and put in smaller ships that will go into the harbors.

I know, representing probably the finest beach area in the country off the coast of New Jersey, I would be a bit hesitant to see one of these islands off my coast with all the damage that we could have. In Puerto Rico in the operation there was one difficulty where they were spraying this emulsifier by helicopter, which is apparently much more efficient than what we were doing in England with the *Torrey Canyon*, dumping the barrels over and then churning them up with fire hoses and even with the small boats in San Juan. But the Commonwealth of Puerto Rico, after a day and a half, stated they did not want this to occur any more, and it had to be stopped. So this may have been a better method of operation, but there was a local conflict there.

In your statement, No. 6 on page 10, you "require the owners of vessels and shore installations to remove discharged oil from navigable waters and adjoining shorelines or to pay the cleanup costs," and so forth.

There was a danger in San Juan while removing the oil on board, the stern could have fallen overboard and completely blocked the Port of San Juan and would have had Navy ships inside if it had not been done by a competent company. It is said there are only about five major marine salvage companies around the world. And it should be in the interest of those involved that we get the best and most competent operators in this case.

Now, we had to wait until the insurance company and the owner of the ship and the Gulf Oil Co. abandoned the cargo and the ship to the Corps of Engineers before they could officially act. The Commonwealth of Puerto Rico had to agree that they would take a responsibility of signing a contract with the major salvage company in hopes that a few days later the Corps of Engineers would relieve them of that responsibility, which did happen.

I could very well see a local authority not wanting to put themselves in that position. I want to thank you for the time of getting this statement in the record as well as what we have been talking about. I certainly hope this committee and the agency involved will try and establish a method of procedure in combating these, so that there will be no gaps in the responsibility and authority and no overlaps in responsibility and authority, and we will have a method of combating what is increasingly becoming a more costly and more dangerous threat to the beaches around the United States and around the world.

I do not think we should have to depend upon the availability of a person as competent as Captain Thompson was in this instance in San Juan.

I hope that before we are finished, we will do whatever we have to legislatively and administratively so that we will have a clearer cut method available to combat disaster such as this.

Thank you.

Secretary UDALL. Congressman, I hope you will look at the details of the legislation we have proposed, because we have tried to encompass the existence that the British had with the *Torrey Canyon*. We had this top-level report that was done by the Department of Transportation and my own Department last summer. I put some of my very best people on it, and I know Secretary Boyd did, too. I think we have a plan, and a workable one, and a solution.

I think we also must recognize that in the type of high-energy economy that we have, these big tankers are going to be moving around, and I think we have got to make it plain to the transportation industry that a very high degree of care must be taken, because you can do enormous damage to other resources. You could literally wreck the economy of some of your seacoast regions, as happened in England.

I think this is a very serious responsibility that this committee undertakes in writing legislation of this kind.

After all, the type of accident that occurred can be insured against, and I think the most important thing above all else, as far as I am concerned, is that once we establish the fact that we are going to expect people to use great care, if they are transporting a substance of this kind, is to have an action plan so that we can minimize or offset the damage.

I noticed Jersey Standard announced just a few days ago what they call a dispersant. We have not had a chance to analyze this—I now they have a very fine research organization—to know now effective it will be. I am not commenting on its effectiveness. I am sure the chemists can come up with an answer, so that we can be ready to take care of these accidents that occur despite all the care to prevent them. I think it is very important that whoever makes the mistakes ought to pay the cost of the cleanup, rather than have the taxpayers do it.

Mr. HOWARD. Thank you.

Mr. BLATNIK. Mr. McCarthy.

Mr. MCCARTHY. Thank you, Mr. Chairman.

Mr. Secretary, I want to add my compliments for the plans that you have outlined here for dealing with major problems such as oil pollution from shore and ship installations and supplying drainage, and so forth.

However, I would like to ask you about the second paragraph on page 8.

CUTOFF OF PREFINANCING PROVISION

As you know, I am from Buffalo, N.Y. About 4 years ago, we in the Buffalo area became extremely concerned and enthusiastically so about the condition of Lake Erie. At about that time the Secretary of Health, Education, and Welfare convened an enforcement conference to which the States bordering Lake Erie came, including my own, of New York. At first they were a little reluctant, but when they came. Out of that grew a determination to tackle this problem. New York went ahead with its \$2 billion pure waters pro-

gram. The Governor came down here and asked us to include in the legislation a prefinancing provision which I supported. The committee went ahead and we put it in. Now you are proposing to knock it out, starting July 1. And in that year, beginning July 1, New York, which is moving ahead, expects to approve about \$534 million in projects, all of which they expect would be eligible for the Federal share of about 55 percent, or \$294 million.

Well, now, of course, we know that New York isn't going to get that much, because we don't have that much available nationally. But with the prefinancing assurance in there, they have at least assurance of eventually being paid that amount.

Now, it seems to me you are proposing to change the rules in the middle of the game. New York has tailored its whole approach to this. Now you come in any say, all right, you are started, but we are changing the rules. What I wonder is how you estimate that this is going to affect States like New York, and secondly, what would be wrong in leaving the prefinancing provision in, and offering States an option of either going the bonding approach or going ahead with the assurance that eventually they would be reimbursed in cash.

Secretary UDALL. Congressman, I certainly know your keen interest in water pollution control, that with the action that your State is taking, this is something you will want to scrutinize very carefully. Governor Rockefeller himself did come down and testify before the Senate committee. In fact, I had a brief conversation with him about this subject. It is our feeling, we may be wrong, that the new approach would be superior to the provision that you and others got written into the 1966 act. We certainly want to encourage States to take vigorous action, the way the State of New York has. They have had their own problems in tooling up, and they are getting about ready to go, as you have indicated.

And I think it is important that we key the two programs in a way that is equitable in terms of the total national program and also fits the other guidelines that we have laid down here. So I know you will want to study this very carefully. I am sure the staff people will try to enlighten you as to both the advantages or disadvantages, if there are any, of the new approach as against the prefinancing provision of the 1966 act.

Mr. McCARTHY. What would you say about having an option? I understand they are all geared up with prefinancing assurance. What would be wrong with leaving that in and also providing the bonding approach for those who want to go that route?

Secretary UDALL. Well, I would not want to comment categorically. That might be a positive approach, Congressman. We will certainly look at that with you. I did not have a chance to read Governor Rockefeller's testimony. I do not know what he presented. But I think we ought to consider any alternatives that are reasonable or this.

Mr. McCARTHY. I do have the Governor's statement before the Senate. He will be here tomorrow. But in a statement before the Senate, he strenuously objects to the removal of the prefinancing provision. And after reading his testimony and reading the bill and your testimony, it seems to me that perhaps a reasonable approach would

be to offer an option. And as you say, this might be considered. I think you cannot resolve it today, obviously, but I hope that as the committee continues its deliberations with your able top lieutenants here, that maybe we can work something out on this.

Secretary UDALL. Fine.

Thank you.

Mr. HUGHES. Mr. Chairman, just a brief comment, if I might.

Mr. BLATNIK. Mr. Hughes.

Mr. HUGHES. One of the advantages of the approach that is reflected in the administration proposal, we believe, as distinguished from the prefinancing, is that it deals more equitably, perhaps more on a priority basis, in that it does not so much limit the capacity to go ahead to those States which on one basis or another can provide their own financial base for proceeding. It does give more substantial assistance, we think, to other States and to communities which otherwise might be left out. We certainly would try and keep an open mind on this point, but one of the things that we would need to watch is the impact of a combined prefinancing and contract financing approach on the communities in the States with lesser capacity, lesser financial capacity.

Mr. McCARTHY. Of course, the other side of the coin that you have just turned up is that those States who are ready to move and have the financial wherewithal should not be penalized simply because they are ready to move ahead and are in a financial position to do it. If we pull a rug out from under them, by pulling this out, it is going to be a step backward, rather than a step forward for those big States like New York, who have moved ahead.

Mr. HUGHES. Certainly they should not be penalized. The contract financing approach would put them on the same basis as other States and their inherent advantage and their capacity to lock up future allocations of Federal funds would be somewhat more limited.

Mr. McCARTHY. Thank you, Mr. Chairman.

Mr. BLATNIK. Mr. Cramer.

Mr. CRAMER. I will yield to the gentleman from Nebraska.

Mr. DENNEY. Mr. Secretary, I have one or two questions that concern me.

DEBT FINANCING PROPOSAL APPEARS TO DIMINISH STATE AND LOCAL RESPONSIBILITY

Would you comment on whether or not we are considering landmark legislation with reference to Federal water pollution control, keeping in mind the original declaration of Congress on the first act providing for primarily State responsibility. In these bills we are talking about approval of water standard, we are talking about secondary control, and legalistic methods of handling the discharge. We are talking about guaranteeing Federal bonds by the Federal Government, the Secretary having discretion to determine whether or not the bonds are feasible.

We are talking about a toilet tax—or a use tax—and we are talking about all different approaches to this thing. So it looks to me like it is more and more of a thrust for the Federal Government to

step in and say the States have not done it, and now we are going to take over. Would you have any comment on this statement?

Secretary UDALL. Congressman, I think I can make a pretty clear-cut statement on that subject, because I think both the Water Quality Act of 1965, if you study it carefully, as well as the 1966 Act, both give the states and local communities, I would say, the lead role in many aspects of water pollution clean-up. Now, obviously, if the Federal Government is going to guarantee the bonds in order to get a lower bond rate, it has got to be concerned about some of the details. Maybe we have too many details written into the act, but I would think, for example, with respect to this user fee provision, that we do have a legitimate concern, if we are going to guarantee the bonds of the community, that they have what we would consider a modern financing method of paying off their own bonding obligations, and this is the reason that we feel that the cities that qualify under this program ought to have what the best cities already have, namely, a sound user fee system, so that the users are paying for the service they receive.

Mr. DENNEY. What are we going to do about a little community of 500 people in discharging sewage into a stream that reaches interstate streams, which cannot have enough users to pay this off?

Secretary UDALL. Well, I think the answer for the small community is that they would not qualify in any event. Under this bond approach that we are presenting here today, it is only the larger communities that would qualify; the smaller community would come in under—

Mr. DENNEY. Under direct grant?

Secretary UDALL. That is right.

Mr. DENNEY. I believe that is all.

(Mr. Howard assumed the chair.)

Mr. HOWARD. Mr. Cramer.

Mr. CRAMER. Mr. Secretary, I am sorry I was not able to be here during your entire testimony. My plane was a little late. And I, too, appreciate the effort which you are putting forward.

We have, as you know, operated on largely a nonpartisan basis relating to water pollution matters. The last few bills with their conference reports have passed unanimously, as I remember, by the House. This was done, however, only after exhaustive study of the proposals made and rather substantial changes were made, both on this side and the Senate side as well as in conference.

So my question will be directed to an effort to get a clear picture of what we are getting involved in—what this bill will actually do—in the brief time that I have.

OIL POLLUTION CLEANUP IN CASE OF UNKNOWN CULPRIT

No. 1, I see in the morning paper, April 23, that there were oil slicks found off Hawaii's famous Waikiki Beach:

Crude oil from a still undetermined source has left a slimy black ring along a 3-mile stretch of beach. The Coast Guard spotted two more slicks yesterday.

The oil pollution proposal you sent to us would not in any way effect this necessary cleanup job, would it? It would not impose any requirement that this be cleaned up?

Secretary UDALL. It would give us authority—let us assume two situations. One situation that we can determine who——

Mr. CRAMER. This is undetermined——

Secretary UDALL (continuing). Who caused it, or in the other event that we could not determine that this would give us authority to clean it up, authority that we don't now have.

Mr. CRAMER. The bill, as I understand it, gives you authority to clean up only when you have prospect of recouping.

Secretary UDALL. No, I do not think it is that restrictive.

Mr. CRAMER. Where there has been a discharge and the owner refuses to clean up. When you do not know who the person is that made the discharge, you are out of business, as you drafted the bill, as I read it.

Secretary UDALL. Well, without conceding the point or settling the point, I certainly think that we ought to have broad enough authority that we can protect the beaches and the vital resources of the country under all situations that might arise.

If the language is not that broad, perhaps we should take another look at it with you.

Mr. CRAMER. Let us look at the language. There is no use batting it back and forth. It speaks for itself.

On page 6, line 4:

"The owner or operator of a vessel from which oil is discharged into the contiguous zone shall immediately notify the Secretary or his delegate of such discharge and shall remove such discharged oil in accordance with regulations prescribed under this section. If such owner or operator fails to so act, the Secretary may remove such oil or arrange for its removal, and such owner or operator and the vessel shall be liable, notwithstanding any other provision of law * * *

That is what it says.

So this Waikiki Beach problem would not be solved by your bill, as I gather.

Secretary UDALL. Maybe a clarifying amendment is needed there. But if we do not know who the owner is, I would assume it falls under the category of someone failing to act, and I think you are probably right that we need a clarifying language to make it clear that we are going to clean it up, whether we know who the culprit is or not.

NEED FOR CERTAINTY IN WATER POLLUTION CONTROL LEGISLATION

Mr. CRAMER. There are some other aspects of oil pollution—definitions and so forth—that I would like to get into, but apparently time does not permit it. Maybe somebody else is going to testify on the subject, I do not know. I would hope so, because I have some other questions relating to definitions. We just amended the Oil Pollution Act in very substantial respects in 1956. We amended the Water Pollution Control Act and called it the Clean Rivers Act. I would hope that one of these days that we get a little bit of certainty into this program. We keep changing the signals. About every 2 years we change the signals, change the formula, change the ground rules, and yet insist that the States go ahead and get the standards together and finalize them and get on with the job.

Now, we are changing formulas again.

Secretary UDALL. Congressman, let me say two things:

No. 1, there is no more vital piece of legislation my Department is interested in than this, and I will have my first team to work with you on any detail and answer any questions that we can.

We are in a period right now where we are writing the basic framework oil pollution control legislation. At the time of the *Torrey Canyon* disaster a year ago, then all of us went back to look at the old 1924 act, and the other acts, to see how we would handle this, if this occurred off our shores. We found out that our laws were very inadequate. And that is the reason we made a study. We came in with recommendations, and the Senate did pass a bill last year. So I think this is basic legislation that is very vital. I hope the committee will look at it closely and perfect it and improve it if it can.

DEBT FINANCING BILL NOT A "CURE-ALL"

Mr. CRAMER. Well, I would hope we could get this question of standards finalized without constant changes in the formula. The States will know what is expected of them. The industry will know what is expected of them, and we can get on with the job of cleaning up the rivers. Of course, the bill we have before us is largely a finance bill, and it relates in that respect only to sewage treatment plants, right?

Secretary UDALL. To municipal works; that is correct.

Mr. CRAMER. So even if we pass this bill and the Government commits itself to x billions of dollars as guarantor of these bonds, you are still not going to have "clean rivers."

Industry, agriculture, surface drainage, surface mining drainage, they are all still going to be problems.

I think we ought to be honest with the American taxpayer in saying, "Now, look, if we put up this x billions of dollars, guarantee it, guarantee that we are going to appropriate for it for 30 years in the future", we can't tell them we are going to have clean rivers when we do that. We are just going to make a step in that direction.

Secretary UDALL. I think we are going to see some rivers and lakes cleaned up. I think we have the technological capability of doing it. If we will shift into high gear and get on the schedule that Congress itself laid out for us 2 years ago, if industry will continue to move at the tempo they have been moving at the last year, I think you are going to see some very significant improvement in the water quality of many of the rivers and lakes in this country, something we can take some satisfaction in.

INDUSTRIAL POLLUTION PROBLEM

Mr. CRAMER. Well, that is the goal we all seek. I think, though, we ought to be honest with the taxpayer that this bill falls short of approaching that goal as it relates to Federal financing. It deals only on the financing standpoint of sewage treatment plants, principally government owned. It does not solve the problem of industrial pollution.

And I see no real leadership along that line in trying to get tax deductions or tax credits for industry in order to encourage industry

to do its job of cleaning up. If we can ask the taxpayers to spend \$2.2 billion, plus whatever additional obligations are involved in this, why cannot some real leadership be given to encouraging industry to do its job?

Secretary UDALL. Congressman, I commented earlier, before you came in, on the industry aspect. I think industry is doing quite well.

Mr. CRAMER. It could do better with incentive, though, could it not?

Secretary UDALL. Well, they might do better with incentives, but I am very pleased that most of them are not sitting waiting for incentive. Most of them know that we mean business with water quality standards, and they are changing to good modern equipment in their new plants. I think this is a very encouraging sign. Industry is not complaining as much as we think.

Mr. CRAMER. Well, I have heard from quite a few. I did not say that they are complaining, but they need assistance, and they need help. I personally favor tax credits, deductions or incentives in some way to get them into a better position to help them clean up the rivers.

WATER QUALITY STANDARDS

You stated that over half the States standards have been approved. Is it not true that 10 States whose standards were approved by you have been called back because you have changed your mind as to what the standards should be in order to meet your approval?

Secretary UDALL. With 10 of the States, these were the first States that we approved, we have not basically changed the approval; we have raised one or two new questions—

Mr. CRAMER. Like what?

Secretary UDALL. With them.

Mr. CRAMER. Like what, for instance?

Secretary UDALL. What actually occurred, Congressman, is that we went through the process of setting standards. We learned certain things that we did not know in the beginning. We surfaced certain problems that we were not aware of, and therefore we improved the standards and we have had to go back to the earliest States that we approved in June last year, some of them, and say that we would like to have a couple of changes made. But we have not disapproved their standards, and we have at the present approved 31 States. We have several others that are nearly ready for approval.

Mr. CRAMER. I appreciate that. However, I would like to know what some of the changes were.

"NO DEGRADATION POLICY"

Secretary UDALL. Well, the main change, the one that has gotten the most publicity, was the change with regard to what has been called the "no degradation policy" and most of the States are accepting this. Some are arguing with us about it, and we are compromising, working out compromise language with most of them to incorporate what we consider sound language to implement the 1965 Act.

Mr. CRAMER. Now, does "no degradation of existing water quality" mean that on a river, although it is adaptable to industrial development, for instance, or farming or what-have-you,—surface drainage

is just as much a problem—where that river today is without that industry or farming, and is a relatively clean river, that in the future this “non-degradation” means that river must remain in the same quality?

Secretary UDALL. Our interpretation—

Mr. CRAMER. Therefore, that industry could not come in in some instances?

Secretary UDALL. Our interpretation of the 1965 Act is that the Congress intended it as a water improvement act, as an improvement of quality, and that the whole concept was that we would be enhancing the quality as the program moved ahead.

Now, this does not mean no new development and I have had to explain this laboriously to some of the State people that were concerned about it. Let's take an average river that has several cities that discharge effluent, some treated, some untreated, and several industries, some put treated effluent in, some untreated effluent, and the “non-degradation policy” there would mean, for example, that as your clean-up program moved forward, and the minute one community or one industry cleaned up its effluent substantially, the river would be of higher quality, and the other thing that is enormously helpful is that most of the new modern plants, industrial plants that are going on, are installing, because of the water quality standards, very modern equipment, and therefore the amount of effluent that they put in that diminishes the quality is rather small as compared with the earlier plants. Therefore, nondegradation does not mean no new industrial development. It simply means we have got to keep a clean-up program going in order to accommodate new industry.

Mr. CRAMER. Is it your philosophy that there are no rivers, that there are no streams, the use of which by industry is justified to the extent of some pollution some degradation of the rivers, necessitated by the nature of the industry?

Secretary UDALL. Some States have deliberately in their water quality standards set aside some rivers. There are prime trout streams and your upland streams, and they have set them aside to not be used for certain purposes and not be polluted in any way, and I think this is a very good policy.

Mr. CRAMER. I asked you the reverse question, however. Are there streams in which you would approve some degradation because of their particular applicability for industrial development and so forth?

Well, let me give you an example—in other words, you cannot have clean waters on every river where you have industry no matter what cleanup effort they make. Industry in some forms by its nature has to cause some degree of pollution.

When you say “no degradation,” that would seem to me to limit the use of the shoreland by the control of standards in that manner.

Congressman, there are two answers. I tried to give you the one a moment ago, with regard to how we feel this will actually work. And as the cleanup program moves forward, there is room to accommodate additional uses—additional industrial uses, let us say, or additional municipal loads, and still have what will probably be a cleaner river.

Then we have other situations. Let us take the State of Alaska, which is largely undeveloped. They have many large rivers there

where there is no industry, no community, no pollution at all. They came to me and said, "Well, what does this policy mean? That we can't have cities? We can't locate industry?" We do have an exception clause that we have written into the antidegradation provision that opens the door to exceptional circumstances, with the burden, of course, on the State or on the industry to show that such circumstances do exist.

Mr. CRAMER. Well, I do not want to belabor it interminably, but if, in fact, the hearing record establishes that the maximum value and use of the stream can be achieved by water quality standards somewhat below existing levels, then do you think that you, under the present law, have authority to arbitrarily, despite that hearing record, refuse to give effect to such standards?

Secretary UDALL. In effectuating the "no degradation" policy, we had to attempt to interpret the meaning of the 1965 act. I know there are those who disagree with us, and I saw a letter from the U.S. Chamber of Commerce yesterday on this, the legal opinion that they have gotten that disagrees with us, but it is our view that the "no degradation" policy effectively asserts the policy that Congress itself wrote into the 1965 act. This was contemplated as a water enhancement law. The whole tenor of the 1965 act, if you look at it, was one of water improvement, water enhancement, raising the quality rather than lowering it.

I think we can do that. I do not think this is going to inhibit new industry. It is going to mean that new industry is going to have to put in very good pollution control equipment. It is going to mean that we are going to have to get the cleanup program going. I think, if we do that, that in these industrialized areas, and along the sections of streams and tributaries where there will always be some effluents and some pollution, we can still have no degradation in effect, and have increased uses of these waters.

Mr. CRAMER. Well, maybe the choice of terminology is not too good, when you say "nondegradation," and in the next breath you say "We are going to make some exceptions like Alaska."

Similarly, confusion is created in the case of the suggestion I had relating to new streams that have not been developed industrially, or agriculturally, where you are going to have surface drainage in agriculture. You are going to have some pollution in industry no matter how much they are going to try to clean it up. I do not think you will ever find a pulp mill that is not going to have a little bit of pollution.

Secretary UDALL. That is true, there is going to be some effluent.

Mr. CRAMER. Does that mean by these standards these new areas are not going to be opened and developed, because the result would be some degradation of that stream?

Secretary UDALL. No. We don't interpret it that way at all. And I believe that this policy can be effectuated and that we can achieve what I think Congress wanted without seriously inhibiting the industrial growth of the country. I just do not think that this is going to be the effect.

Mr. CRAMER. And the standards that have been set are that you as Secretary could make exceptions?

Secretary UDALL. We do have authority to make exceptions where there are hardships or special social or economic reasons.

Mr. CRAMER. The State does not have such authority?

Secretary UDALL. We write this kind of language into the State standards. The States will administer them, and we will have to get back into the picture only if we disagree with the way that the State is enforcing the standards. That is the reason we want—

Mr. CRAMER. Why do you not permit the States to having a State agency make those exceptions under certain standards, rather than you, as Secretary, judging every single case?

Secretary UDALL. Well, I would expect only very exceptional cases to actually get to me, or even get to Washington.

Mr. CRAMER. I do not want to see the Secretary of Interior or any Federal agency saying to every industry that "You either can or cannot locate" or that any new farm can be established or not established along a given stream. I do not want to see this as strictly the Secretary's power. That is what bothers me.

Secretary UDALL. Congressman—

Mr. CRAMER. I do not think we intended that in the 1966 act.

Secretary UDALL. I do not think we are setting up that kind of administration. And I would predict that in 99 out of 100 cases the State people merely will be touching base with our people, and that the local or regional level will make most of the decisions on these matters. And we will be brought in only when there is a loud outcry, usually from sportsmen and conservationists, that there is a flagrant example of degradation of a stream or river, and that the water quality standards are not being kept. So we don't want to go in the business of running this program from Washington. We think Congress contemplated that if the States would fix suitable standards, the States would do most of the administering and the enforcing, and we would get in only if they did not do their job right.

Mr. CRAMER. Well, even if the hearing record clearly shows that you cannot have this industry X on this river without some degradation, but that this river can be used and should be used for agricultural purposes, or for industrial purposes, that State does not have the power to say "Yes," because that is an exception to the standards. Only you have that power.

Secretary UDALL. No. Because we end up with a "no degradation" section in the State standards that we are agreed upon. Now they will administer their own standards. We will get into the picture only if their administration breaks down.

Mr. CRAMER. When somebody objects to how they are doing it?

Secretary UDALL. That is right.

Mr. CRAMER. So you have the final say?

Secretary UDALL. We get into the big fight, as we usually do—when there is a big fight between the sportsmen and chambers of commerce over location of a new factory that is going to ruin the fishing somewhere. That is when we are going to be in the picture. Only then—usually only then.

Mr. CRAMER. What kind of headache is that you are asking for?

Secretary UDALL. That is the kind of headaches I have every day.

Mr. CRAMER. An Excedrin headache? [Laughter.]

PRESENT SERIOUS ECONOMIC SITUATION

Mr. CRAMER. I wanted to just take a minute on money. I do not quite understand in the bill how much tax money is needed, particularly under these circumstances where tight money, high interest rates, and now unbalanced budgets—and more of them come with no relief in sight—and serious inflation problems and escalating costs of the war. Here we want an escalated program and the President tells us we are going to ask Congress to cut these expenditures. Every program he sends up practically says "Let us start a new one. Let us spend more money."

This is an example.

I do not think we can judge this bill in the context of what is going on in America today and in the world relating to the value of the American dollar. It is in trouble. I know I do not have to tell you that.

The Federal Reserve Board Chairman made it very clear to the American people that it is in worse trouble since 1931. That is a pretty serious consideration we have to take into account. So I want to know how much money we are talking about.

Secretary UDALL. Congressman, I am in a very happy situation, because I cannot argue with some of the things you just said, but, if you pass this law as we propose it, in fiscal year 1969 there is no additional Federal money involved. I cannot say that for the following year. This is for the reason, you see, that we are picking up the difference between authorization and appropriation by this commitment to pay interest and principal on indebtedness, except the first payment will not come due at least for a year.

So I am not so sure, if we had not fortunately come out this way, that I would have gotten this by Mr. Hughes in the Bureau of the Budget—

Mr. CRAMER. He thinks everything is going to be all right next year?

Secretary UDALL. I do not know.

Mr. CRAMER. Is everything going to be all right, Mr. Budget Maker, next year?

Is everything going to be all right next year?

Mr. HUGHES. I am sure, Mr. Cramer, that the budget next year, like the budget this year, and the last year and 10 years ago, will be the source of considerable controversy and disagreement as to whether it is high enough or low enough. And there will be people on both sides.

Mr. CRAMER. I know. It is too high.

Mr. HUGHES. Pardon?

COST OF THE PROPOSED CONTRACT PROGRAM

Mr. CRAMER. It is too high, and this will make it higher. \$225 million is a budget request for 1969; right?

Secretary UDALL. That is correct.

Mr. CRAMER. That leaves you money to put into this of \$475 million, according to your approach.

Where does the bill say you are limited to that \$475 million?

Mr. HUGHES. Could I respond to that?

I took a run at it when Mr. Cleveland raised the question.

The bill itself does not limit the total commitments. The Secretary's letter, the transmittal letter, does indicate that it is our intent to establish a program level equal to the authorization that was established by the Congress—

Mr. CRAMER. If you have a new administration and decide it has a different intent, then there is no limit.

Mr. HUGHES. In any event, Mr. Cramer, the budget proposal in the proposed program level will be subject to congressional review through the Appropriations Committee.

Mr. CRAMER. By the Appropriations Committee? We do not have anything to say about it, the authorizing committee?

Mr. HUGHES. Congress has something to say about it.

Mr. CRAMER. We do not have anything to say about the authorizing aspect of it, setting the limits by authorization for long-range planning and so forth? We have established the point that there is really no limit—

Mr. HUGHES. There is no statutory limit.

Mr. CRAMER (continuing). If the executive branch does not want to exercise limit and the Congress itself does not want to by appropriation exercise limit.

Mr. HUGHES. There is no statutory limit in the bill itself.

Mr. CRAMER. Why is there no limit?

Mr. HUGHES. I think there could be, Mr. Cramer. We struggled with the problem of wisdom of statutory limitation, versus an expression of intent, and we came out in the fashion that I have indicated.

Mr. CRAMER. Well, can you tell me how much money this bill is suggesting the Government be committed to guarantee in the future?

Mr. HUGHES. The bill and the accompanying letter suggests a program level equivalent to the authorized level established in the basic Water Pollution Control Act.

Mr. CRAMER. I want to know how this is going to balloon. How much is the Federal Government obligated and how much could it obligate itself as a guarantor, moneywise, to—what figure? This includes the local share, too.

Mr. HUGHES. That is correct. Its contingent liability through the guarantee would include the local share as well as the Federal share.

Mr. CRAMER. How much are we talking about? You are talking about under your letter suggesting a limitation, which is not binding, of course, \$700 million, for 1969; you have \$475 million surplus, which is just one year amortization, right, of a 30-year contract?

Mr. HUGHES. \$475 million is the program level which we have proposed be supported through this contract procedure. We have not proposed amortization payments of \$475 million in 1969.

Mr. CRAMER. How can you start entering in contracts in 1969 if you do not have an appropriation limitation of some sort? You do not know what it is going to be in 1970. But you will be encouraging the local municipalities to enter under contracts and bond issues in 1969?

Mr. HUGHES. The starting point, of course, would be the authorization for the program, and the appropriation actions would have to

follow in support of the authorizing action; the appropriation action would govern the program size.

Mr. CRAMER. I want a figure. Under this legislation, how much could we obligate the Federal Government, to guarantee in the future for 30 years?

Mr. HUGHES. The total Federal obligation——

Mr. CRAMER. The guarantee figure.

Mr. HUGHES. The guarantee figure would be the combined level of the program, Federal and local share, whatever that might be after the action of the Appropriations Committee and the Congress.

Mr. CRAMER. Well, that is still not answering my question. Let's assume that the appropriations conform to the 3 years—\$700 million, \$1 billion, and \$1.25 billion, and assume the budget requests are going to be about the same as they have been, \$225 million, and then the remainder is \$2.275 billion over a three-year period; right?

Mr. HUGHES. That is correct. That would be the Federal portion.

Mr. CRAMER. Of 1 year's or 3 years' guarantee——

Mr. HUGHES. Three years.

Mr. CRAMER. It would be one-tenth of the bond value over approximately a 3-year period.

Mr. HUGHES. The \$2.275 billion would be the total Federal commitment. The Federal principal commitment would be \$2.275 billion.

Mr. CRAMER. So what figure are we talking about?

Mr. HUGHES. The total Federal principal commitment would be the 2.275 billion. The additional Federal guarantee liability would depend on the local Federal ratio and might approximate that in size.

Mr. CRAMER. Whether it is 30 percent or 40 or 50 percent ——

Mr. HUGHES. Yes.

Mr. CRAMER. So we are talking about \$4.5 billion?

Mr. HUGHES. Perhaps, of contingent liability.

Mr. CRAMER. Over a 3-year period, of contingent liability.

Mr. HUGHES. That would be the total program size in that 3-year period.

NO EXACT PRECEDENT FOR CONTRACT PROGRAM

Mr. CRAMER. Let's get to this interesting gimmick on paying back interest for interest-bearing municipal bonds. I would like to ask you first, is there any precedent for this?

Mr. HUGHES. There are, of course, other precedents for an interest subsidy, but there is no four-square precedent for this kind of program.

There are subsidy payments in various forms.

Mr. CRAMER. I want to know what the precedent is for forcing a municipality into issuing non-tax-exempt bonds, as compared to tax-exempt bonds?

Mr. HUGHES. This offers the community an option——

Mr. CRAMER. If they get the Federal money, they have to go into non-tax-exempt bonds.

Mr. HUGHES. That is correct.

Mr. CRAMER. All right. What precedent is there for that?

Mr. HUGHES. This is as far as I know in the nature—this is a unique program. This is an effort to meet a Federal commitment by somewhat unique means.

Mr. CRAMER. I understand the objective of it. I asked you what the precedent is.

Mr. HUGHES. There is no four-square precedent.

Mr. CRAMER. There is no precedent?

Mr. HUGHES. That is correct.

INTEREST COST

Mr. CRAMER. I will ask the next question this way: What is going to be the interest cost—I am interested, as is the Secretary, in building these plants. However, over 50 percent of this Federal money going into it will be for paying interest, will it not?

Mr. HUGHES. Yes. The interest cost would be substantial in any event.

Mr. CRAMER. So your interest would be, what, about 120 percent of the principal, would it not?

Mr. HUGHES. The interest would be some rate differentials, but of course whether the money were borrowed to make grants or whether the concept adopted here of an amortization payment were used, the interest cost would remain very substantial.

Mr. CRAMER. So, in effect, this is the point I want to get to. This \$2.275 billion over a 3-year period that we are irrevocably committing Congress to appropriate for over a 30-year period with 120 percent interest, means we are going to get, around a billion dollars' worth of actual construction, plus assuming 50 percent paid by local funds, maybe \$2 billion.

Mr. HUGHES. The amount that we referred to, the \$2.275 billion, I believe, is the principal amount we are talking about. We are talking about program level. The interest cost would be in addition as they would be if there was a cash grant made. In either event, the interest cost would be added to that.

Mr. CRAMER. I understand that. Is not my analysis correct that the actual construction resulting from the Federal share would be about a billion dollars?

The interest cost cuts it into less than half?

Mr. HUGHES. I think, Mr. Cramer, we may not be communicating here. We contemplate a program level which would be increased, a program level which would be increased by the amount of the \$2.275 billion, and there would be financing costs in addition to that.

Mr. CRAMER. I am not talking about interest subsidy now. I am talking about interest cost on the Federal 50-percent share. It would be in excess of 50 percent of the appropriations?

Mr. HUGHES. That is right.

Mr. CRAMER. And your total appropriation would be \$2.275 billion, including interest—sure.

Mr. HUGHES. No, sir. The \$2.275 billion is contemplated additional program level above the grant level, and interest costs would accrue in addition to that.

Mr. CRAMER. You mean this represents only principal cost?

Mr. HUGHES. Yes, sir.

Mr. CRAMER. That is very interesting. Then we are really talking about at least twice as much contract authority. We are talking about \$5 billion instead of \$2.275 billion. That is very interesting. I did not read that into the bill.

Mr. HUGHES. We are talking about a program, additional program level, of \$2.275 billion, and——

Mr. CRAMER. Plus interest.

Mr. HUGHES. Plus interest.

Mr. CRAMER. Which is 120 percent more.

Mr. HUGHES. I am not sure of the 120 percent.

Mr. CRAMER. Approximately.

Mr. HUGHES. Certainly the interest would be in addition.

I say again, Mr. Cramer, the interest costs are additional, whether it is a cash grant or an amortization payment.

Mr. CRAMER. That has the effect of doubling these authorizations so far as Federal commitments are concerned.

Mr. HUGHES. I do not so regard it. The program level would be the same as though those amounts were appropriated in the 3 years in the form of cash grants.

Mr. CRAMER. Plus interest.

Mr. HUGHES. Plus interest. That is correct.

Mr. CRAMER. So in effect what we are doing by this method, we are getting 50 percent or less construction as compared to what we would get out of direction appropriations, using this bond issue gimmick.

Mr. HUGHES. No. That is not correct.

Mr. CRAMER. What is correct?

Mr. HUGHES. We would get the same level of construction that we would have gotten had those been cash grants. The interest cost in the one case would be paid in the process of amortization, and in the other case, it would have been paid in the form of interest on the public debt to finance the cash grant.

Mr. CRAMER. Well, I would like to make sure I understand it, that this limitation which you say you are willing to accept, but you don't have to if you don't want to, of \$700 million for 1969, \$1 billion for 1970, \$1.25 billion for 1971, is that principal amortization or principal and interest amortization?

Mr. HUGHES. That is principal. That is the program level, the additional program level, represented by the contract face value, if you will.

Mr. CRAMER. That means it would cost double that, at least, because of interest and carrying charges.

Mr. HUGHES. The interest cost would be in addition as they would be if this were a cash grant.

Secretary UDALL. Let me make two points, to help clarify this.

Mr. CRAMER. That is assuming you have to borrow the money, is that what you mean?

Mr. HUGHES. The value of money is the value of money, whether it is available——

Mr. CRAMER. Assuming we do not pass the surtax and eventually balance the budget?

Mr. HUGHES. The value of money is the interest cost of money.

Mr. CRAMER. I understand.

Mr. HUGHES. As we see it, it is the proper charge against the program, no matter how the program is financed, whether on amortization basis—

Mr. CRAMER. You mean even if the taxpayers pay it to you direct, increased taxes, and Congress cuts spending, and we end up with a balanced budget, what happens to the interest.

Mr. HUGHES. The money has value. It is available for other purposes. If we do not have it for this purpose, we can use it otherwise.

Mr. CRAMER. You can have a little trouble convincing taxpayers that there is no difference between their having to pay this double amount as compared to a single amount.

Mr. HUGHES. It seems to me the taxpayers would appreciate the fact that cash has a value.

Mr. CRAMER. They know it better than anybody else. They have to give it away, give it to Uncle Sam.

Mr. HUGHES. I certainly agree with that, and the value is expressed in terms of interest.

Mr. CRAMER. I did not mean to cut you off, Mr. Secretary.

Secretary UDALL. I want to make two points.

We have written this flexibly—

Mr. CRAMER. You sure have. I agree with you.

Secretary UDALL. So that if we have a situation where we can increase the amount of the cash grant program, we could come in at any time and pay particular bonds off in full or make advanced payments.

The other point I would make is that the water pollution control program is being financed by bonds at the present time—the local communities are paying interest, the states which are making a State contribution are doing it by bonds. So that Federal Government, in terms of its paying extra costs, is doing nothing more than State or local governments are doing. And I think we simply ought to make that record so that everyone understands it.

Mr. CRAMER. Well, I understand, Mr. Secretary, that you will be back next week. I did want to get a figure from Mr. Budget here, as to what the interest subsidy cost will be. You know, the difference between tax-exempt and non-tax-exempt bonds—

Mr. HUGHES. The bill specifies that a formula for arriving at the subsidy, there are obviously a number of estimates necessary in terms of interest rates and the local share—

Mr. CRAMER. I understand that.

Mr. HUGHES. Marked maturity and so on. The cost of the interest subsidy per se—based on premises that I will be glad to give you in writing—would be for contracts entered into in the 3 years, about \$950 million total.

Mr. CRAMER. That is about \$1 billion that we also lose by using this gimmick, that we do not get construction for, is what I mean. Does not end up in construction.

Mr. HUGHES. We get the same amount of construction for somewhat less with the use of the interest subsidy than we do with the use of the tax exemption.

Mr. CRAMER. I will yield to the gentleman. I have some other questions when you come back.

NEED FOR RESEARCH

Mr. SCHWENGEL. First I want to say to my former colleague that it is good to see you here again. I have read your book and I commend you for that.

I have just one question, an observation, which deals with research. I am one who believes that there is a need for a lot more research. And I would like to ask this question: Would you consider amending this section so that we can have the benefit of experience the Highway Commission had had with the Bureau of Roads, with the State highway commission, where they have the efforts of private enterprise, communities, of States, and the Federal Government, so that we can more truly reflect the changing needs for resolving the pollution problem?

It seems to me that we can find some more economical answers and better answers to some of these problems.

Also because of present growth, I am aware of the fact that the watershed, the water control on land, is not unrelated to this problem. In fact, the completion of the watershed program itself would make the resolution of the pollution problem that we are talking about here today much easier; is that right?

Secretary UDALL. I would agree with your last point, Congressman. And I share your belief in the efficacy of good research programs. I would like to give you a piece of paper that lays out the magnitude and the nature of our research effort that the Federal Water Pollution Control Administration has going. We think it is a very good one. And a lot of that is joint research where we do have partners in it.

I think that is some of the best money we spend, in trying to find better ways, and more efficient and cheaper ways, of getting the job done.

Mr. SCHWENGEL. This is all, Mr. Chairman. I understand you will be back day after tomorrow, and I want to pursue this and some other matters that have occurred in this colloquy.

Mr. McEWEN. Could I have a clarification?

When is Secretary Udall coming back.

Mr. HOWARD. I believe we have been informed sometime next week. I believe we are discussing either Wednesday or Thursday, that the Secretary will be able to return.

Mr. McEWEN. Of next week?

Mr. HOWARD. Yes. Next week. And Mr. Moore will be available this afternoon.

Mr. McEWEN. Mr. Chairman, the gentleman from Iowa said he has read his book. I bought it, and I think that would qualify for me an opportunity to ask some questions next week.

TOTAL FEDERAL COST OF CONTRACT PROPOSAL

Mr. CRAMER. May I just recap this, so that it is understood.

As I understand it, this authorization of \$2.275 billion Federal share in contracts means that by passing this bill and you agreeing to that limit, which you don't have to do, would mean that it would be matched by approximately \$2.275 billion locally, perhaps a little more. But that would be a Federal guarantee, right?

Mr. HUGHES. That is correct.

Mr. CRAMER. Contingent liability. So we are up to \$4.5 billion.

Then we have a little bit of Federal share of the interest, which you say is not included in this authorization, so it is above it, of about \$2.5 billion. But then you have an interest subsidy which is \$900 million. It is not in this authorization, which is almost another billion dollars. So we are up to almost \$8 billion that the Government is either guaranteeing to the \$2.2 billion and the balance we are absolutely liable for. So we are guaranteeing 2.2, and we are putting out a cash eventually of \$5.7 billion.

Mr. HUGHES. I think the only thing I would add to that summary—

Mr. CRAMER. Do not add any more, please.

Mr. HUGHES. I think it is rather important for the accuracy of the record, that again interest costs accrue no matter what, and secondly that in consideration of the interest subsidy, there would be a more than offsetting gain in tax receipts.

Mr. CRAMER. The thing I am interested in, the figures in the bill are not very illuminating. They could be increased by guarantee or otherwise, by \$5 billion. That is pretty substantial.

Mr. HOWARD. Thank you, Mr. Secretary.

This committee is in recess until 2 p.m.

(Whereupon, at 12:49 p.m., the subcommittee recessed, to reconvene at 2 p.m. the same day.)

AFTERNOON SESSION

Mr. WRIGHT. The committee will come to order.

The Chair would like to express the appreciation of the committee for the patience of all of you who have come to testify, as we have been throughout the morning with Secretary Udall and have not completed the questions that the committee desired to ask of representatives of the Department of the Interior.

We are going to follow this procedure this afternoon: Congressman William A. Steiger, of Wisconsin, who sat through the morning session, will be heard first; and then as a courtesy to Mr. Loring F. Oeming, of the Michigan Water Resources Commission, who has a plane to catch, we will let him appear next. Following that Mr. Joe G. Moore and Mr. David Finnegan, of the Department of the Interior, will be asked to return in order that we may pursue a bit further some of the questions the committee wanted to pose to the Interior Department.

I know this creates some inconvenience to some of the witnesses who have come and anticipated appearing this morning, but the situation cannot very well be helped.

The committee does have the opportunity to inquire into some depth of the representatives of the administrative department which is recommending the legislation and feels we must go ahead and pursue, so long as members of the committee desire to do so, that line of questions. I hope it is not working a hardship on anyone else.

At this time we are pleased to have the very distinguished and very able Congressman from Wisconsin, Mr. William A. Steiger.

Off the record.

(Discussion off the record.)

Mr. WRIGHT. Now back on the record.

The committee is very pleased to have you with us and will be most interested in your testimony.

STATEMENT OF HON. WILLIAM A. STEIGER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WISCONSIN

Mr. STEIGER. Thank you, Mr. Chairman and members of the committee. I will not take the time, because of the number of witnesses that you have, I would ask that the statement that I have made be a part of the record.

Mr. WRIGHT. Without objection, it will appear in the record at this point.

(The prepared statement by Congressman William A. Steiger follows:)

LAKE POLLUTION CONTROL

STATEMENT OF CONGRESSMAN WILLIAM A. STEIGER

Mr. Chairman, the legislation before us today, HR 13312, is not complicated. The purpose of this bill is to authorize a program of research and demonstration for the control of pollution in lakes. It authorizes the Secretary of the Interior to enter into contracts with or make grants to, public or private agencies or organizations or individuals for the conduct of research and demonstration projects or the purpose of developing effective and practicable remedial measures, including, without limitation, measures for the prevention of nutrient entry and the removal of existing nutrients and vegetation, to improve the quality of the waters of the inland lakes of the United States.

This bill is an outgrowth of my proposed Clean Lakes Act, HR 12759, submitted on August 31, 1967. Review of that bill by the Department of the Interior in a letter of September 26, 1967 resulted in the incorporation of their proposed changes. The Department of the Interior supports HR 13312, and this bill is in agreement with the Administration's program.

There is a serious threat to the more than 100,000 lakes in this country, a threat not fully recognized until recently, but one which must be met now with a sense of urgency and adequate resources, if we are to reverse the increasingly deleterious effects of man's activities on our inland lakes. HR 13312 specifically identifies the need for a greater focus on the problems of our lakes and the immediate need for many more demonstration projects and further research into the pollution of our lakes. Much has been accomplished in the past with our research efforts, and it now is time to test these new methods with demonstration projects. Efforts must be accelerated. Funds allotted in this bill are but a start to what the total needs will be, and these needs should be further defined by the Federal Water Pollution Control Administration in the coming year, if we are to knowledgeably appropriate the necessary funds in future years. It is imperative that we assign a higher priority to work on the causes and effects of lake pollution. The Clean Lakes Act identifies this priority.

The lakes are suffering mainly from what is commonly called eutrophication. Much has been said about this phenomenon, especially in relation to the plight of one of our most valuable natural resources, the Great Lakes. There is little need to take your time with detailed discussion of eutrophication except to briefly state the problem. The process is not fully understood, hence the crying need for increased research and demonstration projects that will put our findings into workable solutions. It is presently agreed that the build-up of various chemicals, particularly nitrogen and phosphorus, increases the growth of aquatic plants, mainly algae. Nutrients promote excessive growth, just as fertilizers promote the yield of crops. Nutrients are fed into a lake via the atmosphere (rainfall), ground-water flow, surface runoff from surrounding lands, and man's activities, which include draining of marshes, cutting of forests, fertilizing his crops, and drainings from sewers and urban centers. While the build-up of nutrients is a slow process under normal conditions, man has accelerated this process. And a lake that has become nutrient-rich is a lake that is extremely difficult to restore. The effect is to limit or to completely eliminate recreational use of the water and surrounding areas, and to impair the use of a lake for a water supply. There is a direct effect on tourism and the economic base of an area. The economic cost of correcting seriously polluted water is fantastic. The cost to society is serious whether measured in terms of dollars or in benefits lost.

Phosphorus is the nutrient that is presently considered the most accessible factor for control. The uncertainty as to the exact role played by other elements

emphasizes the need for research if for no other reason than to provide the basics of the chemical interactions in the process of eutrophication.

On February 10, 1968, I held an informal hearing in my district at Neenah, Wisconsin, to consider the Clean Lakes Act, H.R. 13312. The hearing drew considerable support. I believe that a summary of the statements presented to that hearing can better demonstrate the understanding, concern, and the recognition of the need for action than pages of testimony that I might offer here. I therefore submit a summary of these statements for inclusion with my statement and ask that it be made a part of the Hearing Record.

People in the Sixth District of Wisconsin, and across the nation, appreciate the problems of the lakes, and they want action. They realize that little is known about the ways of solving the problems, and they recognize the need for continued research and demonstration projects. The informal hearing produced many examples of projects now considered by people in my area. I will cite a few.

A consulting engineer from Milwaukee has completed a study of the removal of sediment and muck from Little Muskego Lake. His study shows what can be done with present technology to restore a lake by dredging operations. Due to high costs and uncertainties, there is considerable need for demonstration grants to stimulate such projects so that more can be learned at greatly reduced costs.

The Wisconsin State University—Oshkosh is expanding research facilities in the hope of including projects, funds permitting—to investigate the role of marshlands in lake dynamics; to measure primary and secondary productivity; to make inventories of faunae and flora; to study lake currents; and to begin intensive interdisciplinary study of the aging process in Lake Winnebago.

The University of Wisconsin, an institution that is well established as a research center in limnology, and which is undertaking numerous projects to uncover a solution to the problem of eutrophication, would gain renewed impetus from additional support for research. If a breakthrough is to be made we must strengthen the centers which are accomplishing important work. A large investment is required when a university focuses the attention of many different disciplines on the solution of a single problem, and it is in this area that the federal government can effectively lend support.

Regional planning units, such as the Northeastern Wisconsin Regional Planning Commission and the Fox River Valley Council of Governments, are an aspect in translating proposed research and demonstration projects into actual programs of pollution control. Comprehensive zoning, which takes into account man's effect on his environment (e.g., the drainage into rivers and lakes) is but one of many tools available. Planning groups are the key to successful programs in controlling pollution.

The total pollution program today is underfinanced. Although many have given support to the effort, the money committed to cleaning the nation's water resources does not match the priority of the job. One example of this paradox is a dollar comparison of the different Research & Development allocations among the various governmental agencies. I believe the will of the American people is a deep concern about dirty rivers and dying lakes, and this will should be translated into a greater allocation of dollars toward the pollution control effort. The following tabulations provide the proposed expenditures for FY 1969.

EXPENDITURES FOR THE CONDUCT OF RESEARCH AND DEVELOPMENT FOR 1969

(In millions of dollars)

Department or agency	Research	Development
Defense.....	\$1,560	\$6,624
Aeronautics and Space.....	1,578	2,917
Health, Education, and Welfare.....	1,153	86
Atomic Energy Commission.....	439	1,062
National Science Foundation.....	257	
Agriculture.....	266	
Interior.....	170	49
Commerce.....	56	21
Transportation.....	64	50
Veterans' Administration.....	47	
Smithsonian Institution.....	18	
Housing and Urban Development.....	13	
Office of Economic Opportunity.....	16	42
Justice.....	4	
Other.....	54	21
Total.....	5,695	10,911

Obligations of above agencies for water research

[In millions of dollars]		1969 estimate
Department:		
Agriculture	-----	\$21
Defense	-----	8
Health, Education, and Welfare	-----	2
Interior	-----	104
Atomic Energy Commission	-----	3
National Science Foundation	-----	2
Other	-----	3
Total	-----	143

NOTE.—The total Federal expenditure for research and development is \$16,000,000,000 for 1969. Of this, \$143 million is allocated for water research, only one portion of which is spent on water pollution research.

In the recent publication, "Water Pollution Control 1969-73—The Federal Costs," there is identified a total of only 58 million dollars for the research effort in 1969. FWPCA has planned expenditures in 1968 for eutrophication control amounting to 5.5 million dollars. These figures are striking when compared to amounts spent on other programs especially when we consider the publicity given to the needs and the unknowns of pollution control technology. The small part of our space effort, the Surveyor Program, was to land only seven instrument packages of the moon, yet this cost 350 million dollars—more than the annual budget for our total pollution control efforts.

If we are to make any sense of the figures above, we must have a break-down program on how these funds are to be spent, so that a reordering of priorities can be made. By merely looking at the magnitude of the figures for each agency, it is obvious by any measurement that little emphasis is being put into pollution control research. An argument that present expenditures are the maximum possible at this time is hard to defend, considering the greater costs of waiting. The bill that I have proposed is not the total dollar answer, but in view of the Vietnam war it offers a reasonable alternative for fiscal year 1969.

H.R. 13312 gives the Secretary of the Interior authority to initiate research and demonstration programs of new or improved methods for preventing, removing, and controlling pollution of the nation's lakes whether caused by natural or artificial processes. It is essential that we make this beginning. Present knowledge of eutrophication and the techniques for lake reclamation is too limited, and our financial resources are too limited, to begin on a full scale a program of Federal involvement. But there must be Federal support for research efforts across the nation to insure a more coordinated attack on the problem and to insure that the necessary level of effort is applied. This will mean that funds allotted for treatment facilities will go toward effective long-range plans for accomplishing the job, not to plants already out-of-date for today's waste problems.

If we are to identify the answers to algae blooms in eutrophic lakes, we must have an interdisciplinary approach to pollution. The complexity of the condition requires knowledge from diverse fields of research.

Preventing America's lakes from dying appeals to all of us. It combines the conservation of economic values, public health, prudent husbanding of natural resources, protection of wild life, restoration and preservation of natural beauty, the recapture of recreational and sport opportunities, and a decent regard for cleanliness. But what is the cost? The real cost is measured not only in physical facilities such as waste control plants, but in decreasing use of water, fewer jobs, and deferred production.

It is not possible to restore all bodies of water to their virgin condition. Today the state of the art of cleaning up the nation's water is such that we have few alternatives. Research must give us new alternatives. If the cost for clean water over the next five years is 26 billion dollars, as estimated by the FWPCA, then it is obvious—regardless of the qualification on this amount—we need a better technological base from which to accomplish the job efficiently.

There has been a breath of fresh air in government, with the recent advent of cost/effectiveness techniques. The application of the PPB system to a tangible, quantitative assurance that projects are selected on their merits and pursued at the most economical rate. Without this assurance, I would not recommend action. The kind of program I envision is one that halts this irreversible degradation of our lakes in its tracks, that proceeds vigorously, promptly, comprehensively.

sively, to build a system of protection and restoration. I would hope that this program would be accompanied by a longer range research effort, to yield an understanding of these processes, so that we can in the future design our civilization and our technology in ways that do not harm our environment. An ounce of prevention is worth a pound of cure. For the present, let us spend without delay enough to do the job. For the future, let us establish the facts and the policies, so that we do not repeat the mistakes of the past.

Mr. STEIGER. Along with the record of the informal hearings on the legislation in which I am most interested and on which I ask your favorable action, H.R. 13312, that were held in Neenah, Wis., on February 10, a copy of which has been submitted to the committee.

Mr. WRIGHT. Without objection that document will appear as an official exhibit in the hearings of the committee, and incorporated by reference.

(Documents referred to may be found in the committee files.)

Mr. STEIGER. Mr. Chairman, I will only urge that this committee take the same kind of action that the Senate took when it passed S. 2760. It included what has been known as the Clean Lakes Act as a portion of that overall pollution bill.

The problem of our inland lakes is a critical problem. The need for additional research and demonstration projects I think is well recognized and very, very important to our whole total pollution effort. I think that the House would do exceedingly well, quite frankly, were it to adopt the bill in the form as I have introduced it, as have other members of the House, which was recommended by the Department of the Interior, which does slightly differ from that from which was used by the Senate.

I appreciate the fact that this committee is holding these hearings and is as interested as it has been for so long in this problem. Its leadership I think is just fantastic and most commendable. Mr. Chairman, I appreciate the fact that you would allow me this opportunity to make this presentation.

Mr. WRIGHT. Mr. Steiger, the committee appreciates your continuing interest in this matter. You always have exhibited creative and constructive leadership and we are grateful for you sharing these thoughts with us.

Mr. STEIGER. Thank you, Mr. Chairman.

Mr. WRIGHT. Mr. Loring F. Oeming is the executive secretary to the Michigan Water Resources Commission.

Mr. Oeming, if you will move forward, the committee will be pleased to hear your testimony at this point.

**STATEMENT OF LORING F. OEMING, EXECUTIVE SECRETARY,
MICHIGAN WATER RESOURCES COMMISSION, LANSING, MICH.**

Mr. OEMING. Thank you.

May I ask that the complete statement that I have been entered into the record of this hearing, Mr. Chairman? I have provided copies to member of your staff.

Mr. WRIGHT. Without objection, the statement will appear at this point in the record.

(The prepared statement of Mr. Loring F. Oeming follows:)

STATEMENT OF LORING F. OEMING, EXECUTIVE SECRETARY, MICHIGAN WATER RESOURCES COMMISSION, DEPARTMENT OF CONSERVATION, LANSING, MICH.

Mr. Chairman and members of the committee, my name is Loring F. Oeming.

Thank you for granting me the privilege of commenting upon legislation relating to water pollution control upon which you are deliberating. I am appearing in my capacity as Executive Secretary of the Michigan Water Resources Commission of the Department of Conservation. This Commission has been delegated the authority by the Legislature to control the pollution of the waters of our State, both surface and underground, including Michigan's portion of the Great Lakes. The position I am expressing here has been approved by Governor George Romney.

I am a graduate Sanitary Engineer and am licensed to practice professional engineering under Michigan Law. I have had 35 years experience in various capacities associated with the administration of the State's water resources and pollution control programs. Commencing in 1934, I have successively occupied the position of Hydraulic Engineer, Sanitary Engineer and Chief Engineer for the Commission. Since July 1, 1962, I have held the position of Executive Secretary.

The comments I wish to offer are directed toward H.R. 15907, H.R. 16044 and S. 2760.

We in Michigan very much appreciate your interest and efforts to control water pollution and the many ways in which you have sought to strengthen the partnership between the states and the Federal government in advancing our mutual objectives toward achieving clean water for the Nation.

The control of water pollution holds very high priority among the objectives of Michigan's Executive and Legislative branches of Government. As you may know, Governor Romney has proposed that a \$335 million bond issue to combat water pollution be placed on the November general election ballot. The Michigan Senate and House have acted in impressive accord and with near unanimity in approving the necessary supporting legislation.

Gentlemen, I understand that you have before you several bills dealing with various aspects of water pollution control and the financing of sewage treatment works. Consequently, this statement will be general in nature, and limited to the areas of immediate interest to Michigan.

GRANTS FOR WASTE TREATMENT PLANT OPERATION

First—we endorse the aims of H.R. 16044 as expressed in the preamble of that bill. They are constructive and impressive. The concept of providing grants to assist in improving the performance of municipal sewage treatment plants holds definite prospects of achieving measurable improvements in water quality, substantially in advance of the time when treatment plant modifications or additions can be constructed to obtain the full degree of performance that may be required.

The provisions of the bill would stimulate the upgrading of performance of existing treatment plants with the resultant reduction in loading of the receiving waters with certain pollutants, notably solids, oxygen consuming substances and phosphates.

An example of how the provisions of this bill could have an immediate and beneficial effect on water quality is found at Grayling, Michigan, a resort community of less than 2,000 permanent residents. The existing treatment facility is inadequate to provide the necessary degree of protection for the famous trout waters of the Au Sable River, particularly during the seasonal influx of tourists and of personnel at a nearby National Guard encampment. Trial full scale testing at Grayling this past year disclosed that even with the inadequate plant, substantial removal of oxygen demand, solids and phosphates could be achieved simply by the addition of certain chemicals. Phosphates alone were reduced some 70% by such addition. Thus, during the period of time it will take to design, arrange the financing and construct the needed plant improvements, a substantial measure of enhancement in quality of the river can be achieved, although at a distinct increase in operating costs. Assistance in paying these costs would be extremely helpful.

The next proposed legislation on which we would like to comment is S. 2760. The pollution control needs which are highlighted by this bill's proposed amendments to the Water Pollution Control Act are serious problems whose solution definitely requires federal assistance.

LAKE POLLUTION CONTROL

The needs for improved techniques for controlling lake pollution in a state like Michigan, with its numerous inland lakes, are urgent. We endorse the concept of research and demonstrations which would lead to the restoration of these lakes to their full degree of usefulness.

OIL POLLUTION CONTROL

The need for a strengthening and tightening of the legal mechanism for control of oil pollution is also most urgent. The number of incidents of oil pollution from commercial vessels reported to the Water Resources Commission has increased markedly in recent years. These incidents have ranged from the most serious—the foundering of an oil barge in Lower Lake Michigan, with attendant massive fouling of more than 200 miles of beaches during the next summer—to the nearly continuous summertime complaints of swimmers smeared by tar-like fuel oils on our Great Lakes beaches.

The growing rate of complaints has paralleled the increase in number of oil-fueled vessels on the Great Lakes. These have been vessels engaged in lake commerce as well as those in ocean commerce. Nearly all vessels inbound into the Great Lakes through the St. Lawrence Seaway are oil-fueled.

It is apparent that the amendment of the Oil Pollution Act by the Clean Waters Restoration Act of 1966, P.L. 89-753, has been inadequate to cope with the problems we are experiencing.

There are two aspects of the proposed amendments which are essential for adequate oil pollution control:

1. Strengthening the enforcement provisions by removing the words "grossly negligent" and "willful" in the definition of the word "discharge";
2. Creating a revolving fund to finance clean-up measures under critical conditions.

As a pollution control administrator with some 35 years of experience I can personally testify that the requirement of proving "negligence" or "willfulness" provides almost a guarantee of escape from the penalties of a polluting act. Much of the fouling of eastern Lake Michigan's shoreline from the previously mentioned oil-barge foundering could have been prevented had there been provisions and funding for emergency clean-up.

We do not agree with the expansion of Federal authority in one area of oil pollution control, that of shore installations. Vessels engaged in interstate commerce should and must be under Federal authority, but control of oil pollution from shore installations should remain the primary responsibility of the state. To separate oil pollution control within a state on the basis of whether the installation is adjacent to navigable or non-navigable water can only lead to jurisdictional confusion and fractionating of effort. The Michigan interstate water quality standards require that there be "no visible film of oil, gasoline or related materials, and no globules of grease" resulting from a discharge into Michigan waters. The Secretary of the Interior has approved that portion of the standards containing this provision. Michigan statutes are fully adequate to enforce these standards and it is certainly the intent of the Water Resources Commission and its member agencies to do so.

We are encouraged by the bill's authorization for the Secretary of the Interior to enter into agreement with States in the enforcement of the Act. Such agreements could greatly strengthen the Act's enforcement provisions.

POLLUTION BY COMMERCIAL VESSELS

One aspect of pollution with which we are experiencing increasing problems is the indiscriminate overboard disposal of garbage, dunnage, and trash from vessels engaged in commercial navigation. The detrimental effects of these practices grow increasingly worse with the use of plastics and other indestructible containers. Public and private costs in the removal of this debris from Great Lakes' beaches is becoming very substantial. The aesthetic damage is even more serious.

ALTERNATIVE FINANCING METHOD FOR WASTE TREATMENT WORKS CONSTRUCTION

Of the most concern to Michigan among the bills which are now before you, is H.R. 15907.

The impact of this bill not only holds little prospect for advancement of pollution control in Michigan, but gives every indication of seriously impairing our purpose and progress.

Lieutenant Governor Milliken presented the State's position on the counterpart bill S. 3206 before the Senate Subcommittee on Air and Water Pollution on April 10. Copy of Lieutenant Governor Milliken's statement is attached to my statement. Briefly, our position as expressed by him, is as follows:

Our goal, by 1980, is to effectuate full pollution control in Michigan, with an adequate and dynamic program to maintain it. This will involve constructing 210 new municipal treatment plants, improving 126 existing sewage treatment plants, and building collecting sewers for an additional 3.5 million people.

Costs of this program are estimated at \$1.2 billion, of which \$568 million is for treatment and interceptor facilities and \$641 million is for lateral sewers and storm water control.

The payment formula for the \$568 million set forth in the 1966 Clean Water Restoration Act (P.L. 89-753) would call for Federal assumption of 50% or \$284 million, and State and Local shares of 25% or \$142 million each.

To provide for full accomplishment of these urgently needed improvements, without the crippling injury of protracted scheduling, Michigan has embarked on a bond issue proposal that will finance full-scale attack along the entire pollution front.

To be on the safe side, our bonding proposal assumes that the Congress may not appropriate enough to provide the \$284 million for Michigan but may be expected to appropriate half that amount.

This means the State will be prefunding half of the Federal share by picking it up in our bonding issue in the hope that the Federal money will come through eventually. Put differently, this means the State is prepared to initially assume one-half of the cost.

It was only in November of 1966 that the Federal Water Pollution Control Law (P.L. 84-660) was amended to provide for State or Local prefinancing of the Federal share of eligible projects, such prefinancing to be repaid from Federal appropriations in future years.

This provision became the foundation upon which the States, through bond sales, could launch full-scale programs for prompt and total abatement of existing pollution problems.

Now—just 18 months later—H.R. 15907 would remove this provision for all projects started after July 1, 1968.

With prefinancing no longer provided for, pollution control programs would revert to either:

1. Gearing construction each year to the Federal appropriation for that year, or—

2. State and local assumption of the full costs each year over and above that which is paid by the Federal grant in that year.

The new method of Federal participation under the amendments proposed in H.R. 15907 to pay principal and interest on the Federal share of project costs on a contractual basis, would exclude 229 of 336 needed plants or interceptor projects in Michigan from assistance. These projects which are excluded would serve communities neither in Standard Metropolitan Statistical Areas nor in areas with populations of more than 125,000 as required in H.R. 15907. It is precisely these smaller communities that find it extremely difficult to finance pollution control works. It is these 229 projects which, under H.R. 15907, would find Federal aid solely in the annual appropriation for grants—a prospective mere \$8 million for next year. If pollution control is to be achieved within the time that the situation's urgency demands, such aid must either be forthcoming now or there must be some dependable assurance from Congress that it will be forthcoming in the near future under a stabilized policy. Such assurance is clearly implied in the Clean Water Restoration Act.

Besides limiting the new methods of financing to projects for Standard Metropolitan Statistical Areas and areas over 125,000 in population, the bill contains other highly restrictive provisions which raise serious questions as to its usefulness in combating water pollution; particularly the requirements that local units

of government must finance treatment works from service charges, and that their bonds be taxable.

Michigan has moved ahead to plan and prepare a sound program of pollution control and abatement. It is imperative that the States be able to rely upon commitments made by the Federal government without repeated changing of the ground rules.

The construction grant program as defined in the existing P.L. 84-660 was well conceived and should be permitted to remain in effect. If the States can depend upon the Congressional pledges therein contained, they can at long last lift themselves from the morass of decades-old inaction and build a water conservation program worthy of our nationwide interests in this vital resource. If they cannot, and are prevented from maximizing the use of their own resources, the way ahead is dark indeed.

STATEMENT OF LT. GOV. WILLIAM G. MILLIKEN OF MICHIGAN

Senator Muskie—I appreciate very much the opportunity to be here today before the Senate Subcommittee on Air and Water Pollution to testify on S.B. 3206 which would amend the Federal Water Pollution Control Act. As you know, the control of water pollution in our State is very high on our priority list. We appreciate the efforts of the Secretary of the Interior and others to strengthen the partnership between the states and the Federal government in advancing our mutual objectives toward achieving clean water for the Nation.

Pollution control is imperatively important to Michigan because of the great water-resource base on which our economy and way of life is founded. These invaluable resources redound not only to the benefit of Michigan but to the nation as a whole. Just as we have much to gain if our pollution control programs are effective; we have a great deal indeed to lose if they fail.

Water pollution has reached crisis proportions through years of neglect. Some of our inland waters are badly impaired. Lake Erie has been gravely injured; Lake Michigan's renowned excellence is in jeopardy. But the public has at last become keenly alive to the fact that pollution is immensely costly in terms of health hazard, property damage, increased cost of drinking water, destruction of recreational areas, curtailment of sports and commercial fishing and reduced industrial potential.

This is not to imply that we in Michigan have not been making important progress over the past few years, because we *have* been making progress on a broad front, including legislation, enforcements, and construction of sewage treatment facilities. For example:

A 1965 State law overhauled our basic pollution control statute and an alert Legislature increased enforcement budgets, enabling the State Water Resources Commission to sharply tighten its rein on potential pollution problems.

The most massive water clean-up campaign in Michigan's history began in June, 1965, following completion of a 30 month Federal-State study of pollution in the Detroit River, Michigan waters of Lake Erie, and their tributaries.

In 1966, voluntary commitments to restrict discharges were obtained from all 36 waste contributing entities in the Detroit River-Lake Erie area. These commitments involve rigid time schedules ending in 1970 and a price tag of 200 or 300 million dollars.

In June of 1967, the Water Resources Commission adopted water quality standards for Michigan interstate waters, along with a plan for their full implementation and enforcement.

By the end of 1968, *all* of Michigan's inland lakes and streams and those waters shared by other states will be protected by standards of quality designed to maximize their usefulness for all citizens.

Our goal, by 1980, is to effectuate full pollution control in Michigan, with an adequate and dynamic program to maintain it. This will involve constructing 210 new municipal treatment plants, improving 126 existing sewage treatment plants, and building sewers for an additional 3.5 million people.

Costs of this program are estimated at \$1.2 billion, of which \$568 million is for treatment and interceptor facilities and \$641 million is for lateral sewers and storm water control.

If we are to work effectively together, the States must know what share of the huge total costs involved will be borne by the Federal government, and you must know what share of non-Federal costs will be borne by the State.

The payment formula for the \$568 million set forth in the 1966 Clean Water Restoration Act would call for Federal assumption of 50 percent or \$284 million, and State and local shares of 25 percent or \$142 million each.

To provide for full accomplishment of these urgently needed improvements, without the crippling injury of protracted scheduling, Michigan has embarked on a bond issue proposal that will finance full scale attack along the entire pollution front.

To be on the safe side, our bonding proposal assumes that the Congress may not appropriate enough to provide the \$284 million for Michigan but may be expected to appropriate half that amount.

This means the state will be prefunding half of the Federal share by picking it up in our bonding issue in the hope that the Federal money will come through eventually. Put differently, this means the state is prepared to initially assume one-half of the cost.

Thus a state bond issue of \$285 million, plus Federal financing, would pay 75 percent of the cost of building new disposal plants and interceptors, and improving existing plants to provide secondary treatment facilities for all municipalities. This would leave local units of government the obligation of financing the remaining 25 percent of such costs, plus paying 100 percent of the costs of lateral sewers. Yesterday, the Michigan State Senate unanimously approved placing on the November general election ballot a bond issue proposal for not only the \$285 million for plants and interceptors, but for an additional \$50 million for aid in sewer construction.

It was only in November of 1966 that the Federal Water Pollution Control Law (P.L. 84-660) was amended to provide for State or local prefinancing of the Federal share of eligible projects, such prefinancing to be repaid from Federal appropriations in future years.

This provision became the basis on which the States, through bond sales, could launch full-scale programs for prompt and total abatement of existing pollution problems.

Now—just 18 months later—S. 3206 would remove this provision for all projects started after July 1, 1968.

With prefinancing no longer provided for, pollution control programs would revert to either—

1. Gearing construction each year to the Federal appropriation for that year, or

2. State and local assumption of the full costs each year over and above that which is paid by the Federal grant in that year.

The new method of Federal participation proposed in S. 3206 to pay principal and interest on the Federal share of project costs on a contract basis would exclude 229 of 336 needed plants or interceptor projects in Michigan from assistance under the proposed amendments. These projects all would serve communities neither in Standard Metropolitan Statistical Areas nor areas with populations of more than 125,000 as required in S. 3206. It is precisely these smaller communities that find it extremely difficult to finance pollution control works. It is these 229 projects which, under S. 3206, would find Federal aid solely in the annual appropriation for grants—a prospective mere \$8 million for next year. If pollution control is to be achieved within the time that the situation's urgency demands, such aid must either be forthcoming now or there must be some dependable assurance from Congress that it will be forthcoming in the near future under a stabilized policy. Such assurance is clearly implied in the Clean Water Restoration Act.

Besides limiting the new methods of financing to projects for S.M.S.A. and areas over 125,000 in population the bill contains other highly restrictive provisions which raise serious questions as to its usefulness in combating water pollution; particularly the requirements that local units of government must finance treatment works from service charges, and that their bonds be taxable.

Local governments, because of their existing financing commitments or size limitations, would be unable to finance construction of treatment works solely from service charges; they must in fact use a combination of several methods of financing available. Even some of our major communities report an insufficient economic base to finance from service charges. Some 165 smaller communities in Michigan are without either a collection system or treatment works. Under Michigan statute, villages are limited to revenue bonds or general obligation bonds in financing treatment or collections systems. As an example of cost

of a complete system under current conditions, our village of Vermontville (population 768) was required to undertake the following financing—an \$11 a month service charge, a 5 mill tax increase and a \$175 connection fee.

The requirement of taxable bonds would necessitate substantial revision of state statutes dealing with financing of bond issues. Taxable bond rates would certainly be far above the present statutory interest limit on revenue bonds. Oakland County, one of Michigan's largest metropolitan counties, sold \$17 million worth of non-taxable bonds on April 4, 1968, at a rate of 4.93% and this bond issue was backed by the full faith and credit of the county. A small community near Lansing was unable to sell bonds at 6% interest rate. It is our understanding from our finance people that many of the municipal bonds are now purchased by individuals in the 50% income tax bracket. It would require an 8% taxable interest rate to equal a 4% non-taxable rate at this income level.

In short, the impact of S. 3206 not only holds little prospect for advancement of pollution control in Michigan but it gives every indication of seriously impairing our purpose and progress. In its abandonment of the prefinancing provision of P.L. 84-660, the bill negates in large measure the Michigan State bonding proposal, whose prospects for adoption are so clearly established by our State Senate's endorsement. The departure from the stepped-up grant program provided by the Clean Waters Restoration Act of 1966, contemplated in Secretary Udall's letter of March 8, 1968, to the Speaker of the House, suggests an abandonment of less than two year old commitments by the Congress.

Michigan has moved ahead to plan and prepare a sound program of pollution control and abatement. It is imperative that states like Michigan be able to rely upon commitments made by the Federal government without repeated changing of the ground rules.

P.L. 84-660 as it stands is a good law. If the States can depend upon the Congressional pledges therein contained, they can at long last lift themselves from the morass of decades-old inaction and build a water conservation program worthy of our nation-wide interests in this vital resource. If they cannot, and are prevented from maximizing the use of their own resources, the way ahead is dark indeed.

Mr. OEMING. Thank you for granting me the privilege of commenting upon legislation relating to water pollution control upon which you are deliberating. I am appearing in my capacity as executive secretary of the Michigan Water Resources Commission of the Department of Conservation. This commission has been delegated the authority by the legislature to control the pollution of the waters of our State, both surface and underground, including Michigan's portion of the Great Lakes. The position I am expressing here has been approved by Gov. George Romney.

I am a graduate sanitary engineer and am licensed to practice professional engineering under Michigan law. I have had 35 years experience in various capacities associated with the administration of the State's water resources and pollution control programs. Commencing in 1934, I have successively occupied the position of hydraulic engineer, sanitary engineer, and chief engineer for the commission. Since July 1, 1962, I have held the position of executive secretary.

The comments I wish to offer are directed toward H.R. 15907, H.R. 16044, and S. 2760.

We in Michigan very much appreciate your interest and efforts to control water pollution and the many ways in which you have sought to strengthen the partnership between the States and the Federal Government in advancing our mutual objectives toward achieving clean water for the Nation.

The control of water pollution holds very high priority among the objectives of Michigan's executive and legislative branches of govern-

ment. As you may know, Governor Romney has proposed that a \$335 million bond issue to combat water pollution be placed on the November general election ballot. The Michigan Senate and House have acted in impressive accord and with near unanimity in approving the necessary supporting legislation.

Gentlemen, I understand that you have before you several bills dealing with various aspects of water pollution control and the financing of sewage treatment works. Consequently, this statement will be general in nature, and limited to the areas of immediate interest to Michigan.

GRANTS FOR WASTE TREATMENT PLANT OPERATION

First, we endorse the aims of H.R. 16044 as expressed in the preamble of that bill. They are constructive and impressive. The concept of providing grants to assist in improving the performance of municipal sewage treatment plants holds definite prospects of achieving measurable improvements in water quality, substantially in advance of the time when treatment plant modifications or additions can be constructed to obtain the full degree of performance that may be required.

The provisions of the bill would stimulate the upgrading of performance of existing treatment plants with the resultant reduction in loading of the receiving waters with certain pollutants, notably solids, oxygen-consuming substances, and phosphates.

An example of how the provisions of this bill could have an immediate and beneficial effect on water quality is found at Grayling, Mich., a resort community of less than 2,000 permanent residents. The existing treatment facility is inadequate to provide the necessary degree of protection for the famous trout waters of the Au Sable River, particularly during the seasonal influx of tourists and of personnel at a nearby National Guard encampment. Trial full-scale testing at Grayling this past year disclosed that even with the inadequate plant, substantial removal of oxygen demand, solids, and phosphates could be achieved simply by the addition of certain chemicals. Phosphates alone were reduced some 70 percent by such addition. Thus during the period of time it will take to design, arrange the financing and construct the needed plant improvements, a substantial measure of enhancement in quality of the river can be achieved, although at a distinct increase in operating costs. Assistance in paying these costs would be extremely helpful.

The next proposed legislation on which we would like to comment is S. 2760. The pollution control needs which are highlighted by this bill's proposed amendments to the Water Pollution Control Act are serious problems whose solution definitely requires Federal assistance.

LAKE POLLUTION CONTROL

The needs for improved techniques for controlling lake pollution in a State like Michigan, with its numerous inland lakes, are urgent. We endorse the concept of research and demonstrations which would lead to the restoration of these lakes to their full degree of usefulness.

OIL POLLUTION CONTROL

The need for a strengthening and tightening of the legal mechanism for control of oil pollution is also most urgent. The number of incidents of oil pollution from commercial vessels reported to the water resources commission has increased markedly in recent years. These incidents have ranged from the most serious—the foundering of an oil barge in lower Lake Michigan, with attendant massive fouling of more than 200 miles of beaches during the next summer—to the nearly continuous summertime complaints of swimmers smeared by tar-like fuel oils on our Great Lakes beaches.

The growing rate of complaints has paralleled the increase in number of oil-fueled vessels on the Great Lakes. These have been vessels engaged in lake commerce as well as those in ocean commerce. Nearly all vessels inbound into the Great Lakes through the St. Lawrence Seaway are oil-fueled.

It is apparent that the amendment of the Oil Pollution Act by the Clean Waters Restoration Act of 1966, Public Law 89-753, has been inadequate to cope with the problems we are experiencing.

There are two aspects of the proposed amendments which are essential for adequate oil pollution control: One, strengthening the enforcement provisions by removing the words "grossly negligent" and "willful" in the definition of the word "discharge; and, two, creating a revolving fund to finance clean-up measures under critical conditions.

A pollution control administrator with some 35 years of experience I can personally testify that the requirement of proving "negligence" or "willfulness" provides almost a guarantee of escape from the penalties of a polluting act. Much of the fouling of eastern Lake Michigan's shoreline from the previously mentioned oil barge foundering could have been prevented had there been provisions and funding for emergency cleanup.

We do not agree with the expansion of Federal authority in one area of oil pollution control, that of shore installations. Vessels engaged in interstate commerce should and must be under Federal authority, but control of oil pollution from shore installations should remain the primary responsibility of the State. To separate oil pollution control within a State on the basis of whether the installation is adjacent to navigable or nonnavigable water can only lead to jurisdictional confusion and fractionating of effort. The Michigan interstate water quality standards require that there be "no visible film of oil, gasoline or related materials, and no globules of grease" resulting from a discharge into Michigan waters. The Secretary of the Interior has approved that portion of the standards containing this provision. Michigan statutes are fully adequate to enforce these standards and it is certainly the intent of the water resources commission and its member agencies to do so.

Mr. WRIGHT. Mr. Oeming, at this point may I ask this: Do you feel that the standards that the State of Michigan has created are fully adequate within the State of Michigan? And certainly that includes the installations that might be on shores. Has your set of standards been approved by the Federal Water Pollution Control Administration?

Mr. OEMING. Not entirely, sir. The last word I had, there were some conditions on the standards yet, but not this portion of the standards, Mr. Chairman.

Mr. WRIGHT. This portion of the standards you think has been approved?

Mr. OEMING. There has been no question raised about this portion of the standards.

Mr. WRIGHT. You anticipate no major difficulty in arriving at an agreement with the Water Pollution Control Administration?

Mr. OEMING. No, not at this point in time.

Mr. WRIGHT. The reason I asked is because this point you have raised is one a number of people have been raising, that it would be somewhat inconsistent for the Federal Water Pollution Control Administration to require the States to set certain standards, and then the States, with certain standards, and then for the Federal agency to superimpose its own jurisdiction over a portion of those installations lying within the States and falling under the standards of the States that they have approved.

You declare you think it would result in jurisdictional confusion and fractionating of effort.

Can you see any reason why shore installations should be treated differently under the law than nonnavigable rivers?

Mr. OEMING. They are covered now under the present act and water quality standards the States have adopted. Particularly in Michigan's case, these standards apply to discharges into interstate waters which are navigable waters, like the Great Lakes.

Now, the implementation plan has been submitted and approved so far as I know, and so I see no reason for another layer of government to be imposed on this particular area of activity.

Mr. WRIGHT. I see. Mr. Oeming, the Chair is going to find it necessary to recess briefly in order that I may vote on the bill that is currently being voted on in the House.

(Discussion off the record.)

Mr. WRIGHT. Very good timing. You may continue your statement. (At this point Mr. McCarthy assumed the Chair.)

Mr. OEMING. We are encouraged by the bill's authorization for the Secretary of the Interior to enter into agreement with States in the enforcement of the act. Such agreements could greatly strengthen the act's enforcement provisions.

POLLUTION BY COMMERCIAL VESSELS

One aspect of pollution with which we are experiencing increasing problems is the indiscriminate overboard disposal of garbage, dunnage, and trash from vessels engaged in commercial navigation. The detrimental effects of these practices grow increasingly worse with the use of plastics and other indestructible containers. Public and private costs in the removal of this debris from Great Lakes' beaches is becoming very substantial. The esthetic damage is even more serious.

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The payment formula for the \$568 million set forth in the 1966 Clean Water Restoration Act—Public Law 89-753—would call for Federal assumption of 50 percent or \$284 million, and State and local shares of 25 percent or \$142 million each.

To provide for full accomplishment of these urgently needed improvements, without the crippling injury of protracted scheduling, Michigan has embarked on a bond issue proposal that will finance full-scale attack along the entire pollution front.

To be on the safe side, our bonding proposal assumes that the Congress may not appropriate enough to provide the \$284 million for Michigan but may be expected to appropriate half that amount.

This means the State will be prefunding half of the Federal share by picking it up in our bonding issue in the hope that the Federal money will come through eventually. Put differently, this means the State is prepared to initially assume one-half of the cost.

It was only in November of 1966 that the Federal Water Pollution Control Law—Public Law 84-660—was amended to provide for State or local prefinancing of the Federal share of eligible projects, such prefinancing to be repaid from Federal appropriations in future years.

This provision became the foundation upon which the States, through bond sales, could launch full-scale programs for prompt and total abatement of existing pollution problems.

Now—just 18 months later—H.R. 15907 would remove this provision for all projects starting after July 1, 1968.

With prefinancing no longer provided for, pollution control programs would revert to either: One, gearing construction each year to the Federal appropriation for that year, or, two, State and local assumption of the full costs each year over and above that which is paid by the Federal grant in that year.

The new method of Federal participation under the amendments proposed in H.R. 15907 to pay principal and interest on the Federal

share of project costs on a contractual basis, would exclude 229 of 336 needed plants or interceptor projects in Michigan from assistance. These projects which are excluded would serve communities neither in standard metropolitan statistical areas nor in areas with populations of more than 125,000 as required in H.R. 15907. It is precisely these smaller communities that find it extremely difficult to finance pollution control works.

Parenthetically, here, Mr. Chairman and members, in Michigan we have 10 SMSA areas. These encompass some 14 counties out of a total of 83 counties in Michigan.

It is these 229 projects which, under H.R. 15907, would find Federal aid solely in the annual appropriation for grants—a prospective mere \$8 million for next year. If pollution control is to be achieved within the time that the situation's urgency demands, such aid must be either forthcoming now or there must be some dependable assurance from Congress that it will be forthcoming in the near future under a stabilized policy. Such assurance is clearly implied in the Clean Water Restoration Act.

Besides limiting the new methods of financing to projects for standard metropolitan statistical areas and areas over 125,000 in population, the bill contains other highly restrictive provisions which raise serious questions as to its usefulness in combating water pollution; particularly the requirements that local units of government must finance treatment works from service charges, and that their bonds be taxable.

Michigan has moved ahead to plan and prepare a sound program of pollution control and abatement. It is imperative that the States be able to rely upon commitments made by the Federal government without repeated changing of the groundrules.

The construction grant program as defined in the existing Public Law 84-660 was well conceived and should be permitted to remain in effect. If the States can depend upon the congressional pledges therein contained, they can at long last lift themselves from the morass of decades-old inaction and build a water conservation program worthy of our nationwide interests in this vital resource. If they cannot, and are prevented from maximizing the use of their own resources, the way ahead is dark indeed.

CUTOFF OF PREFINANCING PROVISION

Mr. McCARTHY. Well, thank you very much, Mr. Oeming.

I would like to ask you to expand your statement on pages 6 and 7. Now, you say that this prefinancing provision was the foundation on which States like Michigan could launch fullscale programs for prompt and total abatement of existing pollution problems; that now, 18 months later, H.R. 15907 would remove this provision for all projects started after next July 1.

Now, you say here, down in the last paragraph: If we were to remove that prefinancing provision, this would exclude 229 of 336 needed plants.

I wonder if you would enlarge on that? Why would this happen?

Mr. OEMING. Well, taking the bill as a whole, 229 of our projects would not fall within the standard metropolitan statistical areas, so they would not qualify for this bond funding proposal.

Now, if they do not qualify here, then they must go back to the original grant program, which is going to be far deficient to meet the needs within a reasonable period of time.

Mr. McCARTHY. Right.

Mr. OEMING. And without removing the provision for remunerating—that is, the advancing of funds by municipalities—if that is taken out, I just question where we are ending up here. We would be removing the incentive to go ahead here.

Mr. McCARTHY. You have a sympathetic listener in me. I am from New York.

Now, what would you think of something that I broached with the Secretary this morning of keeping the prefinancing provision in along with embarking on the new bond procedure and giving States an option?

Mr. OEMING. I think this holds some definite promise, provided that the authorization in the present bill still remains for the grants. And I am not saying that we expect any appropriations be made here up to the full amounts of the authorization within the 4 years; I am saying that if Congress can't do this, they can attenuate it, fine, but this provides a foundation upon which the States can set up a funding program that will make certain that pollution control proceeds as promptly and expeditiously as possible.

Mr. McCARTHY. Do you know how many States have the programs underway that are based on the prefinancing provisions?

Mr. OEMING. Well, I can name some of them, sir. I am pretty sure Oregon has a bond issue set up, with Wisconsin doing some prefinancing out of current revenues, as is Indiana; Illinois is proposing a bond issue this fall also, predicated on the same assumptions here. I believe Pennsylvania has a bond issue and I think Ohio is working on one.

Now, those are the ones I am directly——

Mr. McCARTHY. New York?

Mr. OEMING. I know New York has been in the business a couple of years.

Mr. McCARTHY. Michigan? Maine?

Mr. OEMING. Maine. Yes. I think that is correct.

Mr. McCARTHY. I think you have hit on the point that at least I think is important, and that is that the States you have enumerated are those which have pioneered, which are moving ahead and who are using State revenues to attack this problem. They went ahead on the assurance that the prefinancing provision was in the law. Now 18 months later they propose to change the ground rules and, in effect, penalize those who have moved out ahead.

Mr. OEMING. I do not say necessarily penalize, but disrupt their programs that are now just beginning to get underway.

Mr. McCARTHY. I think, for the record, we might just cite the following letter received from the town of Orono, Maine, which is where the University of Maine is located, addressed to the chairman of the committee, the Honorable Representative Blatnik, where it states here:

The Legislature of the State of Maine took a giant step in the last Special Session to enact a Prefunding Act to assist communities in going ahead with their already prepared plans for pollution abatement. One of the conditions of this State Act is that the Federal government, when funds are available, reim-

burse the State the amount the Federal share, which the State had agreed to pay in advance as part of its prefunding. I'm very concerned that the proposed Act before Congress may impair the State's position in funding local construction by months if not years. In that much confusion has resulted in the terms of the proposed act, I would appreciate answers to these questions as soon as possible.

Signed "Forest M. French, Orono Town Manager."

Adding to that list that we went through, would you like to add New Hampshire?

Mr. OEMING. Yes, sir; that is correct.

Mr. McCARTHY. And Vermont. I believe you mentioned Pennsylvania.

Mr. OEMING. Yes, I did.

Mr. McCARTHY. Massachusetts?

Mr. OEMING. Massachusetts; yes, sir.

Mr. McCARTHY. So I think we enumerated about a dozen States there that have gone ahead with the prefinancing provision as the foundation.

Mr. OEMING. That is correct, sir.

Mr. McCARTHY. Mr. Denney?

PLANT DESIGN AND OPERATION REQUIREMENT OF H.R. 15907

Mr. DENNEY. Mr. Oeming, in your testimony, it looks like you made a careful study of H.R. 15907. On page 8, subsection (g), (1), it says:

The design and operation plan for treatment work shall be adequate in the judgement of the Secretary to insure the maximum efficiency in operation.

Do you have any idea what that means?

Mr. OEMING. Yes. Well, I have an idea what it means and if I interpret this correctly, I think it could be very well imposing another period of delay in this whole process of getting pollution abated.

Here we have a situation, sir, where the States have gone sled length to adopt water quality standards and plans of implementation, and if those are to meet anything, the States must provide the kind of treatment, require the kind of treatment of the municipalities to meet those standards.

Now, I am concerned about the necessity for another set of approvals on these designs and operations.

Now, it is true that under the Federal programs presently, the designs of the treatment facilities, the plans go to the Secretary of the Interior after they have been reviewed by the States and certified by the States as being adequate.

We have had no trouble with this, but now we get into this operating problem here and I just wonder how the Federal Government can get into the problem of operating a facility of a town of 2,000 or 5,000 people, or in the metropolitan statistical area. There are some small towns.

PROSPECT OF INCREASING FEDERAL CONTROL SEEN IN PRESENT PROPOSALS

Mr. DENNEY. This morning I asked the Secretary a question, it looks to me like the thrust of this law is to put more and more control at the Washington level, and yet the basic concept of the act was to preserve

to the States the right to determine the pollution of the waters that come through their State.

Now, do you feel that by the different provisions of this law we are now considering, that it is going to delay the abatement of pollution and also put more Federal control in Washington?

Mr. OEMING. Well, first of all, I feel that this could be considered a breach of the policy statement in the Federal Water Pollution Control Act, where it states that the primary responsibility rests with the States.

Well, there is not much primary responsibility left when we take the design and the operation of the treatment facilities out of the States. I do not know what they are going to be doing.

Mr. DENNEY. Well, for example, provisions in this bill require in effect that any industrial, public or private development which would constitute a new source of pollution or increased pollution to high-quality water must contain a program designed to provide the highest and best degree of waste treatment available under existing technology.

I can see where you could spend several months arguing with the Secretary as to whether or not you have reached the highest and best degree of technology. Can you see the same problem?

Mr. OEMING. Well, I think certainly it is not inconceivable that this can happen.

Mr. DENNEY. Of course, our purpose is to try and abate this pollution.

Mr. OEMING. Promptly.

Mr. DENNEY. I believe that is all I have.

Mr. MCCARTHY. Thank you, Mr. Denney.

Thank you, Mr. Oeming, for a very important contribution.

Mr. OEMING. Thank you, sir.

(At this point Mr. Wright resumed the Chair.)

Mr. WRIGHT. Mr. Joe G. Moore, Jr., and Mr. David Finnegan, if you would return, we would like to ask a few more questions relating the position of the Department of the Interior.

The committee appreciates your patience in being with us this morning and returning again this afternoon. The committee has a number of questions that were not able to be answered because of the time involved this morning concerning the testimony of Secretary Udall.

INTERIOR'S RELATIONSHIP WITH THE STATES IN THE STANDARDS-SETTING PROCESS

First of all, how would you characterize the relationship between the Department and the various States with respect to the firming up and finalizing of an acceptable standard?

Do you think the relationship is amicable and friendly, or do you think you have had major difficulties?

**STATEMENTS OF HON. JOE G. MOORE, JR., COMMISSIONER FOR THE
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, DE-
PARTMENT OF THE INTERIOR, AND DAVID FINNEGAN, ASSIST-
ANT LEGISLATIVE COUNSEL, DEPARTMENT OF THE INTERIOR—
Resumed**

Mr. MOORE. Mr. Chairman, I will have to comment that by virtue of my recent prior association, there have been, obviously, discussions with the States with regard to the water quality standards. The Secretary indicated this morning that some 31 of these sets of States standards have been approved by the Secretary, some with exceptions.

There are presently some seven State standards under detailed and close review at the highest level within the Department of the Interior. The standards of the remaining States, roughly some 12 States and three territorial standards, represent, as you might expect, those in which the areas of disagreement have been wider than in some that have already been approved.

However, it is, I think, very probable, with the exception of the resolution of the addition of what was referred to this morning as the nondegradation statement, that the majority of the States standards can be approved within a reasonable period of time.

Now, I exclude the question of nondegradation statement, because this issue was resolved by the Secretary late in January and there have been four specific submissions of nondegradation statements that are acceptable or have been accepted by the Secretary, whereas there are perhaps some four or five other State statements that are under consideration within the Department. There are perhaps two States that have indicated at this point in time officially that they have reservations about adopting such a statement. And so I would anticipate that in terms of the nondegradation statement, it will take some time yet to resolve the language questions with regard to the acceptable statements in this area.

Mr. WRIGHT. So you have seen it from both sides. You have been directly involved, of course, with the water pollution control activity for the State of Texas and, more recently, in the Department position which you now hold.

Do you consider the machinery created in the 1966 law with respect to the creation of standards by the States and their approval by the Department of the Interior to be adequate machinery? Do you think that is working out pretty well?

Mr. MOORE. Well, I think there is no doubt that the Water Quality Act of 1965, which set the stage for the adoption of the water quality standards by the States and their submission to the Secretary of the Interior, has accelerated the activities at the State level in terms of water pollution control. I think the record will reflect this.

I think the procedure for requiring hearings on proposed water quality standards has done a great deal to secure understanding among the people of the country generally, first as to the quality problems that are faced by them in their respective States, and then some measure of the magnitude of the task in terms of improving the water pollution control programs within the State.

There has undoubtedly been a continuing, sometimes controversial, dialog between the States and the Federal agencies.

I think the concept that must guide all of those involved in the water pollution control field is that the full resources of all levels of government—Federal, State, and local—must be concentrated upon the problem if we are to achieve measurable results within any reasonable time framework.

Now, despite the fact that the discussions with regard to language—which, in reality, does not improve in itself the quality of the water, despite the discussions with regard to the language contained in various policy statements in the water quality standards, I would have to say overall that, in my view, substantial progress has been made in the water quality standards setting process.

I would hope that the States and the Department of the Interior can resolve the unresolved questions in water quality standards as rapidly as possible in order that the full resources of the Federal and State governments, as well as local governments, can be concentrated in achieving the objectives—which is really all the standards at this time are contemplated in the water quality standards setting process.

Mr. WRIGHT. The Department is not at this time seeking any change in that relationship as set forth in the earlier act, is it?

Mr. MOORE. Not except insofar as the foreseeable impact of the unavailability of the full authorization for construction grants might have upon the implementation schedules contained in the water quality standards and this has led us to this financing proposal that is before the Congress now.

This can materially affect the implementation schedules and the target dates of roughly 1972.

Mr. WRIGHT. Yes. Unless money is available, of course, they cannot achieve their objectives with the rapidity that they had anticipated. But the question is directed primarily to the machinery of State-Federal relationship.

You do not see any reason for asking for a change in that, do you?

Mr. MOORE. No, sir; I do not.

Mr. WRIGHT. Now, with respect to the big matter of financing, I think we will have an opportunity to discuss that further with Secretary Udall sometime next week and perhaps we can spare you a lengthy discussion of that at the moment.

RESPONSIBILITY FOR OIL RELEASES

Concerning expansion of the oil pollution control capacity of the Government, it seems to me more that what we really need is some way to move in rapidly when we discover that some of this oil had been released, and get it cleaned up before it does irreparable damage to regions, beaches, and other areas. Additionally, perhaps we need some assurance of economical liability, responsibility on the parts of these vessels that are releasing this oil.

Of course, many of the oil slicks that have been discovered have not been traceable to the site source. You know, of course, the Navy has identified more than a hundred sunken ships that dot our coastlines, some of which many contain oil, some of which oil may be released at any undisclosed future moment as the bulkheads give way, the rust

works its way through the tanks? There is not much that we can do in a situation of sunken ship—most of them sunk during World War II—to require anybody to indemnify the Government from the cost of cleaning it up, is there?

Mr. MOORE. No, sir; there would not be in those cases unless there were some funds provided for that purpose.

I do understand, and this is prior to my association with the Department of the Interior, but I do understand that there has been an examination—I think largely at the instigation of a member of this committee, Congressman Howard—of the large number of sunken vessels along the eastern coast—I do not know how extensive this was—to determine whether or not these sunken vessels did in fact actually contain oil after this period of time, and I assume the Coast Guard will be able to speak to this point later. But it is my understanding that in most instances, there was no oil found in these sunken vessels. It had during the interim dispersed or leaked.

One of the things that is commonly overlooked in talking about oil is that it does not remain in its released state indefinitely, and it can be in the process of time broken down and it can be consumed by minute organisms so it does disappear. It is entirely possible that much of the oil that was in these sunken tankers that were sunk during World War II has been largely dissipated in this process.

There is a problem, however, of identifying the source of oil specifically. One of the procedures under discussion for this purpose is what is being referred to as the tagging of oil; that is, the classification of oil in various cargoes and its identification on board vessels, so that if it is discovered loose in the ocean, then the source can be at least narrowed if not necessarily pinpointed.

MANDATORY INSURANCE PROPOSAL

Mr. WRIGHT. What thought has been given to some layman for requiring all ships of the United States and any foreign ships using U.S. harbors to carry insurance to indemnify this particular kind of damage?

Mr. MOORE. I will have to say, Mr. Chairman, at this point, I do not know what has been done in this particular area.

Mr. WRIGHT. Might not this be a pretty good idea to require all ships, vessels, that contain a sufficient quantity of petroleum matter, or other pollutants, for that matter, to enter into some sort of insurance program whereby there would be knowledge and certainty that you would somebody to whom we could hit to recoup the cost the Government would incur in cleaning up the beaches, the oil from the waters?

Mr. MOORE. Mr. Finnegan tells me there was some examination of this particular question with regard to insurance. If I may, I will let him speak to that particular question.

Mr. WRIGHT. Sure. Thank you.

Mr. FINNEGAN. Mr. Chairman, there is very little discussion I should not say—we did some looking into the problem, but what we could find out is the insurance companies who might undertake to write this type of risk wanted to limit their liability, which might cause difficulties if you had a large spill of oil which was pretty expensive. They still wanted to limit their liability to the value of the vessel.

If that vessel had been broken up, its value would be nominal under the present law.

Mr. WRIGHT. Notwithstanding, it would be some help, would it not?

Mr. FINNEGAN. Yes, it would.

Mr. WRIGHT. It might be thoroughly adequate help in many cases?

Mr. FINNEGAN. That is right.

Mr. WRIGHT. It strikes me as something we might think about so long as we are concerning ourselves with this particular phase of the overall pollution problem.

PROPOSED APPLICATION OF OCS REVENUES TO OIL POLLUTION CONTROL

Now, certainly I believe that we must do everything within our power to strengthen the capacity of the Federal Government to clean up any such problems rapidly, to require the ship or vessel that is the cause of it to pay for it, the owner of that vessel, and otherwise to develop such research and other controllants as may be developed to improve our technology.

I understand the Government receives about a billion dollars a year in leases for offshore drilling. I wonder if it could be a feasible proposition to dedicate some portion of that money to this particular fight against pollution by oil from vessels and otherwise in the offshore areas?

Mr. FINNEGAN. Mr. Chairman, I think you are referring to the Outer Continental Shelf. I believe the United States does get under the leasing program revenues.

Mr. WRIGHT. That is right.

Mr. FINNEGAN. I might add, in a recent report by the Senate Interior Committee, the Department was asked to look into the possibility of dedicating these revenues, or a portion of them, for this purpose.

The bill that you have before you, both the Senate-passed bill and the companion, H.R. 15906, provides for the establishment of a fund, revolving fund, and for the payment of direct appropriations for this purpose.

If you use Outer Continental Shelf revenues, that would be a continuing source of revenues. You would probably be building up a large amount of money in the fund that couldn't be used for any other purpose and whether or not he would have oil spills often enough that would use this money might be questionable and we would hope that they would not occur on a rapid basis.

PROPOSED FEDERAL CONTROL OF OIL DISCHARGES FROM SHORE INSTALLATIONS

Mr. WRIGHT. There is one thing. The previous witness, Mr. Oeming, who is the executive secretary of the Michigan Water Resources Commission, made a statement which I expect you heard. This statement seems to reflect the feelings that we hear from most States. He says we do not agree with the expansion of Federal authority in one area of oil pollution control, that of shore installations. He said vessels engaged in interstate commerce should and must be under Federal authority and that is understandable. But control of oil pollution from

shore installations should remain primarily the responsibility of the State.

He went on to recite Michigan quality standards and their requirement that no visible film of oil, gasoline-related materials, or globules of grease discharged into those waters should be allowed in Michigan.

I daresay most of the States have standards of similar type.

Why do you think it is necessary for the Federal Government to get into the business of controlling shore installations, since they are already controlled by State law and must be under our Water Pollution Control Act?

Mr. MOORE. Mr. Chairman, the concern with shore installations is primarily the question of the cleanup of a spill into the water from a shore installation.

Now, these spills, as you might expect, can vary all the way from relatively insignificant—a thin film of oil, as referred to there, to a rather substantial quantity where you have shore installations that border on bodies of water. And the major thrust of this proposed legislation, insofar as the Department of the Interior and pollution aspects of spills are concerned, is to secure an early cleanup, so that the damage is minimized, and depending upon the volume of the spill, the larger the spill the more risk and the more urgency there is to its cleanup.

Now, it may be that the State jurisdictions have sufficient capability to deal with relatively small spills; but, in terms of some of the spills that we have experienced, and particularly in terms of the spill at San Juan, though that was from a vessel, had you had anywhere near that quantity of oil released from a shore installation because of an accident of any conceivable kind, there is a necessity to do the cleanup work immediately.

Now, in terms of the water quality standards and implementation plans associated with them, the procedures for treating violations of the standards, or the abatement of pollution that occurs in violation of the standards, is spelled out in the statute and takes at least a period of 6 months. At the point of time at which the problem arises, we are not concerned so much with who did it, who is the violator, as we are concerned with the immediate problem of cleanup. And the concern is for massive spills from shore installations.

Now, when I say "massive spills," of course this is a question of degree, and you can always say down to a certain amount it obviously could be handled elsewhere. But in terms of what we may face in spills, in terms of the volumes that are being stored along watercourses, you could have a rather substantial spill from a shore installation and have the same effect as if it had occurred in a navigable water right offshore.

Mr. WRIGHT. You are probably right, you could, but is it not actually true that those result primarily not from vessels?

Mr. MOORE. Yes, those would be more serious ones in terms of large quantity.

There is nothing to preclude the Secretary, under the legislation, to, in effect, assure the rapid cleanup to which I referred by arrangements with the States, so that you would have a rapid cleanup.

Mr. WRIGHT. Yes. You already had that authority, didn't you?

Mr. MOORE. You can say that we had the authority in terms of the technical assistance program of the Federal Water Pollution Control

Administration, which depends upon a request from the State, and then you have what can be an even more critical problem, and that is the question of funding.

Mr. WRIGHT. Since there have been many cases apparently in which—like the one in Honolulu this morning—there is not any way immediately to know the force of the encroachment, it is going to be necessary, is it not, for the Federal Government to possess the authority and, fast, to effect an immediate cleanup, and then be responsible to find the culprit for reimbursement of costs?

Mr. MOORE. This is correct.

Mr. WRIGHT. So that being the case, with that kind of authority to effect a cleanup, I fail to see the need for expanding the Federal authority of control and jurisdiction within the States to their installations that lie along the shores of these waters.

Mr. MOORE. of course, this leads, in terms of effecting the cleanup to the question of money: Who pays for it? And it leads you to the question of whether or not this should be a cost borne by the taxpayers generally of the Nation, or whether you should attempt to recover the cost. And when you come to the question of recovering the cost, you come up against the question of fixing liability, so that the chain of who shall pay—

Mr. WRIGHT. Does the Government not possess authority under the law to go into hearings, into court if necessary, to recover costs from people who have violated the existing law by releasing pollutants?

Mr. MOORE. These costs can be recovered in the sense that the United States would be the one that would recover costs incurred by the various agencies involved in this area. But the costs so recovered accrue to the general credit of the Treasury and not, as proposed here, to the revolving fund concept that is embodied in this legislation. Those who are responsible for the spills would be the ones ultimately paying for them.

Mr. WRIGHT. Of course, a revolving fund for appropriation.

Mr. MOORE. But this again would depend upon an appropriation in advance that might or might not be enough to accommodate the spills that you had during the course of that particular year. It is a question of how you pay for the costs, and the concept embodied here was it should be a revolving fund. This seemed to be the easiest way to approach it.

Mr. WRIGHT. Departments and agencies are constantly coming before Congress to request appropriations to accommodate needs for various services that have found their expenses are higher than they anticipated.

I do not really comprehend the need for your invading the States under the jurisdiction that we gave to them, and under the requirements put on them already to come up with meaningful control measures, with an additional Federal control inside the States.

Mr. MOORE. You get back again, though, to the fundamental question as to whether or not you can achieve the rapid cleanup. As I say, you can get the cleanup in the small spills, but you are always faced with the prospect of what do you do if you have one of substantial magnitude within what the States would have to say is a State's jurisdiction in terms of the water bounding it. Let's take Lake Michigan, for example. If you had a massive spill from a tanker as con-

trusted with a massive spill from a shore installation, the net effect in terms of the waters in Lake Michigan would be the same, so that you still are up against the question of achieving early cleanup.

Mr. WRIGHT. I think we are agreed, you need the authority to achieve an early cleanup, and in addition, you need the authority to find out who did it if you can and try to get the money from them. But I still fail to see why you need this additional expansion of Federal authority within the State areas.

Do you contemplate under this bill that shore installations would be installations along the ocean, installations along the lakes, installations along the navigable streams, rivers, all of those? Which ones of those?

Mr. MOORE. It is along navigable waters and the territorial waters of the United States.

Mr. WRIGHT. All of the navigable rivers of the United States? Anybody who has any kind of an installation on that river that uses oil of any kind, any industry, any type of operation that uses any oil, you would come in and have your controls over them, right?

Mr. MOORE. Only if you had a spill on the waters.

Mr. WRIGHT. I understand that. I understand that.

I wonder why you seek this authority in respect to oil? I wonder why you are not seeking it in regard to these other pollutants your industrial waste profile series deals with? You have a study relating to blast furnaces, steel mills, one relating to motor vehicles and parts, one relating to paper mills, one relating to textile mill products, one relating to leather tanning plants, one relating to the meat products, one relating to plastic materials and rosins. All of these things, as well as other things, are pollutants of the waters, and they cannot send on to the waters materials that need to be cleaned up and taken out of the water.

HAZARDOUS SUBSTANCES OTHER THAN OIL

Why do you limit your request to oil? Petroleum products?

Mr. MOORE. Well, actually H.R. 15906 would provide the Department similar authority with respect to other hazardous substances. This would be a matter of the degree of hazard that is involved in terms of the immediate effect that can follow the discharges.

Mr. WRIGHT. How would that hurt you if you go into the courts with the statute that says oil and other hazardous substances? What is going to be the definition of a hazardous substance?

Mr. MOORE. Well, the definition is found in the proposed section 21(a) of the act:

Any substance of any description or origin, other than oil, which, when discharged from a vessel or shore installation into any waters in substantial quantities, presents, in the judgment of the Secretary, an imminent and substantial hazard to the public health or welfare.

Mr. WRIGHT. That leaves it up to the Secretary to decide whatever he says is hazardous substance?

CORPS OF ENGINEERS AUTHORITY RESPECTING DEPOSITS IN NAVIGABLE WATERS

I am told by a person this morning that the Corps of Army Engineers has billed a chemical company operation \$54,000, on a basis

of 78 cents per cubic yard, for materials that they have released into the waters. Are you familiar with that?

Mr. MOORE. No, sir, Mr. Chairman, I am not familiar with that.

Mr. WRIGHT. Suspended solids were released over a period of 1 year into the waters. We received a telephone call from the company that just received the bill from the Corps of Army Engineers saying they owed them \$54,000 for solid waste materials that had been released into the river, and the Corps of Army Engineers claims to have authority to bill them for dredging these solids from navigable channels under the 1899 Rivers and Harbors Act.

Why, under the same existing law, does not the Department of the Interior possess that authority?

Mr. MOORE. Without knowing the particular circumstances, I would assume this is probably under the jurisdiction of the Corps of Engineers in terms of navigation hazards. That is all the offhand relationship that I could see in that particular instance.

Mr. WRIGHT. Wyandotte Chemical Co., the McLouth Steel Co., Pennsalt Co., under the 1899 statute, has been assessed several thousand dollars by the Corps of Army Engineers for their share of the costs of dredging these solids out of the water. Wyandotte Chemical, which apparently disposed of most of the material, originally proposed to pay a cost share of \$58,000 for removing the solids from the rivers. However, since that original contract, Wyandotte has apparently made promise to clear up its operations for a figure now of \$25,000. But the corps is charging Wyandotte. This is still in negotiation apparently and could be altered.

The district engineer has contacted two other companies through correspondence and has asked them to pay certain sums. They are still in negotiation with the corps.

The basis for these cost sharing charges for dredging is cited by the Corps of Engineers as being a Supreme Court decision in the case of *U.S. v. Republic Steel*, handed down in 1960, in which decision the Supreme Court ruled that industrial deposits were within the meaning of the 1899 act. The charge is based on an effluent suspended solids loading and is in effect an effluent fee. The corps claims they do not have to prove these solids were actually removed or dredged from navigable channels.

In the face of a Supreme Court decision of that type and on the basis of it being applied by the U.S. Corps of Engineers, I am worried if there might not be authorization under existing law?

Mr. MOORE. From what I understand of the corps authority it is exercised when there is some effect upon navigation. And in view of the fact this refers to dredging, I would assume that they are dredging material which they could identify as having been discharged by these particular industries into a water course, and thereby affecting the navigation of that water course. Because the authority of the corps, as I understand it, is generally exercised with respect to the navigability of the water.

Mr. WRIGHT. Do you have a specific citation on that, Mr. Finnegan?

Mr. FINNEGAN. That would have been the Refuse Act of 1899, I believe is what they are referring to.

COVERAGE OF SHORE INSTALLATION PROVISION

Mr. WRIGHT. Now, in Maine recently, an incident on which the beaches were fouled by oil seepage, everybody says there is a ship out there, for us to do something. Finally, it was discovered to be a school which had some oil that was released inadvertently when the oil tank at the school rusted through and got into the sewer system and floated down into the ocean.

What would be the position of the Department of the Interior in that respect? Is that school a shore installation?

Mr. MOORE. Well, whether that is a shore installation——

Mr. FINNEGAN. It would have to be located in or adjacent to the navigable waters under the bill as S. 2760, as passed by the Senate.

Mr. WRIGHT. How adjacent is "adjacent"?

Mr. FINNEGAN. We would look upon it as located fairly close to the water, probably within a quarter of a mile, and natural courses.

Mr. WRIGHT. Quarter of a mile?

Mr. FINNEGAN. I would not want to state categorically that would be the case, sir. I think you would have to look at each instance. But many oil tank firms, and so forth, such as in New Jersey, are located close to the water's edge.

Mr. MOORE. These installations have to be used in the handling or processing of any kind of matter which is adjacent to navigable waters. In other words, it has to be an installation designed or intended to be used for processing the substance that is involved.

Mr. WRIGHT. Yes, Mr. Denney.

Mr. DENNEY. Mr. Moore, you made the statement, I believe, 31 States had cooperative water pollution standards submitted and approved.

It seems to me that this committee must write a law that the States can live with. And, of course, obtain the objective of cleaning up the pollution of our streams.

IMPACT OF PROPOSED CONTRACT PROGRAM ON RURAL AREA NEEDS

I am concerned, again, about the fact that the impact at this time seems to be on the metropolitan area. If we are ever going to solve the problems of the cities, we are going to have to start dispersing the people, and it looks to me like some of the thrust of this law is to put the biggest expenditure of homes in the metropolitan areas and leave out the rural areas and the small towns, which were what the original act had in mind to try and do something so that they could clean up their streams and have proper sanitary facilities.

Now, do you have any ideas as to whether or not these amendments we are considering will protect the rural areas in any way?

Mr. MOORE. Well, let me say that in terms of the cash construction grants program, the \$225 million that has been requested of the Congress this year, the distribution of these funds would be as provided under the current statute, and such sums as must be appropriated by Congress in future years would still be governed by the distribution.

The question has obviously been raised as to whether or not the proposed contracting procedure or debt financing procedure as outlined can be utilized by smaller cities.

Now, there is nothing magic about the 125,000 limitation. This figure is one that has appeared in prior statutes.

The program, as I indicated this morning, had initially been intended for, and so designed, as to be used largely by the smaller cities, or at least those up to the standard metropolitan statistical area size, and continued in that vein from its inception in 1957 to the amendment in 1966.

I think one of the things we need to remember is that the plants that have been constructed during this period are not going to be subject to reconstruction at this stage in time. They may require expansion. But certainly it was not intended in the course of developing this legislation to cut off the needs of the smaller community. Because the initial statute, until 1966, did make the program less attractive to the larger metropolitan areas, and because the problem of municipal waste treatment facilities is concentrated where the people are, there was some feeling that we should accelerate the availability of these funds for the metropolitan areas.

Now, one of the questions, quite frankly, that has not been raised, and to which we have given some attention since this particular issue was raised, was the fact that within standard metropolitan statistical areas—this is particularly true in the chairman's home State—there are quite often cities of smaller size than the 125,000 or other than the 50,000. And certainly in terms of achieving an adequate waste treatment system, on a basis broader than one city, the intent was in these standard metropolitan statistical areas, to provide the smaller communities assistance as you would the major city within that standard metropolitan area.

I want to emphasize again there was no intent here to cut off the needs of smaller communities.

Mr. DENNEY. As a matter of fact, though, the Secretary asked for a contract guaranteed bond arrangement, so that unless it is a metropolitan area, the chances are that the smaller communities will not be able to finance the matter. So they will have to go to their program, will they not, and not having adequate financing, then that program will slow down?

Mr. MOORE. In terms of the ability of the local community to finance, however, the financial responsibility which they have to demonstrate is the capability to pay off the non-Federal share. They do not have to demonstrate capability to pay off the full cost. And in any event, whether it is done through a system of sewer charges or whether it is done through a system of tax funds, they have to demonstrate the financial capability to then pay that off if they are following anything other than a cash payment for the project. Chances are that it will be done by some system of debt financing in any event, either by tax revenues or by a system of charges.

GRANT ASSISTANCE CUTOFF FOR FAILURE TO SUBMIT NONDEGRADATION STATEMENT NOT DIRECTED

Mr. DENNEY. Do you know, it has come to my attention that some people feel that they were told to advise the Water Pollution Control Council of the respective States that unless they have by July 1, 1968, a provision in there referring to the nondegradation statement that the Secretary is insisting upon, there would not even be any grant-in-aid programs for them?

Mr. MOORE. Well, there has been no such instruction issued.

Mr. DENNEY. I have never seen it in writing. This has just been told to me orally.

Mr. MOORE. No, I must emphasize again there are certain exceptions in most of the States' standards, and certainly there is no intent during the course of this fiscal year, before this procedure is concluded, to cut off the construction grants for the States.

Mr. DENNEY. Well now, I just have one more question, and it always concerns me in any legislation that the drafter, Secretary Udall, and your Commission has done an outstanding job. You are working with the States and I commend you for it.

How do we know who is going to be the next Secretary of Interior or the next Commissioner?

RESPONSIBILITY FOR DEVELOPMENT OF WATER QUALITY STANDARDS

Are we turning over authority to the point where we, as Members of Congress, are abrogating our office to the point where we can write up standards and say to the States, "Your standards are not satisfactory unless you have done such and such."

Mr. MOORE. I think in terms of the continuing responsibility of the Department of Interior or the Secretary, or the Commissioner, it would be hard for me to foresee the time when the Congress would in any event surrender its oversight of these activities in terms of the application of these various procedures. These are attempts to arrive at the objective, and always in the process of proposing a particular procedure you inevitably come up with a better working relationship if you pursue the matter. There is better understanding in terms of the relationship between the Federal agencies and the State, if you do pursue it, and have the understanding that I think you can.

Mr. DENNEY. For instance, I have in my hand a letter dated January 31, 1968, written by Mr. H. C. Ray for Robert S. Burd, to my State of Nebraska, where it says, "As I explained in my recent telephone call, it is our policy to secure a firm commitment to secondary treatment."

Now, if, in effect, the States adopt these standards, send them in, and here is the Federal Government writing to the States saying, "Look, your standards are pretty good, except for this that you have to put in."

Now, tell me who is writing the standards.

Mr. MOORE. Well, the alternative, of course, would be to say at some point: It would be disapproved in terms of the question of secondary treatment. This is one that is unresolved in several of the midwestern States.

As the chairman has indicated, my prior association has been with the State of Texas. In terms of secondary treatment, I believe this is a matter where the technology is known and the need is such that it should be applied across the board.

We had there applied it within the State of Texas at the State level, insisted upon secondary treatment, but I think it might be unfair for us to indicate to a State that its standards were unsatisfactory without indicating where or in what regard they were felt to be unsatisfactory.

Mr. DENNEY. The thing I am concerned about, I can visualize the small manufacturing plant and the small municipality thinking they have done the job to stop the pollution and then they have to give it the secondary treatment, requiring expensive machinery and technological changes they have made, and so forth.

Mr. MOORE. Well, I think with any rule or any generalization it would have to be conditioned by exceptions, and I recognize there are instances in which an exception ought to be made and, quite frankly I have had some discussions about your State and the relationship in terms of interstate waters, with regard to this particular question.

Let me say this in terms of the general secondary treatment requirement. I regard it from the State's view, and then I have continued to regard this requirement for secondary treatment for industrial wastes as intended to reflect that a higher degree of treatment would not be required from municipalities than would be required of industry and vice versa.

The intent was to assure that those who were making this discharge would be held to, as nearly as could be determined, the same standard. This, of course, is an entirely separate treatment. But, when you say who is writing the standards, I think that the Department of Interior does have a responsibility to indicate to the States, at intervals, those areas in which they do not regard the State's standards as coming up to par. This has been quite often overlooked. This was reflected throughout the standard-setting process. Recognition has had to be given to the differences in State laws as one of the examples.

Mr. DENNEY. Mr. Chairman, I would say for the record here that my State has been one of cooperation with your Department. I am not trying to upset it. I just want to write a good bill.

Thank you.

Mr. WRIGHT. Mr. McEwen?

Mr. McEWEN. Mr. Moore, so I can understand exactly what the full meaning of the proposed legislation is, I am trying to get some understanding, if you will, of where we have been, as well as where we may be going with this new legislation.

APPROVALS OF STATE STANDARDS

Under the present Federal Water Pollution Control Act, I am concerned as to how many States now have had their standards approved.

Was there testimony this morning that there are now 31 States?

Mr. MOORE. One of those is a territory, but that is correct; 31 out of a total of 54 jurisdictions.

Mr. McEWEN. Did they include the 10 that were supposed to have been approved and then reviewed?

Mr. MOORE. That is correct. They include the first 10 that were approved, one or two of which may have acceptable nondegradation statements.

Mr. McEWEN. Were those approved with any conditions?

Mr. MOORE. Of the States standards approved to date, some have been approved without exclusions, others with exclusions.

Mr. McEWEN. Now, in an effort to understand this, Mr. Moore, I notice that section 30, according to a release from the Department of Interior, when Secretary Edwards spoke before the Federal Bar Asso-

iation in Albuquerque, N. Mex., and April 6 of this year, he said, and I am quoting from this release:

As of March 25, 1968, the Secretary had determined that all of the water quality standards of 28 States where there were interstate waters met the requirements of the Federal act.

PUBLICATION IN FEDERAL REGISTER OF APPROVAL OF STATE WATER QUALITY STANDARDS

That was on April 6 of this year. Prior to that, on February 7 of this year, the Federal Register, Secretary Udall published the regulations and water quality standards in which it is stated that as the standards are approved, they will be published in the Federal Register.

Now you say that in addition to the figure of 28 that Secretary Edwards gave, according to this publication of the Federal Register, there are three additional, and again I know of no publication in the Federal Register of any States having been approved, but can you add anything to clarify this?

Mr. MOORE. I will have to say this is a matter to which I have not given any personal attention in the nearly 2½ months since I have been here. I am aware that there has been an exchange of memoranda dealing with the legal question of what must be printed in the Federal Register.

The reason this question has arisen I think is because, and I will just mention a practical problem, in some States the individual submission by the State could represent a stack of material 12 or 15 inches high, and that is just from one State.

I think the question that has been under discussion with the Solicitor of the Department of Interior is whether that entire submission, with modifications, has to be printed in the Federal Register. I am doing this strictly from my impression and I may be mistaken. And then there has been discussion, if something less than that can be printed in the Federal Register, what would have to be printed in the Federal Register.

I do know there probably has not been any submission to the Federal Register for publication.

Mr. McEWEN. Well, the procedures that are spelled out in the Federal Register of February 7 of this year is entitled "Procedures for Adoption and Promulgation of State Standards," which is quite specific. In section 620.2, promulgation, paragraph (b), it states: "Notice of determination by the Secretary is stated after the water quality standards meet the criteria of section 10(c) (3) of the Federal act and shall be published in the Federal Register. Such notice shall incorporate by reference the document containing water quality standards."

Does that not seem quite explicit, Mr. Moore, when it says it shall incorporate by reference any such water quality standards?

Mr. MOORE. Well, that does sound specific. Perhaps the question was resolved, and I am unaware of it.

My first day was February 8, but I do not, as you have indicated, believe there has been a publication of any standard in the Register.

I will be glad to check this matter and furnish the committee the information with regard to the publication. It is not a matter to which I have given my own attention.

Mr. McEWEN. This, Mr. Moore, was the day before your first day in office, which was February 7, but it does say in there by reference. I can see the question that will arise, that you will incorporate in the Federal Register the entire quality standards of the States. This will be very voluminous and I take it that is why the Secretary's procedure is spelled out in here, which is "shall be by reference."

I am correct, then, in my belief that there has been nothing yet published in the Federal Register indicating official approval of any State's water quality standards.

Mr. MOORE. Not to my knowledge. It has not been submitted to the Federal Register.

I might add, as I understand it, the Federal Water Pollution Control Act, as amended, does not require publication in the Federal Register. This question arose by reason of the Public Information Act, and we tried to get something into the Federal Register that would serve as adequate notice of the adoption, but not require the full publication of the standard.

I will check into that and furnish the committee the specific information as to whether or not, or when some are to be released for the Register.

REVIEW AND REVISION OF WATER QUALITY STANDARDS

Mr. McEWEN. Well, do you agree, Mr. Moore, that the present law is clear that once there is a determination that standards are acceptable, that is standards of a State, that they are approved? That is a final approval that will then occur?

What I am saying, Mr. Moore, it is not your view, is it, that these standards of the States be reviewed annually or from time to time?

Mr. MOORE. No, there is a procedure provided in the law for either the States or the Department of Interior to revise these standards. In other words, the statute provides that the procedure for altering these standards is either State initiative or initiative of the Department of Interior.

Mr. McEWEN. Well, it is a change. It is a bilateral act, is that correct?

Mr. MOORE. Well, there is a procedure. The Department of the Interior could fix these standards, if the standards submitted by the States were not acceptable to the Secretary of the Department of Interior.

Mr. McEWEN. Once these standards have been set and approved, then you do not envision changing them after that?

Mr. MOORE. Oh, well, I think that there would have to be changes in time. I do not think we anticipate that there will be changes every 6 months or every year.

For example, you could revise standards through the conference procedure that is provided. They would have a degree of stability, but I do not believe they should be regarded as fixed in concrete for all time.

Mr. McCARTHY (presiding). Well, thank you very much, Commissioner.

Mr. MOORE. Thank you, Mr. Chairman.

Mr. MCCARTHY. Our next witness is Vice Adm. Paul E. Trimble, of the U.S. Coast Guard.

Admiral Trimble, I would like to have you introduce the members who will accompany you.

**STATEMENT OF VICE ADM. PAUL E. TRIMBLE, U.S. COAST GUARD;
ACCOMPANIED BY ADMIRAL MURPHY, CAPTAIN JENKINS, AND
COMMANDER DeWOLF**

Admiral TRIMBLE. Thank you, Mr. Chairman.

In the interest of saving time, I would be pleased to introduce my statement for the record and just make a few comments.

First, let me introduce Admiral Murphy on my far right, Captain Jenkins, and Commander DeWolf.

Mr. MCCARTHY. Fine.

Without objection, your full statement will appear in the record at this point.

(The prepared statement follows:)

STATEMENT OF VICE ADM. PAUL E. TRIMBLE ON OIL POLLUTION CONTROL

Mr. Chairman and members of the committee, the opportunity to appear today and offer the views of the Coast Guard and the Department of Transportation on proposed pollution legislation, S. 2760 and H.R. 15906 and similar bills, is appreciated.

Section 4 of S. 2760 and the provisions of H.R. 15906, which represent a revision and modification of the existing Oil Pollution Act of 1924, are of great importance to the Coast Guard. The need for additional legislation to combat oil pollution has become much more urgent with the TORREY CANYON and subsequent marine disasters involving tankers. We believe that S. 2760 with amendments which have been proposed by the Administration, H.R. 15906 and similar bills under consideration, will provide a much more effective base for the prevention and control of both catastrophic and minor incidents of oil pollution.

Over the past months, commencing with a joint Transportation/Interior Oil Pollution Study directed by the President last spring, we have been engaged with the Interior Department in consideration of how the entire Federal establishment can best attack the oil pollution problem. It was concluded by both Departments that the regulatory authority for shipboard procedures, methods and equipment relating to oil pollution, prevention and control, should be vested in the Secretary of Transportation, and the proposed amendments to S. 2760, and the language of H.R. 15906 reflect this conclusion. This provision reflects an appreciation of existing Coast Guard functional responsibilities in the maritime sphere, our involvement in matters of pollution from vessels, and recognition that pollution from ships, its prevention and control must logically be integrated into the overall scheme for regulation of ship operations.

For the same reason, this conclusion has been reached with respect to the regulatory features of H.R. 16207, S. 2525 and similar bills dealing with waste from watercraft.

We urge that these bills be amended to reflect the regulatory provisions which are now included in H.R. 15906. Specifically, regulatory authority covering vessel equipment and procedures would be assigned to the Secretary of the Department of Transportation after consultation with the Secretary of Interior.

An illustration of how closely existing Coast Guard authority relates to prevention of pollution from vessels is the Tank Vessel Act (46 U.S.C. 391a). That act provides authority for supervision of tanker design and construction, handling and storage of inflammable or combustible liquid cargo in bulk, fittings and equipment, manning and operation. The objective is maritime safety. It is difficult to divorce risks created by oil escape from maritime safety. The Coast Guard is also intimately connected with ship and equipment design and construction; with navigation and ship control; with licensing, competence, and

performance of shipboard personnel; with the handling and movement of hazardous cargoes; with administration and enforcement of the Oil Pollution Act of 1961 designed to prevent oil pollution beyond the territorial sea in the so-called "prohibited zone". Navigation and ship control include rules of the nautical road; establishment of sea-lanes and other marine traffic supervision; aids to navigation; radio telephone communications, radar, depth sounders, and other electronic equipment; machinery specifications and safety requirements. Competence of shipboard personnel, examination and licensing, and the requirements for and the adequacy of pilotage all pertain to preventing marine casualties causing pollution. In addition to the Tank Vessel Act, the Coast Guard has a general statutory obligation for review of plans and equipment for other new vessel construction.

Presently there exists no very effective device for the treatment of a persistent oily discharge to create a clean water effluent. Because of oil's very nature, effective pollution control must look towards preventing oil from getting upon the water. Oil discharges from vessels of the magnitude which cause the greatest concern are usually triggered by a marine casualty. The prevention of marine disasters is one of the Coast Guard's primary missions. Because one cannot simply prohibit the transportation of oil over the water, or outlaw collisions and groundings, solution to the problem must be found in those factors which contribute most to a lowering of the risk. Most of the known factors, however, already fall within the existing responsibilities of the Coast Guard.

The grounding several weeks ago of the Liberian tanker, the OCEAN EAGLE, at the entrance of San Juan Harbor with subsequent break-up and discharge of about 2,000,000 gallons of crude oil is the latest vivid reminder of the catastrophic potential of a major oil spill. Coast Guard was promptly on the scene of this marine disaster. The crew was rescued and the safety of the port then became a major consideration. The local Coast Guard commander set in motion a series of contingency actions similar to those developed throughout the Coast Guard as an aftermath of the TORREY CANYON in an attempt to control, abate and eliminate the pollution threat. Participating in the operation were Coast Guard personnel, boats and helicopters. The Department of Interior was notified and the Federal Water Pollution Control Administration and Coast Guard experts were dispatched from Washington to San Juan to advise and assist as appropriate. Using C-130 aircraft, we made repeated flights to and from New York carrying a skimmer craft, floating boom and other materials. At the request of the Coast Guard, the Navy furnished salvage specialists and ships. The Corps of Engineers and the Puerto Rican Government also participated. This experience points up the value and urgency of multi-agency planning and participation in such a casualty, including State and local authorities and industry whenever appropriate. Experience also dictates the need for clear-cut authority for the on-scene commander, immediate implementation of contingency plans and the need for full utilization of existing resources, communications and other tools.

Those provisions of S. 2760, if amended, and H.R. 15906 which deal with clean-up, place the ultimate responsibility for clean-up of the oil with the Secretary of the Interior. Provision is included for the Secretary of the Interior to delegate that authority to other agencies through appropriate agreements. Because of the extensive resource capability of the Coast Guard, distributed geographically as well as the regulatory authority incorporated in H.R. 15906 and S. 2760, if amended, relating also to clean-up procedures, we would expect to enter into long term agreements with Interior to define geographic areas or other appropriate bases where the Coast Guard would exercise the delegated authority for planning, development of the necessary equipment and materials, and for operational direction and on-scene control and coordination of clean-up efforts should an incident occur. The strength of Coast Guard planning and operational capability stems from our intimate knowledge of vessel construction and operation, knowledge of the navigable and ocean waters, long experience in regulating the water transportation of hazardous cargoes, and our handling of vessel casualties including search and rescue operations. Additionally, it would be important to spell out in the agreement the circumstances and the types of expenses unique to oil removal efforts for which Coast Guard would be reimbursed from the revolving fund which the proposed bills provide. Stockpiling of materials and equipment at key locations may be advisable.

For many years the Coast Guard has participated for the United States in the Intergovernmental Maritime Consultative Organization which continues to deal with oil pollution and other maritime related problems of international concern.

In fact, international maritime safety conventions are normally generated through this organization.

Regarding the enforcement aspects of the proposed legislation, it is difficult to assess at this time the extent to which additional Coast Guard forces or facilities could be required. Presently, the Coast Guard enforces the 1961 Oil Pollution Act (as noted above) and participates in the enforcement of the 1924 Oil Pollution Act, and the Refuse Act of 1899. We anticipate initially the utilization of existing forces with additional emphasis on pollution aspects. We now include oil spill surveillance in our coastal air and vessel patrols. As budgetary resources permit, we plan to strengthen our port safety operations. Coast Guard marine technical personnel have been working to improve tanker structural designs, waste oil and other pollutant containment, waste oil separators and other pertinent devices. Also, as appropriate, we will include funds in future budget requests for research to support Coast Guard oil pollution responsibilities.

That concludes my prepared statement. I welcome the opportunity to discuss any of my comments in greater detail at your request, or to answer any other questions which you may have.

OIL POLLUTION CONTROL

Admiral TRIMBLE. I am Admiral Trimble, representing the Department of Transportation and the Coast Guard.

Mr. Chairman, we do appreciate the opportunity to appear before this committee and explain the role of the Coast Guard in the prevention and control of pollution.

As Secretary Udall has explained, the administration's recommendations are included in the bills before you.

First you have the one dealing with oil pollution, S. 2760 and H.R. 5906 and similar bills, including administration recommendations which places the responsibility for enforcement, as far as vessels are concerned, in the Coast Guard.

In other words, after Interior determines the objectives and standards, the Coast Guard would then be charged, after consultation with the Secretary of Interior, with enforcing and achieving these standards that Interior has established.

Finally, as far as the clean-up operations are concerned, the administration proposes to place the responsibility in the Secretary of Interior.

The Secretary of Interior may then delegate his authority to any other Federal agency, if he chooses to exercise that responsibility.

The Coast Guard might be the recipient of such a delegation and, because of its resources distributed geographically around the country, could be in a position to act in a casualty case, such as the one that occurred down in San Juan, P.R.

VESSEL POLLUTION CONTROL

My statement, which is included in the record, deals specifically with the oil pollution aspect and does not deal with the bills such as S. 2525 and also H.R. 16207 and similar bills.

I feel that, with respect to the regulatory features, that H.R. 16207, S. 2525 and similar bills should be amended to reflect the conclusions that have been reached by the administration with respect to H.R. 5906, S. 2760 and similar bills.

In other words, the regulation as far as ships and equipment are concerned for oil pollution, this principle should be extended to the one dealing with waste from watercraft.

My statement does not specifically deal with that, but I make that recommendation separately.

Mr. McCARTHY. You say this is not in your statement. I wonder if you could enlarge on that and tell us why you feel this could be done?

Admiral TRIMBLE. My statement deals only with S. 2760, H.R. 15906, and similar bills dealing with the oil pollution question. It was not prepared to deal with the waste from watercraft, which is also being considered by the committee today.

I merely wanted to point out that it had been concluded, because of the Coast Guard's almost total involvement with vessel operations, that the same principle should be applied, should be included in the bills dealing with waste from watercraft.

DRAFT LANGUAGE FOR H.R. 16207 (H.R. 13923, S. 2525) FOR DIVISION OF REGULATORY AUTHORITY CONSISTENT WITH DIVISION CONTEMPLATED WITH REGARD TO S. 2760 AND RELATED BILLS

Sec. 11. (a) For the purpose of preventing pollution of the navigable waters of the United States from vessels—

(1) The Secretary shall issue regulations, in consultation with the Secretary of the department in which the Coast Guard is operating, and consistent with maritime safety and the marine and navigation laws and regulations, (A) establishing water quality and conservation objectives and standards, including the substances and matter and the quantities thereof which the Secretary determines will have a significant deleterious effect on the public health and welfare, to prevent contaminating discharges from vessels; and (B) which permit or prohibit discharges in quantities, under conditions, and at times and locations which he deems appropriate, after taking into consideration the deleterious effects of such discharges on the public health, recreation, and fish and wildlife. When the regulations issued under this paragraph permit the discharge of substance or matter which may constitute a potential obstruction to navigation in the navigable waters of the United States, other than in places where the Secretary of the Army authorizes discharge or dumping without permit, such regulations shall in no way relieve a discharger from the requirement for a permit issued by, or other requirements, of the Secretary of the Army acting through the Chief of Engineers pursuant to his existing authority.

(2) The Secretary of the department in which the Coast Guard is operating shall issue regulations which are consistent with the regulations issued under paragraph (1) of this subsection and with maritime safety and the marine and navigation laws and regulations, governing procedures, methods, and equipment to prevent contaminating discharges from vessels.

(b) The regulations issued under this section shall prescribe reasonable schedules for compliance, after taking into consideration the cost for compliance, the state of the art for devices and methods to prevent pollution, and other practical considerations. Schedules for compliance may distinguish between new and existing vessels, and may give special consideration to vessels conforming to previous State requirements or conforming to recommended levels of control set forth in the Handbook of Sanitation and Vessel Construction, Public Health Service, 1965.

(c) Before any regulations under this section are issued, the Secretary and the Secretary of the department in which the Coast Guard is operating shall consult with the Secretary of State; the Secretary of Health, Education, and Welfare; the Secretary of Defense; the Secretary of Commerce; other interested Federal agencies; and the States and industries interested. After regulations are issued, the Secretary and the Secretary of the department in which the Coast Guard is operating shall afford all interested persons and public and private agencies and organizations a reasonable opportunity to comment thereon before they become effective.

(d) Any manufacturer of a device which is designed to prevent the discharge of untreated or inadequately treated sewage or other pollutant from vessels in accordance with any standards prescribed under subsection (a) (1) of this section may request the Secretary of the department in which the Coast Guard is operating to approve such device.

(1) The Secretary of the Interior shall determine if any discharge from the device is in accordance with established water quality standards and shall notify the Secretary of the department in which the Coast Guard is operating of his determination.

(2) Upon notification from the Secretary of the Interior that a device is suitable the Secretary of the department in which the Coast Guard is operating, if he determines that the device is satisfactory from the standpoint of safety and any other requirements of maritime law or regulation, after consideration of the design, installation, operation, material, or other appropriate factors, shall approve the device. Any device manufactured under said approval which is in all material respects the same as an approved device shall be deemed to be in conformity with the regulations established pursuant to this section.

(3) The manufacturer of an approved device shall maintain records and provide information and reports as the Secretaries deem appropriate and shall permit any authorized Federal employee to have access to and copy such records during business hours. All information reported to, or otherwise obtained by, either Secretary of his representatives pursuant to this subsection which contains or relates to a trade secret or other matter referred to in section 1905 of Title 18 of the United States Code shall be considered confidential for the purpose of that section, except that such information may be disclosed to other officers or employees concerned with carrying out this section.

RESPONSIBILITY FOR CLEANUP IN OIL POLLUTION SITUATIONS

Mr. SULLIVAN. In this legislation, who would have the ultimate responsibility for the operation of the cleanup, the situation that was brought up outside of the San Juan Harbor?

Admiral TRIMBLE. The bills that deal with this question provide or give this authority to the Secretary of the Interior.

Now, there are some complications that I am glad to have the opportunity to explain, because it is not quite as clearcut as it would seem from this.

In other words, let's take the *Ocean Eagle* casualty which occurred at the entrance to San Juan Harbor. It started out as a rescue case first. We rescued the crew as the vessel broke in half and oil started pouring forth from the bow and stern sections.

Now, we have not only an oil pollution problem, but we have a port safety problem; possibly hazard to a port which we have responsibility for separately.

At this point, of course, it becomes a little difficult to distinguish between the oil cleanup responsibility and the port safety question.

Mr. SULLIVAN. In other words, you think this legislation would require further clarification to define what your responsibility should be in a practical manner, such as you just state?

Admiral TRIMBLE. Mr. Sullivan, I do feel that any legislation that comes forth should provide clearcut responsibility in the various circumstances that might arise.

Normally, if we are not dealing with a port safety problem, it would be very simple. The Secretary of the Interior is in charge of the operation. Should he want to contract with available industrial firms or utilize the services of any salvage company, that is one that has facilities, that would be up to him. He could utilize the Coast Guard facilities if he wanted to. But, when we have an oil spill involving a port, inside of a port, and we have had a number of these, we had one up in New York harbor that involved a lot of gasoline, and there is an immediate port safety problem as well as a cleanup problem, it will be necessary for Interior and the Department of Transportation to

work out some agreement as to the responsibilities, as I see it, in a port safety question.

Mr. SULLIVAN. Mr. Chairman, may I ask your permission, would it be possible for you to supply the committee with a brief of some language about an additional amendment to this bill along the lines we have been discussing?

Admiral TRIMBLE. We will be glad to attempt to do that. This is a very complicated subject, and I am not prepared today to offer any language; but we certainly will study it and will be glad to work with your staff.

Mr. SULLIVAN. Thank you, Mr. Chairman.

DRAFT LANGUAGE FOR H.R. 15906 AND S. 2760 REGARDING OIL CLEANUP
AUTHORITY

Sec. 20(i) (1) The owner or operator of a vessel or shore installation from which oil is discharged into the navigable waters of the United States or the Contiguous Zone shall notify the Secretary of the department in which the Coast Guard is operating and shall immediately remove the discharged oil from any waters and shorelines where it may be found, act to minimize and mitigate damage, prevent additional or continuing oil discharge, and preclude other adverse effects as become apparent, in accordance with regulations prescribed under this section and as directed by competent authority. If a discharge of oil is the result of a collision between vessels the owner or operator of each vessel involved shall comply with the foregoing. If an owner or operator fails to act or if the source of an oil discharge is not determinable, the Secretary of the department in which the Coast Guard is operating may remove or arrange for removal of the oil and the owner or operator and, as appropriate, the vessel or shore installation responsible for the discharge, except that resulting from an Act of God, shall be liable, notwithstanding any other provision of law, to the United States, in addition to any penalties prescribed in this section, for the costs to the United States of any Federal action taken pursuant to this subsection. Clearance of a vessel liable for such costs from the United States may be withheld until the costs are paid or until a satisfactory bond or other surety is posted.

(2) In carrying out the provisions of this subsection and whenever as a result of marine disaster there is created a substantial threat or menace to the public welfare because of potential discharge of large quantities of oil, the Secretary of the department in which the Coast Guard is operating may:

(i) perform any and all acts necessary to remove the oil or eliminate the threat or menace;

(ii) utilize by agreement with or without reimbursement personnel and facilities of other Federal agencies;

(iii) coordinate and direct all public and private effort directed at oil removal or elimination of the threat or menace;

(iv) under emergency summarily destroy or remove wrecks, debris, and other matter which he determines substantially contributes to continuing oil discharge or the threat or menace by whatever means are available to him, or made available to him, without regard to the laws governing employment of personnel or the expenditure of appropriated funds.

(3) In carrying out the provisions of this subsection and to prevent detrimental ecological impact or other significant deleterious effect on public health and welfare, no person, including any Federal agency, engaged in any oil removal or related effort shall use or direct the use of any chemical, compound, or substance upon or in the navigable waters of the United States or in the Contiguous Zone, which has been prohibited by the Secretary by regulation, or otherwise.

Additionally, in line 23, page 9, delete "Secretary" and substitute therefore "United States."

Mr. McEWEN. Admiral Trimble, I would say, sir, that we have had incidents of oil spillages in the St. Lawrence Seaway. I think all of us in that area, including this Congressman, know where the U.S. Coast Guard is. They know that the cutter is stationed nearby, and I know you are the ones we would call in a situation like that.

Without asking you now to comment on it, I would say, as one member of this committee, I would feel very happy if the responsibility, over all, would rest with the U.S. Coast Guard.

I make that not as a criticism of the Interior Department. I know that the U.S. Coast Guard is in those waters, and as you pointed out, where port safety is involved, the Coast Guard has a clear-cut responsibility and, of course, I assume, if it is a hazard to navigation, you have the responsibility to immediately take action. And in view of what appear to be the clear-cut responsibilities of the Coast Guard now, it would seem to me that you gentlemen are prepared to accept any additional responsibility, dealing with a fleet. It would be feasible and clear cut to place all the responsibility in this area with one agency of the Government.

I am pleased our counsel, Mr. Sullivan, made the request he did, and if you can comply with it, Mr. Chairman, I hope that Admiral Trimble and his people in the Coast Guard will furnish us with something along this line, what you are prepared to do to carry out this type of mission.

Admiral TRIMBLE. Thank you, Mr. McEwen.

I would like to add to my comments that I certainly am not suggesting that this is not a team problem. I think the current incident of pollution on the Waikiki Beach at Honolulu is a good example.

For example, right now a Coast Guard boat is carrying a team around, trying to determine the cause of the oil spill on Waikiki Beach out at Honolulu.

We have a representative of FWPCA, we have a Coast Guard representative, we have one from the State and local authorities that are in this team trying to determine the cause.

There is concurrently a cleanup operation going on by the local authorities on the beach.

The last report I had was the wind was changing, and it looked like it would blow the contamination away from the beach and recreation bathing had been resumed. Most of the cleanup had been accomplished when we left my office this noon.

Let me emphasize that it is a team. There is a team problem here. It is not simply one agency, the Coast Guard, doing something, because Interior has specialists to determine the best way of handling and coping with a spill, the Department of Interior also has scientists and they have research funds to study the problem; even in the San Juan spill this was a team, a multiagency approach dealing with the problem.

The various contingency plans the Coast Guard evolved after the *Torrey Canyon* affairs we have them for all the major ports, every one of them include the other interested Government agencies. The communications network we use, is generally operated by the Coast Guard. The plans have representatives of the Corps of Engineers, the local port authorities, and the States and industry.

Industry plays a very important part in this and they have been very interested in providing facilities, providing technical know-how and being right on the scene to help out as far as coping with these are concerned.

Mr. McCARTHY. But in each of those cases you cite, it is a team approach. Which of the various agencies that you have mentioned is the coordinator?

Admiral TRIMBLE. Well, at the moment, because of the particular facilities that we have spread geographically around the country, and many of our possessions, normally the Coast Guard happens to be on the scene. We have the presence. We have rescue facilities at different places. We have boats. we have helicopters, so it is somewhat logical that it devolves upon the Coast Guard; but in each case we do notify our counterpart in FWPCA, so we can start working together on it.

Mr. McCARTHY. You also have the communications network that some of the agencies do not have.

Admiral TRIMBLE. We do have a very complete, modern communications network, yes, sir.

HAWAII OIL SPILL

Mr. McCARTHY. Have you found out what caused the oil problem in Hawaii?

Admiral TRIMBLE. At the moment, the exact cause is not known, sir. There is an indication that the State attempted to remove an oil source near the entrance to the harbor. There is some indication of this happening.

Now, we have surveyed the area by plane and by boat. We have found numerous oil slicks off Waikiki Beach and off the harbor. Just before we came here at noon, there was also a fairly large oil spill sighted in the harbor itself. The State representatives thought this might have come from a storm sewer discharge. That is a separate one from the one that fouled up Waikiki Beach.

Mr. McCARTHY. You do not know where the one that fouled Waikiki Beach came from?

Admiral TRIMBLE. No, apparently state authorities had tried to remove an oil source near the entrance to the harbor. It appears this probably is the source.

Mr. McCARTHY. Stationary shore source?

Admiral TRIMBLE. No, underwater. It was near the entrance to the harbor. They had just indicated they had tried to remove some source.

We have had Navy divers look at several other possible sources of leaks off the Waikiki Beach in the last day or so. There was some indication that something was coming from underwater, oil leakage that is; we have investigated that and it does not appear to be the source.

Mr. McCARTHY. This one may be coming from a sunken ship, is that what you are saying?

Admiral TRIMBLE. Well, that is what it sounded like. There was no indication of the source that the State was trying to remove.

Mr. McCARTHY. Would that be where the ships sunk at Pearl Harbor would be?

Admiral TRIMBLE. No, this was near the entrance to the harbor, sir. It is possible, but we were not aware of any removal program, so I really doubt that it was thought to be one of those ships, sir.

By tomorrow we may have some more information on this for you.

RESPECTIVE ROLES OF FEDERAL AGENCIES IN OIL POLLUTION SITUATIONS

Mr. McCARTHY. It just seems to me, from my own experience, too, in Buffalo, that the Coast Guard is really a key agency in this. You do have the communications, the experience, the facilities.

I do think it should be spelled out, if you can possibly do it, because the way it is now it is rather ambiguous.

Admiral TRIMBLE. Well, the proposals in the bills before you do place the responsibility specifically in the Department of Interior, so the bill does attempt to spell out the responsibility.

Mr. McCARTHY. Mr. McEwen?

Mr. McEWEN. Mr. Chairman, on that point, you have seen a copy of H.R. 15906?

Admiral TRIMBLE. Yes, sir.

Mr. McEWEN. On page 5, sir, paragraph (g), as I read it, it says this section will be enforced by the Interior Department and the Secretary of the Department under which the Coast Guard is then operating. Apparently the author of the bill anticipates the Coast Guard might be moved around at some future time. But it places, as I read it here, the enforcement in the Secretary under which the Coast Guard is operating, and the Secretary of the Interior, with or without agreement of law enforcement officers, other Federal agencies, et cetera, et cetera, and it seems to be a joint responsibility.

Admiral TRIMBLE. The responsibility is placed in the Secretary of the Interior and he may delegate any part of this responsibility to the Department in which the Coast Guard is operating.

Mr. McEWEN. The wording:

Shall be enforced by the Secretary of the Interior and the Secretary of the Department in which the Coast Guard is under.

Admiral TRIMBLE. That only deals with the enforcement. That is not the agreement.

The enforcement responsibility is in the Secretary, Department of Transportation, after consultation with the Secretary of Interior. There is no question about that.

Mr. McEWEN. Again, Admiral, the language, you are quite right, it has to do with enforcement, not the cleanup, but the language of that, as I read it, is joint. It does not place it in either the Secretary of Interior or Secretary of Transportation. It says:

Shall be enforced by the Secretary of Interior and by the Department under which the Coast Guard is operated.

Admiral TRIMBLE. Yes, sir.

Mr. McEWEN. Is it your understanding, however, that that enforcement was to be carried out by the Secretary of Interior in this case, or the Secretary of Transportation?

Admiral TRIMBLE. In this particular section you are referring to, it is joint.

Mr. McEWEN. It is joint?

Admiral TRIMBLE. Yes, sir; if you look on page 7 under subsection (j), first, the Secretary, that means Secretary of Interior, shall issue regulations in consultation with the Secretary of the Department in which the Coast Guard is operating, covering conservation objectives and standards in removing oil discharge in the contiguous zone. Then

it says the Secretary of the Department in which the Coast Guard is operating shall issue regulations in consultation with the Secretary of Interior, designed to implement the regulations issued by the Secretary.

That is the part where the enforcement responsibility relating to our aspect is placed in the Secretary of Transportation. The cleanup aspects are dealt with on page 6 under subsection (i), and that explains what the Secretary of Interior may do.

Mr. McEWEN. Now, as I read it, it indicates that if the owner of the vessel does not remove the discharged oil in accordance with the regulations, then the Secretary—and that is the Secretary of Interior—may remove such oil. So apparently there the cleanup function is vested in the Secretary of Interior.

Admiral TRIMBLE. That is right. At the bottom of the page, page 6 the Secretary of Interior may utilize the services of other facilities or other agencies.

Mr. McEWEN. Other Federal agencies; right.

Well, the thought occurs to me, Admiral, that there could well be a situation where the Coast Guard would be obliged to be on the scene because a vessel, such as the *Ocean Eagle* in the San Juan, P.R., harbor situation, needed Coast Guard assistance before there was any incidence of spillage. There was, No. 1, as I understand your testimony in that case, a rescue mission. The Coast Guard had to remove the crew, and then there was a question of hazard to port safety, due to the oil that you had to deal with.

In other words, you are already on the scene and functioning before the spillage occurred. That is why I hope most of your thoughts on the capability of the Coast Guard take on that operation.

Admiral TRIMBLE. We are quite intimately concerned with this problem and in a number of different aspects, as was explained in my statement. We are involved in the placement of aids to navigation as far as establishing channels are concerned.

We are involved with the port safety. We are involved with the regulations as far as merchant vessel safety, and, further, we go back to the design of the vessels themselves. We even have to approve the plan for design of a tanker or other vessel, and the safety equipment thereon. This has to do with maritime safety.

We also license the crew and the officers. We inspect the ship, the safety appliances. We are involved with the shipboard operation from A to Z, almost.

This is just another reason why we are so close on the scene in maritime incidents.

Mr. McEWEN. Admiral, this thought occurs to my mind: you mentioned the licensing of personnel. In most instances, as in the case of San Juan, you are dealing with a ship whose licensed personnel may hold American licenses. As one who has worked with pilots, I know how they value that mariner's ticket they have. I have heard them talk about it, and that if anything happens, they are ever-mindful that the Coast Guard has power over their license. A lot depends on the revocation of that license, for it's their livelihood. I can see that with licensed personnel they may have the greatest respect for the Department of Interior or any other agency of the Federal Government, but the

still do not like to bet with a jockey in a situation. You are directly passing on their qualifications and reviewing their actions. I think it gives you a standing by virtue of your other functions, that no one else has, in that you are dealing with the personnel; and I think this is something the committee will consider.

Admiral TRIMBLE. Many of the oil spills are related to a marine casualty, and if it occurs in our waters or involves U.S.-flag ships, we investigate the casualty and attempt to determine, or investigate the cause. If it is a major casualty, the National Transportation Safety Board makes a final determination as to cause.

The incident down in San Juan happened in territorial waters, and we are investigating that casualty now to attempt to find the facts which will lead to a determination of the cause.

It just happens that this is a Liberian vessel with a Liberian crew, so an additional complication that the Coast Guard is involved within the international aspects of operation of vessels in our waters and harbors.

Mr. McEWEN. That vessel at San Juan, I am not familiar with that. Do they have harbor pilotage there?

Admiral TRIMBLE. Yes, they do have harbor pilotage in San Juan. The vessel came into port, and the pilot came out to meet it. The ship was in the process of picking up the pilot when this happened. The pilot did get on board just before the incident took place.

I am not trying to say that he was at fault, because the ship was already in a situation, apparently, that was dangerous with respect to the channel, considering the draft of the vessel.

Mr. McEWEN. He got there just in time.

Admiral TRIMBLE. Just in time, with a minute or two to spare, to get off the ship when it happened, and when she started breaking in two. He was part of the crew rescued.

Mr. McEWEN. Thank you, Mr. Chairman.

Mr. McCARTHY. Thank you, Admiral.

I would like to add a word of praise about the Coast Guard, which I think has a brilliant record in the history of our country and certainly in this field of preserving our waters, and say that mine is a Coast Guard family. I have a brother-in-law who is a warrant officer with the Coast Guard, now serving in Spain, where he is working on a loran station.

We have a very high regard for the Coast Guard.

We want to thank you for coming here today, and we look forward to hearing from you on spelling out the authority in this matter, to clean it up.

FEDERAL PREEMPTION OF VESSEL POLLUTION CONTROL FIELD

Admiral TRIMBLE. Mr. Chairman, if I may, there is one thing I would like to add by way of suggestion. I do not notice in any of the bills, as far as waste from watercraft, that there is a preemption provided for on the part of the Federal Government with respect to State actions.

I am thinking of vessels. Let us take, to give you an example of the problem, a vessel in interstate commerce or even a pleasure boat, a

yacht that goes from one State to another. The problem is trying to comply with different standards in different States.

I think that there should be a specific provision here that a Federal regulation that applies to a vessel, for example, would preempt any regulation of individual States, otherwise we would have a real problem in vessels traveling from State to State.

McCARTHY. Could you supply language for the record along that line?

Admiral TRIMBLE. Yes, sir, we will be glad to.

(The information to be supplied follows:)

DRAFT LANGUAGE TO ESTABLISH FEDERAL PREEMPTION FOR VESSEL STANDARDS AND REQUIREMENTS PROMULGATED UNDER H.R. 15906

"Sec. 20(k) Whenever a Federal standard or requirement established by regulation under this section is in effect, no State or political subdivision thereof shall have any authority either to establish or continue in effect, with respect to any vessel or associated equipment, any standard or requirement which is not identical to the Federal standard or requirement. The Secretary and the Secretary of the department in which the Coast Guard is operating, with respect to the scope of their respective regulatory authority established by this section, may waive the applicability of this subsection where exceptional circumstances existing within a State warrant the establishment by that State of a standard or requirement more stringent than the Federal standard or requirement."

The substance could be accomplished similarly in S. 2760 and in H.R. 16207 (S. 2525) and similar bills.

ENFORCEMENT PROVISIONS OF H.R. 15906 AND S. 2760

Mr. McEwen. Is Commander DeWolf your legal officer?

Admiral TRIMBLE. Yes, sir.

Mr. McEwen. In reviewing the things you are going to submit, will you look at that paragraph on page 5. I am a little confused as to what that means, where it says "anyone authorized by the Secretary of the Department in which the Coast Guard is operating will enforce the provisions of this section, may board and inspect any vessel with or without a warrant, arrest any person who violates the provisions of this section or any regulation issued thereunder in his presence or view" and it spells out that the arrest may be made with or without a warrant, where the violation occurs in the presence or view of the arresting officer; but I do not understand, what about where the incident occurs not in the presence or view of an officer of the Coast Guard? It leaves me a little bit confused on your provision to enforce it.

Commander DeWolf. The implications there, if it happens without his presence or view, then a warrant would be required for an arrest.

Mr. McEwen. That language starting out "with or without a warrant"—let me yield to Mr. Sullivan, our counsel.

Mr. Sullivan. Do you not think that the situation where you describe the clarifying language will clearly spell this out in this legislation?

Commander DeWolf. Well, as the language is written, counselor, it indicates, whether or not he has a warrant, he may arrest if the violation occurs in his presence or view.

If it has not occurred in his presence or view, then presumably he would have to have a warrant.

Mr. SULLIVAN. You think that language is satisfactory and does not need any further clarification?

Commander DEWOLF. This language, incidentally, is contained in other legislation which gives authority to the Coast Guard for enforcement of other maritime law. And it is long-standing, has been long in existence.

For that reason I do not think it really presents any problem.

Mr. SULLIVAN. Thank you.

Mr. McEWEN. There is one other thing, Commander DeWolf, the section (e) that concludes on page 5, that says "such penalties which may be recovered by action in the district court of the United States, or any district within which the vessel may be found."

On that section (e) the action lies in any district court where the vessel may be found; and paragraph (h) at the bottom of page 5, where it says "in the case of one action arising under this section, Samoa and Hawaii, the same thing." This, it seems to me, is inconsistent, that if we are going to have the action lie in any district court where the vessel may be found, and I would agree with that, then you should have the same provisions for incidents involving the Virgin Islands, Hawaii, and Samoa.

Commander DEWOLF. I quite agree. That provision in subsection (e), of course, is merely a reiteration of what is already contained in the procedural rule.

There is an inconsistency in subsection (h) by limiting the action to Guam or the Virgin Islands, as the case may be. There would, it seems to me, be no reason for that limitation.

Mr. McEWEN. You would agree, then?

Commander DEWOLF. That the violation could occur in the Pacific and the vessel could come into San Francisco.

Mr. McEWEN. Why? Is it because in almost everything that involves admiralty matters, it follows the vessel?

Commander DEWOLF. Yes, sir.

Mr. McCARTHY. I wonder if we could have some suggested language for amending that also, Admiral Trimble?

Admiral TRIMBLE. Yes, sir.

Mr. McCARTHY. Thank you very much, Admiral.

(The information requested follows:)

DRAFT LANGUAGE TO REMOVE THE LIMITATION IN H.R. 15906 THAT ACTIONS ARISING OUTSIDE THE CONTINENTAL UNITED STATES BE BROUGHT IN DISTRICT COURTS WHERE THE ACTIONS ARISE RATHER THAN WHERE AN OFFENDING VESSEL MAY BE FOUND

Delete the proposed subsection 20(h) beginning on line 21, page 5. Revise the last sentence of proposed subsection 20(e) beginning at line 1, page 5, to read:

"Such penalty shall constitute a maritime lien on such vessel which may be recovered by action in rem in the district court having jurisdiction."

The result could be accomplished similarly in S. 2760.

Mr. Chairman, did you have a question?

Mr. BLATNIK. I have no questions. I want to apologize to the admiral and his staff for being absent. I had a delegation of eight upstairs. We appreciate your appearing here and standing by

patiently all day long for the convenience of the committee and to withstand some interrogation, which was much longer than we had expected.

We are going to need a lot more technical help and guidance and advice, and we will keep in touch with you directly; and if you will assign some of your technical people, that would be helpful.

We do have a big wad here in the long series of bills, with the different aspects of the problem, and oil particularly is a tremendously complicated and apparently getting to be worse of a problem, and it has drawn a lot of worldwide attention. It frightens people because they are so helpless when a big spill does take place.

Finally, I may want to say this, that there are those of us from the Great Lakes region who have been familiar with the work of the Coast Guard for many, many years, and the thing that has always impressed me is, I think the Coast Guard is sort of the unsung hero, quiet, modest and efficient; and I mean that sincerely.

You really carry your job. never look for any accolades or publicity and sometimes, it is long overdue, but I want to express my appreciation. I was not here earlier. It was something beyond my control.

We shall keep in contact with you, and we shall not only seek your help but shall appreciate your counsel and guidance on this very difficult problem.

I thank all of you gentlemen for standing by all day long.

Mr. McEWEN. That would appear to cover the Great Lakes, for you have heard from Mr. McCarthy and myself, it is obvious the esteem in which the Coast Guard is held.

Admiral TRIMBLE. Thank you, sir.

Mr. McCARTHY. I recognize the gentleman from Illinois, Mr. Dan Rostenkowski.

WATER POLLUTION CONTROL LEGISLATION

STATEMENT OF HON. DAN ROSTENKOWSKI, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. ROSTENKOWSKI. I appreciate the opportunity of entering a statement on a subject which is so basic and so vital to this country, to you and to me, and to our sources of food, recreation, and health.

I want to take this opportunity fully to support legislation which will help protect our rivers and our lakes, our harbors and our coastline.

It is my understanding that these hearings are to be devoted primarily to the areas of oil pollution and vessel pollution. My interest in the area of water pollution has become great in the last year because, for the first time, I had the problem thrust squarely at me in the crisis which developed in Lake Michigan last summer. At that time I made a study of the pending legislation, spoke to the Army Corps of Engineers and observed the problems directly.

There was an oil slick on the lake which extended for 60 or 70 miles. There were many theories about where it came from, but there was nothing on which any real degree of responsibility could be placed.

The whole area was in an uproar over the situation. The Chicago Tribune ran an outstanding series on the pollution in the lake. The

more I read, the more I realized that what was regarded seriously by only a few people not too long ago was one of the really dangerous threats to this country.

If any emphasis on this problem was needed, that was supplied by the alewife dieoff which offended the olfactory senses and rendered the recreational beaches in Chicago a total loss.

What could be done about the problem? After considerable study it appears that causes of pollution in our waters stem from discharge of untreated sewage from our cities, harmful chemical discharge from our factories, the discharge of oil from shore installations, boats and vessels, the introduction of high phosphate bearing detergents and the unrestricted discharge of raw sewage, trash, and garbage from boats and vessels.

On October 26, 1967, I introduced H.R. 13708 and H.R. 13709, in the hopes of blocking these sources of pollution. I naturally think my bills would prove effective in this area but I have no such pride of authorship that I would not throw all my weight behind H.R. 15906 and H.R. 15907 in the respective areas of oil pollution and the increase and improvement of secondary treatment plants.

S. 2525 would prevent the discharge of sewage wastes from any vessel or class of vessels in the navigable waters of the United States. Virtually every craft afloat these days is a contributor to pollution. The number of pleasure boats has reached the staggering total of 8 million and the number of other vessels, from large liners to the small fishing boats which ply our waters, comes to about 150,000 annually. It is estimated that the discharge of all vessels in the United States for 1 day would equal the untreated discharge from a city the size of Buffalo or Cincinnati.

This threat from the myriad pleasure boats and other vessels has been recognized right in the locality of our Nation's Capital. In the Chesapeake Bay there are areas where oystermen are not permitted to dredge because the fecal matter from boat concentration has been absorbed into the oyster beds and affords a clear and present danger of hepatitis to any unsuspecting soul who might be served six oysters on the half shell from such source.

The answer to boat and vessel pollution is in the attachment of devices which contain for proper disposal all types of untreated sewage. There is no doubt that there will be much opposition to the attachment of such devices on existing vessels and the incorporation of these in the building of new vessels, but the conclusion that they are necessary is inescapable.

Probably the most significant theory about sewage from recreational boats is not only their increasing numbers but also their high degree of mobility. The high speeds, the ease of trailer boats, and our marvelous network of highways lets every area of this country open to this kind of pollution. If it cannot be controlled federally, it will not be effectively controlled at all.

In conclusion, I urge expeditious action on all bills which will effectively stop the prime causes of pollution. While my own immediate problem is Lake Michigan, I think decisive action by Congress now is necessary to set the gears of correction in motion. While the problem of clearing up a river or a tidal area is within the scope of possibility, it is rather widely believed that once a lake becomes polluted, it is

irretrievably lost. I am hopeful that this belief is not accurate and that ways and means will be found to restore the dissolved oxygen not only to the waters of Lake Michigan but also to the now dying Lake Erie.

Again let me assure you, Mr. Chairman, that you can count on my vote and my support on this vital matter.

Mr. McCARTHY. Our next witness is Thomas Hale Boggs, Jr., representing the Boating Industry Association.

We are always delighted to have you here, Tom.

STATEMENT OF THOMAS HALE BOGGS, JR., BOATING INDUSTRY ASSOCIATION

Mr. Boggs. Thank you, Mr. Chairman.

The Boating Industry Association is an association representing most of the pleasure craft manufacturers and manufacturers of accessory equipment.

I have here a prepared statement which I would just like to submit for the record. We also have five exhibits attached to the statement, one of which, exhibit A, is much too long, and the rest I would like to offer for the record.

Mr. McCARTHY. Without objection, your full statement and the exhibits will be put into the record at this point.

(Prepared statement and exhibits follow:)

STATEMENT OF THOMAS H. BOGGS, BOAT INDUSTRY ASSOCIATION ON VESSEL POLLUTION CONTROL

Mr. Chairman and Members of the Committee:

My name is Thomas H. Boggs, Jr. I am the Washington counsel of the Boating Industry Association (BIA), 333 North Michigan Avenue, Chicago, Illinois. The BIA is a non-profit national trade association representing 375 manufacturers of all kinds of pleasure boating equipment and providing many services of an educational and in informative nature to the entire industry and the boating public. In addition, the BIA works directly with boat owners in all parts of the country through its two consumer divisions, the Outboard Boating Club of America, serving members of affiliated boating clubs, and the Boat Owners Council of America serving individual boat owners.

Boaters have observed first hand more of the damages of pollution and littering of more of this country's waters than any other group of persons. Few groups have a bigger stake in clean water than boaters. Recognizing the potential seriousness of problems caused by pollution the industry took positive steps almost 10 years ago to encourage manufacturers to provide adequate treatment or retention devices. Every manufacturer of boats with toilet facilities was asked to provide adequate space so that a sewage treatment or retaining type device could be conveniently installed. Seven years ago, we published a standard with minimum space requirements for marine toilets in our annual Engineering Manual of Recommended Practices. (Exhibit A.) Manufacturers have responded affirmatively to these recommendations.

In addition, the BIA has worked closely with official and technical agencies in developing more precise data on the character and extent of pollution from watercraft and the most effective methods for treating effluent from vessels. In 1957, the Association developed and supported a model anti-pollution and anti-litter law which has been adopted, in whole or in part, in many states. And the Association has kept the industry well-informed on any new developments in this field to insure that their products are designed and manufactured in accordance with the most up-to-date technical information on the subject of sewage treatment.

Four years ago the National Association of State Boating Law Administrators appointed a Pollution Committee to investigate how much pollution boaters

were in fact contributing to our nation's waterways. After an exhaustive nationwide survey, the NASBLA Pollution Committee concluded that pollution from recreational boats was negligible in virtually all waters. A few specific congested mooring areas in stagnant waters were the only exceptions. The Committee further found that less than 10% of the nation's recreational fleet is equipped with marine toilets.

Although pollution from pleasure craft was not found to be a problem, the Committee realized it could become one in some areas as boating increased, and that the lack of a problem would not necessarily forestall a host of non-uniform legislative "solutions." As a result, the Committee recommended, and NASBLA adopted, a Model Act on Sewage Disposal and Littering from Vessels as a guide for jurisdictions which felt regulation necessary. (See Exhibit B.) The recommended Model Act has since been followed by several key boating states, including New York, Tennessee, Georgia, and North Carolina, and more states are expected to follow suit very soon.

The NASBLA Act prohibits untreated sewage discharges into the waters, but allows toilet use with chemical treatment devices meeting certain effluent standards, incineration or holding tanks. Just what a recommended minimum treatment standard should be has been studied at length by the National Sanitation Foundation of Ann Arbor, Michigan. This non-profit testing laboratory was assisted in this work by State and Federal health officers, the people who have the final say on acceptability of treatment devices in their respective jurisdictions.

In May of 1966, at Ann Arbor, Michigan, the National Conference on Watercraft Waste Disposal was held under the sponsorship of the National Sanitation Foundation, in cooperation with the U.S. Public Health Service and the Tennessee Valley Authority. Its objective was to review effluent criteria recommended by the Interdepartmental Committee on Sewage and Waste Disposal from vessels (established by the Division of Environmental Engineering of the Public Health Service) as they apply to pleasure craft. Another objective was the establishment of criteria for evaluating the performance of devices designed to treat wastes and render them acceptable for discharge from pleasure craft in accordance with the effluent criteria just mentioned.

This Conference was participated in by competent authorities representing state and federal Public Health agencies, state and federal Water Pollution Control bodies, marine and yachting organizations, and a number of manufacturers of devices that treat, retain or otherwise manage sewage produced in watercraft.

It was from that conference that the Joint Committee for Watercraft Waste Disposal Devices was formed. That Committee and its sub-committees evolved the present National Sanitation Foundation Standard. (Exhibit C.)

Endorsement of the NASBLA Model Act, implemented by the Sanitation Foundation's uniform performance standards for watercraft sewage treatment devices, has come from many quarters. In addition to the Outboard Boating Club of America, the National Boating Federation, a national organization of state boating clubs, is in favor of the approach. So is the National Conference of State Sanitary Engineers. Regrettably, this apparently is not the approach taken to date by the Federal Government. Two study reports of vessel discharges were recently prepared by the Secretary of the Interior through the Federal Water Pollution Control Administration—one for the Congress and one for the President. Boaters believe the data presented and the recommendations made in these studies are highly unrealistic. For example, the "studies" say that 1.3 million of the 8 million motorboats, sailboats, canoes and rowboats in the country are equipped with marine toilets. That's one out of every six boats! Yet, a recent survey asking all marine toilet manufacturers how many units they had produced since they were in business indicated total production of all marine toilet manufacturers combined to be only 500,000 to 700,000 units. Even if every unit were still in use, which is highly improbable, total production over the years has amounted to only half of what the FWPCA report claims are in use.

Clearly, the FWPCA researchers did not consult the National Association of State Boating Law Administrators, or the NASBLA Pollution Committee, or even knowledgeable boatmen when they came up with the breakdowns on the number and types of recreational craft equipped with marine toilets. The report says 90 percent of all inboard boats, 80 percent of all outboard boats over 16.5 feet in length and 50 percent of all sailboats without auxiliary power have toilets. For 1966, marine industry sales records show that 81 percent of all sailboats sold without auxiliary power were 15 feet or under, and about one third of these

were the surf-board-with-a-sail type. Yet, according to the FWPCA report, 50 percent of these sailboats under 15 feet in length have toilets. If this were the case, boaters should worry more about indecent exposure than pollution.

In view of the inaccuracy of the FWPCA's findings concerning the magnitude of discharges from pleasure craft, we would suggest that closer liaison with boating groups should be developed where none has existed. As a matter of fact, the National Association of State Boating Law Administrators suggested just that by resolution at their annual meeting in San Francisco last November. (Exhibit D.)

Granting that reasonable regulation of discharges from pleasure craft in some areas is desirable, although an infinitesimal aspect of the total pollution problem, the most effective solution from the boater's standpoint would be adoption of the NASBLA Model Act by all states—covering both waters of exclusive state jurisdiction and waters of concurrent state-federal jurisdiction. How can we get all states to do this on a uniform and reciprocal basis?

Federal legislation setting guidelines which the states will be obliged to follow is necessary to secure uniformity. There is precedent for this in the Federal Boating Act of 1958, under which to date 47 states have complied with Federal standards in exchange for the privilege of numbering pleasure craft on all waters within their territorial limits. In the same manner, NASBLA's Model Act on waste discharge from boats might be made Federal law. Whether state or Federally administered, boaters would have only one basic law governing them in pollution and littering matters. This answer seems very reasonable, logical, workable and in accord with various Federal water quality control laws which set guidelines, but leave primary responsibility for administration and enforcement to the states.

Initially, we feel that separate treatment of recreational and commercial or military craft should be given, either in separate sections of one bill or by two altogether separate bills. Recreational vessels and commercial or military vessels have little in common in terms of size, number of persons aboard, frequency and duration of use, space available for treatment facilities or waters traveled. Considerations of pollution control necessarily should be quite different for recreational vessels and commercial vessels.

For example, and most importantly, commercial craft are used almost exclusively upon the navigable waters of the United States—the major rivers, Great Lakes and coastal waters. Therefore, they can be effectively covered by a Federal pollution control act. On the other hand, while some recreational craft are used on navigable waters, a substantial proportion are used only on intrastate waters under exclusive State jurisdiction. A Federal vessel pollution act therefore only would go part-way toward covering recreational vessel use since it could apply only to Federal navigable waters. Stating it from the boatman's point of view, a Federal act would still leave the field open for state laws applicable to intrastate waters which could be non-uniform and even conflicting both between states and even within a state. Indeed, this conflict of vessel pollution laws prevails in some areas of the country right now. Such a confusing montage of non-uniform vessel pollution control laws cannot but create chaos and hardship for boatmen and enforcement personnel alike, and contribute little toward control of pollution.

The solution, we suggest, is an act which will cover not only recreational vessel pollution control on navigable waters, but which would provide incentive to the states to adopt like measures for intrastate waters. This will insure uniformity between the states and between state and federal law. We respectfully submit this may be best accomplished by Federal enactment of the essentials of what is known as the "Model Act on Sewage Disposal and Littering From Vessels" promulgated by the National Association of State Boating Law Administrators referred to earlier. (Exhibit B.)

Several states have already adopted the act or have very similar existing laws. This means a foundation for uniform laws already exists. Support for a Model Act could hardly be more widespread. The NASBLA Model Act has the endorsement of state boating officials, the boating industry and boating organizations, as well as sanitation and public health organizations. As in the Federal Boating Act of 1958, state administration of the program within federal guidelines is the incentive for state participation.

In addition, adoption of the essentials of the Model Act at the Federal level would still preserve and incorporate all of the necessary discretionary power and regulatory authority of the Secretary of the Interior. Modification of the NASBLA Model Act to achieve all of these goals is not difficult. We respectfully

submit a draft proposal illustrating this approach to pollution control from recreational vessels. (Exhibit E.)

Under the approach of the Model Act there is envisioned the development of standards for sewage discharges to be promulgated by the Secretary. However, the Secretary is instructed to consult with other appropriate governmental agencies and private groups.

It would be a mistake, in our opinion, to give any Federal agency absolute authority to set standards or to approve devices to control waste disposal from watercraft. There has to be close collaboration between the Federal government and state and local agencies responsible for water pollution control, public health, and boating law enforcement. Any rules or regulations established by Washington without such collaboration could result in Federal-State conflicts of law that would make matters worse for boaters, not only from state to state but when proceeding from state to Federal waters within the boundaries of the same state. This is a real danger. We submit it can be overcome by providing proper guidelines in the legislation, or at least by building a substantial legislative history which will afford no possible future misleading of Congressional intent.

If the Federal Water Pollution Control Administration had consulted and collaborated with state boating law administrators when they were investigating pollution from recreational watercraft, we believe they would have reached more realistic conclusions in the report they sent to Congress.

However, in our concern about the absolute necessity for uniformity, we should not overlook the fact that, to be truly effective, regulations also must be realistic. Some of the FWPCA recommendations have to date ignored this principle. A law which meets a specific problem in one area may be totally ineffective in another area. In fact, it may even help to magnify the problem. If it is completely impractical or impossible to comply with a particular regulation, it will be circumvented. And the result of such circumventions often creates new and greater problems and an overall disrespect for the law. This is especially true in regard to anti-pollution regulations.

I thank you for this opportunity to testify on this matter of great importance to us all. I shall be happy to attempt to answer any questions you may have.

EXHIBIT B—REPORT OF THE POLLUTION STUDY COMMITTEE NATIONAL ASSOCIATION OF STATE BOATING LAW ADMINISTRATORS

At the Oklahoma City meeting of the National Association of State Boating Law Administrators, held November 18-20, 1963, a Committee was appointed to develop a report on the nature and extent of pollution of the waters of the United States by recreational watercraft and to make recommendations relative thereto. The following were appointed as members of this Committee:

CHAIRMAN

Keith Wilson, Director, Michigan State Waterways Commission

MEMBERS

Bernard W. Chalecki, Director, Connecticut Boating Safety Commission
 Peter J. Gannon, Chief, New Jersey Bureau of Navigation
 John Grenoble, Member, Pennsylvania Fish Commission
 DuWayne Henrie, Boat Registration Section, Arizona Highway Department
 Milton Johnson, Director, Minnesota Boat & Water Safety Division
 James J. O'Brien, Director, New York Division of Motorboats
 Wilton Vaugh, Director, Massachusetts Division of Motorboats
 Ron Stone, Government Relations Department, Outboard Boating Club of America

A review of information provided to the Committee by the Outboard Boating Club of America indicated a reason for the concern of the Association in this area. According to OBC, a total of 23 states have already adopted legislation controlling the discharge of sewage from recreational wastecraft on some or all of the individual state's waters, while many other states are considering such action. These totals include only states specifically legislating on this subject and do not include those states which may have passed laws dealing with trash, garbage, litter, etc.

The approach to this problem by the various states appears to be characterized by its individuality. In almost every instance, the boat pollution laws adopted by one state have little or no resemblance to those adopted by others, even in the case of neighboring states. Legislation involving varying and differing standards presents a considerable problem to the boatman who wishes to use his boat in a number of different states.

Further complicating the picture is the propensity on the part of the individual states to select one type of anti-pollution device and to permit only its use in the particular state. Whether this is done deliberately or in ignorance of the existence of other equally suitable devices is not known. In any event, it further complicates the mobility of boats cruising on the waters of more than one state.

STUDY METHOD

In view of the extensive activities in the various states on this subject, it was concluded by the Committee that there must be available a number of detailed studies analyzing the extent of pollution of waters by recreational watercraft. Accordingly, the first action of the Committee was to attempt to gather together all such reports to permit an analysis of the nature and extent of pollution by recreational watercraft of the waters of the United States.

An extensive survey of Federal agencies and of agencies of all of the states was made to locate such reports. This survey resulted in turning up only two reports that dealt in any manner with this problem. One report deals with the effect of pollution from houseboats in the vicinity of Portland, Oregon, and was prepared by the Oregon State Sanitary Authority.

The second report, entitled "Survey of Marina and Watercraft Use in Relation to the Public Health Aspects", and jointly prepared by the Macomb County Health Department and Michigan Department of Health, dealt specifically with this problem.

Because of the inability of the Committee to assess the nature and extent of pollution by recreational watercraft from only two reports made in widely separated parts of the country, an alternative method of assessing this problem was developed. This was by means of a questionnaire designed to elicit responses from boating, health, and recreation officials throughout the country from which conclusions could be drawn. The questionnaire is reproduced as Appendix A.

The questionnaire was mailed to some 200 agencies in and out of government, both state and Federal, including public health departments, water pollution control boards or commissions, state boating law administrators, and virtually every Federal agency having any connection with waters used for recreation. A cover letter was provided with the questionnaire explaining the desire of the Committee to determine whether or not recreational boating is a significant contributor to the water pollution problem, and requesting the assistance of the addressee. The returns were most gratifying and extremely helpful. More than 90 replies were received representing one or more agencies in almost every state. A list of the agencies responding and a summary and analysis of the replies received is reproduced as Appendix B.

In the course of its study, the Committee collected a large number of newspaper clippings, magazine articles, and similar releases dealing with this subject. Many of these articles and clippings were especially helpful and presented insights into the over-all problem under study. Reproduction of these articles is not feasible, but several of those considered by the Committee are as follows: "Boat Sanitation" by Elbert Robberson, *Yachting* magazine, October, 1964; "Federal Policy Proposed on Disposal of Wastes", *The Waterways Journal*, July 11, 1964; and "Water Pollution from Boats", *Boating Industry* magazine, January, 1964.

THE EXTENT OF THE PROBLEM

The two reports dealing with pollution from houseboats and recreational watercraft were carefully reviewed by the Committee, because they were the only such reports located. An evaluation of the Oregon State Sanitary Authority Report on Houseboats is very well summarized by the conclusions stated therein and appearing on page 10 of the Report:

"1. Domestic wastes including garbage from approximately 294 houseboats are dumped without treatment into the Willamette and Columbia River in the vicinity of Portland. This represents a population of between 500 and 1,000

persons. Inclusion of boathouses, marinas, and other waterfront facilities would increase this number somewhat.

"2. The measurable organic and chemical pollution load from houseboats in the Portland area is relatively small compared to the total pollution load discharged from all sources.

"3. Aesthetic nuisance conditions resulting from floating materials and health hazards from pathogenic organisms are considered to be the significant pollutional factors involved.

"4. Collection and adequate disposal of houseboat wastes can be accomplished with reasonable application and modification of present equipment and techniques.

"5. All but one or two houseboats in the lower Willamette River are located at established marinas, in groups of 20 or more, which are within reasonable pumping distances of city of Portland sewers.

"6. All but 10 or so houseboats in the Columbia River, adjacent to the Portland area, are in groups of 5 or more and subject to service by group facilities.

"7. The requirement for treatment of wastes from houseboats and boathouses would make it possible to require installation of holding tanks on boats which could be pumped out for a nominal fee at practically any marina or moorage along the River.

"8. It is believed that the collection and treatment of disposal of wastes from houseboats and boathouses could be required and enforced under existing state statutes and regulations."

The significant conclusions are contained in paragraphs 2 and 3 where it is noted that the pollution load from the subject craft is relatively small compared to the total pollution load from all sources but that a nuisance and health hazard is created by floating wastes. The extent of the health hazard could undoubtedly be debated at considerable length, but the nuisance factor of floating waste materials cannot be refuted. It is to be noted that no mention of trash, litter, or similar materials is made in the report.

The Michigan Report resulted in conclusions very similar to those of the Oregon Report. The complete Summary and Conclusions can be found on page 23 of the Report and only selected paragraphs are reproduced here:

"2. While the study was designed to obtain data relative to sewage pollution and sanitation conditions at marinas it was evident from statements made under the item 'comments' on the questionnaire that there was great interest in watercraft safety (reckless driving, operator training, and operator licensing) and pollution other than sewage, i.e., trash, garbage, beer cans, wood or other floating debris.

"3. The bacteriological sampling program showed that the water quality at six of the fourteen stations was extremely variable with high coliform concentrations a significant percentage of the time. The eight remaining station showed a water quality quite variable but with coliform concentrations under 2500 for 95% of the time and no statistically significant difference detectable among these stations. The water quality at all stations was so variable that there was no statistically significant difference between any two stations or groups of stations. It was therefore not possible to measure the effect of pollution which might be contributed by a marina area into adjacent waters whether this be a stream or along the shoreline of a lake.

"4. The stations which showed the highest chloride concentrations also showed some of the highest biochemical oxygen demand concentrations and in nearly the same order, namely (4, 5, 1, 2, 8, and 3) and (5, 4, 1, 2, 8, and 3) respectively. Concentrations actually decreased from a point on the river above the marinas to a point on the river below the marinas. The opposite trend would be anticipated if pollution from marina areas which might be detected by a sampling program was contributing a significant pollution load to the receiving stream in relation to pollution already in the stream as measured by these parameters."

The Report also concluded, through the process of deductive logic, that raw sewage was being discharged from recreational watercraft:

"8. Observations of watercraft use while away from home port indicate the majority of one day trips cover from 3¼ to 7 hours on the average and it is evident that the head would be used under these extended use conditions. Since the high percentage of watercraft now in service are not equipped with holding tanks for sewage or macerator chlorinator devices, raw sewage is being discharged into the waters of the state from watercraft."

The Michigan Report made no recommendation or reference to the nuisance and/or health hazards created by floating wastes, nor was any reference made to trash, garbage, and litter, even though the Report did mention that great interest in these matters was evidenced by the completed questionnaires gathered as part of the Report. Both reports concurred in the fact that the pollution load attributable to houseboats and recreational watercraft was relatively small and in fact, could not even be measured in Michigan. Both also concluded that raw sewage was being deposited in the water from these craft.

An analysis of the questionnaires returned to the Committee established the fact that very few officials believed that pollution attributable to recreational watercraft was much of a problem. The results of the questionnaires are summarized in Appendix B but it should be noted that an average of all answers indicated that trash disposal from recreational watercraft was the greatest problem, followed by sewage, garbage and waste, in that order.

The Committee also reviewed such information as was available to determine the number of recreational watercraft within their various registered fleets that actually possessed marine toilets. Inasmuch as no statistical data was available on this subject, it was necessary to resort to estimates. It was concluded, after careful analysis, that a maximum of 10% of the recreational watercraft of any one state contained marine toilets and that the national average would probably be less than 5%. Necessarily, the craft with marine toilet were the larger craft which are generally located on coastal and Great Lake waters rather than on small land-locked lakes.

The general use patterns followed by owners of recreational watercraft were also noted. It was found that only a very few watercraft were used for an extensive periods of time as dwellings but that, rather, most use was concentrated on weekends, holidays, and during summer vacations. Further, the boating season of most states was found to be rather limited with the exception of the southern, southwestern, and western states. As an example, it was noted that in Michigan the boating season is regarded as extending from May 1 to November 1 a period of six months, but that virtually all boating use was confined to the months of June through early October. Even if it was assumed that 10% of all recreational watercraft in Michigan contained marine toilets, that six persons were regularly utilizing the watercraft, and that the average boat was in use in one form or another for 60 days per year, the extent of pollution attributable to these craft would certainly have to be classified as negligible.

COMMITTEE FINDINGS

From the two health reports on this subject that were turned up by its research, from the results of its questionnaire survey, and from the results of its own independent analysis, the only conclusion that can be reasonably established and logically defended by this Committee is that pollution from recreational watercraft is, at most, negligible. This pollution is so slight on the total scale of pollutant sources that it is, at this time, unworthy of the considerable attention it has been given.

To support the finding of this Committee as to the relative insignificance of pollution from recreational watercraft, the Committee draws the reader's attention to a report on pollution of the Detroit River and Lake Erie, released by the U.S. Public Health Service on May 8, 1965. The report resulted from a two and one-half year study by the Public Health Service of these waters and found that pollution had reached a stage hazardous to human health, fish, wildlife and recreation. The report further claimed that 1.6 million gallons of waste flow into the Detroit River annually, "one-third from municipalities and two-third from industries." The report charged that the Scott Paper Company alone discharged wastes "equivalent in oxygen-consuming capacity to the untreated sewage from a population of over 800,000 persons."

The report recommended "correcting the pollution from six municipalities, 4 industrial establishments, and three Federal installations" and estimated the cost of remedial measures at \$200 million. The subject is still under debate in Michigan and promises to be actively discussed for many years before the situation outlined in the report is corrected, if ever.

Based on the assessment by the Committee of the total boating population in this country with marine toilets, the patterns of use of such craft, and the total days per year they are in operation, it is the opinion of this Committee that the

pollution of the Detroit River which is caused by municipalities and industries of greater national concern than such pollution as is caused to the nation's waters by the total recreational boating fleet of this country.

But if the Committee is correct in its conclusion, then how can the vigorous legislative activities in this field on the state level and, now, on the Federal level, be explained? The only explanation available to the Committee is that curbing whatever pollution is attributable to recreational watercraft is considered to be reasonably easy, and is therefore a good place for health officials wishing to make a start in this field to begin. Further, because such legislation affects a relatively small percentage of the population of a given state and because the goal of the legislation is admittedly for the good of all, it is difficult for those opposed to such regulation or the form it takes to gain any appreciable support for their position.

If this has been the source of the considerable legislative activity on this subject in the past, then it is the inescapable conclusion of this Committee that it will continue to be in the future. That such legislation can and often does impose incalculable and unnecessary hardships on recreational boat owners hasn't deterred such efforts in the past and is unlikely to be of greater significance in the future.

The Committee predicts that legislation prohibiting entirely the use of a marine toilet on the waters of a given state will continue to be passed in the future as it has in the past, even though no action of any consequential nature is taken by the same state to clean up the heavy pollution of its waters caused by municipal and industrial wastes.

What can and should recreational boat owners or the National Association of State Boating Law Administrators do to correct this situation? Should we oppose each and every attempt to curb such pollution as can be attributed to recreational boating because it is of such insignificance in the total pollution picture? Should we advocate a total program to correct all pollution as an alternative to regulations covering boating alone? Or should the Association continually refer to this report and its conclusions in hopes that this alone will reduce legislative activity in this field?

Reasonable though any of these courses of action may appear, it is obvious that none of them will result in action favorable to recreational boat owners. Legislating against pollution in any form is gaining popularity, and opposing anti-pollution legislation or regulations is comparable to opposing motherhood or the American flag. The situation has passed the point where reasonableness is a criteria so that concerted opposition to such regulation by recreational boat owners or groups representing them, regardless of the facts in their favor, will accomplish nothing constructive and might even result in the adoption of harsher regulations than would otherwise be the case.

The Committee believes that what must be done by this Association and by other recreational boating interest groups in the country is recognize that regulation of this problem, regardless of its significance, is certain to continue; that such regulations will continue to vary considerably from state to state; that many, if not a majority, of the regulations in this area will be of the type completely prohibiting the discharge of wastes in any form, whether treated or not, from marine toilets; and that such regulations will be injurious to the mobility of recreational boating that this Association is attempting to foster in other fields.

If this is so, then what can be done to amend or modify these regulations so that they are less injurious to recreational boat owners and to the mobility of recreational craft? The solution suggested by the Committee is the preparation of a model law on this subject that will avoid the shortcomings of most of the present regulations and still alleviate the problem of the discharge of untreated wastes from recreational watercraft.

Before such legislation can be effective, however, there must be available anti-pollution devices capable of installation on recreational craft at a reasonable cost. An assessment of such devices is then necessary.

ANTIPOLLUTION DEVICES FOR RECREATIONAL WATERCRAFT

There are three principal types of treatment devices now available:

1. *Chlorinators*.—Chlorinators are devices designed to hold sewage for at least a nominal period of time to permit introduction of dosages of disinfectants to kill bacteria contained therein. To meet any reasonable health standard, such

units must be equipped with a macerator or with some other type of agitator which will cause the breakup of solids to permit disinfection and to inhibit settling of solids in the chlorinator.

2. *Incinerators*.—These units are designed to trap the waste material, generally in a previously inserted bag, and to hold the materials until the device is activated. Upon activation, the bag with the sewage materials is dropped into a burning chamber where it is consumed by a burner which is ignited by turning the burning control as prescribed. These units are usually provided with exhaust fans to remove odors from the area to over-board vents. Generally, appropriate controls are provided to assure that the device cannot be activated when the toilet is in use.

3. *Holding Tanks*.—A holding tank is simply a waste tank placed on board the vessel and attached to the marine toilet so that all materials are pumped from the toilet into the tank. Such devices can be emptied in one of two ways, the first through a pump attachment which empties the tank into a shoreside sewer or septic tank and the second by pumping the materials directly into the waters of the lake.

Each of these units has some disadvantages which should be mentioned.

1. *Chlorinators*.—An "Evaluation of Marine Toilet Chlorinators" is a report prepared by Syracuse University in 1962 for the New York State Department of Health and contains some excellent suggestions relative to the use of chlorinators. This report as well as the experience of others in using chlorinators indicates that the devices must retain the waste materials for a minimal period of time to assure adequate treatment by the disinfectant used with the device. Also, should the boat owner allow the disinfectant source to become depleted, there is no way that the unit can be designed to continue to hold the materials until a disinfectant is introduced. It is believed that this situation could be greatly alleviated simply by having manufacturers of such devices print on the devices themselves or on literature designed to be placed in the head of a boat, instructions as to its use. It is not considered probable that many boat owners who have had these units installed will permit them to be regularly operated in a manner designed to destroy their effectiveness.

2. *Incinerators*.—The principal objections to units of this nature relate to their size and to the fact that most use propane gas as fuel. In other respects, they are considered to be the most effective anti-pollutant device because they destroy the wastes entirely. Although the size limitation cannot easily be modified, the danger of introducing propane gas on board a boat can be almost completely reduced by a carefully designed and proper installation of the unit and the fuel bottles.

3. *Holding Tanks*.—Units of this nature seem to have the greatest appeal to health officials, probably because they are regarded as the next best thing to actually sealing a toilet. However, these installations are not without disadvantage. If holding tanks are to be pumped ashore, relatively expensive sewer installations at marinas are required. If they are to be emptied in outlying waters, the possibility of their being discharged at dockside will continue to exist and, should such happen, would completely negate the installation of the device. Holding tanks also require considerable space on board boats where space, regardless of the size of the boat, is always limited. Holding tanks should have chemicals added from time to time to reduce the increased bacteriological effects of retaining sewage for prolonged periods of time. The longer such materials are retained without the introduction of appropriate chemicals, the more virulent the waste materials become. However, it is believed that with the provision of appropriate instructions to the user, any boat owner utilizing such an installation will assure that it is used properly.

Although there are disadvantages to each of these units, it is not felt by the Committee that these are such that the only alternative to continued pollution is the sealing of toilets. Certainly these units will perform with no less effectiveness than the average municipal sewage treatment plant, and because of the boat owner's interest in unpolluted waters, it is believed by the Committee that the units will be carefully and properly maintained and operated.

It is therefore the conclusion of the Committee that suitable and adequate devices are presently available for installation aboard recreational watercraft that will treat sewage to a standard acceptable to most health officials. Since any of the three units above are acceptable treatment devices, and since the selection of one of the three by a boat owner will be based on personal considerations, it is recommended that a model law permit the use of any of the three devices.

MODEL LAW

After concluding that suitable anti-pollution devices were available for installation on recreational watercraft, the Committee requested the Outboard Boating Club of America to prepare a model law dealing with the general subject of pollution from recreational craft. This model law has been extensively reviewed by the Committee and others, and suggested revisions or modifications incorporated into the final draft which is included in this Report as Appendix C. This model law provides for several features that are worthy of individual mention.

To assure that the standards required by such legislation do not vary from state to state, they have been incorporated into the model act as a part thereof. This is most important, for one of the principal justifications of this model act to the Committee has been that adoption thereof nationally would greatly facilitate the mobility of recreational craft. If individual standards could be established by each state, this mobility would be completely destroyed and the purpose of the act entirely negated.

The Committee was also impressed by testimony of manufacturers of anti-pollution devices wherein they pointed out to the Committee that the trend in current legislation was to require a complete laboratory test of every anti-pollution device by its manufacturer before the unit would be accepted by the particular state. In an effort to reduce this expense to the manufacturer, and to avoid duplicate tests of an almost identical nature, the Committee has permitted the manufacturer in the model law to certify in writing on the basis of any test which the manufacturer makes of its unit, whether or not the unit meets the requirements of the model act.

In other respects, the model law has been drafted in such a manner as to assure that it can easily be used without major amendments in any State in the country. This was, of course, done intentionally in hopes that the goal of uniformity in this legislation would be further accommodated.

LITTER

During its investigations, the Committee was impressed with the number of persons who, when discussing pollution from recreational watercraft, were concerned only with the depositing of trash, garbage, and other materials in the water which, perhaps, could be more appropriately termed "litter". Before receiving the results of its questionnaire survey, it was the personal opinion of most of the Committee members that the litter problem was of greater concern than the problem of pollution, and the questionnaire results confirmed this belief.

American ingenuity being what it is, it appears that food and beverage containers are becoming more and more indestructible. Milk cartons, beverage cans and bottles, and other food containers are not only extremely resistant to deterioration through exposure to the elements, but most of them float, resulting in their accumulation on the beaches adjacent to heavily used waterways. Even when the items washed up on the beach are not necessarily dangerous to humans, they offend the senses because they are so foreign to the area. Since they do not appear to naturally waste away and since they are not capable of being eaten by fish, fowl, or wildlife, the only way they can be removed is through human action and such is difficult, if not impossible, when the cost of patrolling the thousands of miles of shoreline of this nation is considered.

This does not mean that recreational boat owners are the primary offenders in this area. There is no question in the Committee's mind that a substantial amount of this litter is being deposited by the crews of commercial vessels plying these waters. Because such crews eat all meals on board and naturally consume a far greater amount of foods per person than is consumed by recreational boat owners who, although greater in numbers, cruise much less and appear to eat on board less frequently, it is apparent that the continued practice of dumping all waste materials over the side into the waters will result in a large accumulation of litter on the beaches.

The litter problem is not easily resolved simply by passing legislation. This is a problem which can only be resolved through a direct attack utilizing all possible means to educate every segment of the public as to the problem and its likely effects if not abated. Appropriate legislation can be helpful, however, to ensure that marinas and public boating facilities provide trash receptacles

and that commercial vessels are required by law to destroy materials through incineration or to place them in trash receptacles for disposal on shore. Because of this, provisions of this nature are included in the model law recommended herein by the Committee.

IN CLOSING

The Committee has attempted to maintain an objective approach to the problems covered by this report. As more and more evidence was uncovered indicating the miniscule nature of the pollution problem and the gargantuan efforts being made by persons who should know better to correct it, the objectivity of the Committee lessened considerably. Still, we believe we have well and amply supported our conclusions herein.

The Committee was appalled at the tremendous amount of industrial waste and untreated sewage being regularly deposited in the lakes, streams and rivers of this country. Although it was gratifying to the Committee to establish to its complete satisfaction that virtually none of this pollution was the result of the use of recreational watercraft, this limited satisfaction was completely overwhelmed by the staggering knowledge of the condition of much of our water. Indeed, unless much stronger efforts to correct this situation are made in the future than have been made in the past, there may well be no recreational watercraft in existence to worry about because no waters suitable for recreation will remain.

APPENDIX A—QUESTIONNAIRE ON WATER POLLUTION BY RECREATIONAL WATERCRAFT

STATE OF MICHIGAN,
WATERWAYS COMMISSION,
DETROIT, MICH., May 25, 1964.

DEAR SIR: The National Association of Boating Law Administrators is an organization consisting of State officials concerned with programs involving the registration, regulation, and development of facilities for recreational watercraft.

Because of the considerable concern being expressed throughout the country at this time about the continuing pollution of our water, it is the desire of this Association to determine the extent of such pollution attributable to recreational boating. After basic determinations of this type have been made, it is the further intent of the Association to make recommendations to the various States of ways to combat pollution from this source.

To assist the Association's Pollution Study Committee, it is requested that you complete the enclosed questionnaire and return it to the Outboard Boating Club of America which is serving as special Staff Assistant to the Committee on this study. If you are unable to complete the questionnaire yourself, it is requested that the form be forwarded to the appropriate State agency having jurisdiction over this matter.

Your cooperation in this important study will be most sincerely appreciated.

Very truly yours,

KEITH WILSON,
*Chairman, Pollution Study Committee,
National Association of Boating Law Administrators.*

QUESTIONNAIRE ON WATER POLLUTION BY RECREATIONAL WATERCRAFT

Completed by

NAME _____

REPRESENTING _____

ADDRESS _____

The object of this questionnaire is to try to develop information and data on the extent of water pollution attributable to recreational boating, whether or not such pollution is a significant factor, and the nature and measure of corrective action to be taken, if any, which will provide a remedy without unduly penalizing the boat owner.

For purposes of this study, the term "recreational watercraft" is defined as every description of vessel, regardless of method of propulsion, which is used or capable of being used as a means of locomotion on the water for recreational pursuits.

1. Can you estimate, from boat registration data or any other appropriate source, the number of recreational watercraft in your State *with* marine toilets? Yes ---- No ----

2. If the answer is "Yes," please indicate in the following space how many recreational watercraft with marine toilets you estimate to be operating on waters in your State.

3. If your area of jurisdiction is defined other than by state boundaries, please explain and, if possible, estimate the number of recreational watercraft with marine toilets in your area.

4. Can the total number of recreational watercraft with marine toilets in your State or area be broken down according to boat size? Yes ---- No ----

5. If the answer is "Yes," please indicate in the spaces below the number of recreational watercraft with marine toilets in your State or area in each of the following size groups:

----- Less than 26 feet in length
 ----- 26 feet to less than 40 feet in length
 ----- 40 feet to not more than 65 feet in length

6. If you have a numerical breakdown of recreational watercraft with marine toilets classified other than by size or length of the vessel, we would appreciate having this information. Please show any date in the following space.

7. Can you estimate the number of recreational watercraft *without* marine toilets in your State or area? Yes ---- No ----

8. If the answer is "Yes," please indicate how many.

9. Below are listed the types of water, some or all of which may exist in your State or area. Please mark the degree and kind of pollution FROM RECREATIONAL CRAFT ONLY on your waters.

Mark the degree of pollution by circling #1, 2, 3 or 4. For example, on rivers and streams, sewage and/or garbage, trash and waste FROM RECREATIONAL CRAFT are possibly contributing to pollution. If, in your State or area, sewage is a MAJOR contributor to pollution, circle #1; if MODERATE, circle #2; if a MINIMAL contributor, circle #3; if it does NOT contribute, circle #4. Do the same with garbage, trash and waste, marking the degree of each in each type of water.

Example: Rivers and streams Sewage Garbage Trash Waste
 1 2 ③ 4 1 2 ③ 4 1 ② 3 4 1 2 3 ④

DEFINITIONS

Sewage: The contents of a drain, especially human excrement.

Garbage: For example, animal or vegetable matter from a kitchen, market or store.

Trash: Something discarded as no longer useful or not useable, especially paper, metal, wood, glass or plastic products.

Waste: Material lost or unused during a process, leakage, e.g., motor oil.

KEY

1. Circling this number means that the kind of pollution listed is a major contributor to pollution in your area.

2. Circling this number means a moderate contribution to pollution.

3. Circling this number means a minimal contribution to pollution.

4. Circling this number means no contribution to pollution.

Type of water	Kinds of pollution															
	Sewage				Garbage				Trash				Waste			
Coastal or ocean.....	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Great Lakes.....	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Inland lakes:																
Under 500 acres.....	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
500 acres or over.....	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Rivers and streams.....	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Reservoirs.....	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

10. How is the problem of pollution from recreational watercraft being handled in your State or area: by regulation? ___ by education? ___ otherwise? ___ Please elaborate.

11. Do you have any suggested solutions over and above what is already being done to combat pollution from recreational watercraft in your State or area?

12. To your knowledge, have any studies been made in your State or area regarding contribution to the water pollution problem by recreational watercraft? Yes ___ No ___ (In answering the foregoing, you may include studies by public

health or water pollution agencies of Federal, state or local government, and/or studies by universities and private research organizations or any other studies of which you may know.)

If the answer is "Yes," and copies of these studies are available in your files, we would greatly appreciate your sending one of each to us along with this completed questionnaire.

If extra copies of these studies are unavailable to you, it is requested that you furnish all appropriate names and addresses where we can write for copies of such studies. Please give these sources of information in the space provided below.

13. In your opinion, are boating groups and individuals self-policing in efforts they make to keep the water clean and shoreside areas clean for their own sake? _____

14. Do you think marinas are contributing to water pollution by lack of adequate facilities at docking and mooring areas to remove sewage from boats or garbage and trash deposited in the water? Yes _____ No _____ Please comment.

15. Additional comments, if any _____

Please return this questionnaire, upon completion to: Outboard Boating Club of America, 307 North Michigan Avenue, Chicago, Ill., 60601.

APPENDIX B—FINDINGS OF WATER POLLUTION QUESTIONNAIRE SURVEY

FINDINGS OF WATER POLLUTION QUESTIONNAIRE SURVEY

[Scale of degree of pollution: 1-1.5, major; 1.6-2.5, moderate; 2.6-3.5, minimal; 3.6-4, no problem]

Kind of water	Sewage	Garbage	Trash	Waste	Average value of answer
Coastal-ocean (30 responding).....	3.0	3.3	3.1	3.3	3.2
Great Lakes ¹ (7 responding).....	2.9	2.9	2.7	3.1	2.9
Inland lakes:					
Under 500 acres (50 responding).....	3.2	3.2	2.8	3.1	3.1
500 acres or over (45 responding).....	3.1	3.0	2.7	3.1	3.0
Rivers and streams (54 responding).....	3.1	3.2	3.0	3.1	3.1
Reservoirs (43 responding).....	3.2	3.1	2.9	3.3	3.1
Average value of answer.....	3.1	3.2	2.9	3.2	

¹ The figures for the Great Lakes may be misleading inasmuch as the total number of responses concerning this type of water was only 7. Therefore, a single extreme response will affect the final average answer more than a single such response would in any of the other "Kind of water" categories.

A. How is the problem of pollution from recreational watercraft being handled in your state area? (52 responding)

Regulation, 42.3%; Education, 21.2%; Both, 36.5%.

B. Are boating groups and individuals self-policing in efforts they make to keep the water shoreside areas clean for their own sake? (58 responding)

Yes, 39.6%; No, 46.6%; boating groups and clubs are but not individuals, 13.8%.

C. Do you think marinas are contributing to water pollution, etc.? (61 responding)

Yes, 62.3%; No, 37.7%.

Of 91 State and Federal agencies who answered to questionnaire only 8 cited pollution from recreational watercraft as a major contributor to the over-all water pollution problem by circling #1 on the questionnaire form. They and the kind of pollution they stressed are as follows:

1. Division of Water Safety, Alabama Conservation Department—Sewage and waste on rivers and streams

2. Chief Sanitary Engineer, Arkansas State Board of Health—Trash on lakes under 500 acres; trash and waste on lakes 500 acres or over; trash and waste on rivers and streams; garbage, trash and waste on reservoirs

3. Georgia Department of Public Health—Garbage and trash on lakes under 500 acres

4. Michigan Department of Health—Trash on Great Lakes

5. Sanitary Engineering Division, North Carolina State Board of Health—Sewage on coastal or ocean waters, lakes under 500 acres, lakes over 500 acres, rivers and streams, and reservoirs

6. Municipal Waste Section, Division of Water Resources, West Virginia Department of Natural Resources—Sewage and waste on rivers and streams
 7. Region 6, U.S. Forest Service (Oregon and Washington)—Trash on lakes under 500 acres
 8. Boat License Division, Illinois Department of Conservation—Sewage and waste on rivers and streams.

AGENCIES RESPONDING TO QUESTIONNAIRE

Division of Water Safety, Alabama Conservation Department
 Boat Registration Branch, Arizona Motor Vehicle Division
 Water Quality Control Board, California Resources Agency
 Water Pollution Control Engineer, Colorado Department of Public Health
 Sanitary Engineering Division, Connecticut State Department of Health
 Small Boat Safety Division, Delaware Commission of Shell Fisheries
 Engineer, Florida Board of Conservation
 Division of Water Resources, Florida Board of Conservation
 Georgia Department of Public Health
 Environmental Health Engineering, Hawaii Department of Health
 Idaho Motor Vehicle Bureau
 Division of Public Health, Alaska Department of Health & Welfare
 Chief Sanitary Engineer, Arkansas State Board of Health
 California Division of Small Craft Harbors
 Bureau of Sanitary Engineering, California Department of Public Health
 Chief Boat Warden, Colorado Game, Fish & Parks Department
 Boating Safety Commission, Connecticut Dept. of Agric. & Natural Resources
 Harbor Precinct, Washington, D.C. Metropolitan Police Department
 Florida Boating Council
 Bureau of Sanitary Engineering, Florida State Board of Health
 Georgia Game & Fish Commission
 Harbors Division, Hawaii Department of Transportation
 Public Health Biologist, Engineering and Sanitation Division, Idaho Department of Health
 Kansas Forestry, Fish & Game Commission
 Kentucky Water Pollution Control Commission
 Maine Water Improvement Commission
 District Engineer, Maryland Department of Water Resources
 Massachusetts Division of Motorboats
 Michigan State Waterways Commission
 Section of Water Pollution Control, Minnesota Department of Health
 Water Pollution Board, Missouri Department of Public Health & Welfare
 Montana Pollution Control Sect., Aquatic Biol., Montana State Board of Health
 Boating Division, Nebraska Game, Forestation & Parks Commission
 Motorboat Section, Nevada Department of Motor Vehicles
 New Jersey Marine Patrol
 New Mexico Park & Recreation Commission
 Division of Environmental Health Services, New York Department of Health
 Sanitary Engineering Division, North Carolina State Board of Health
 Division of Water Supply & Pollution Control, North Dakota State Department of Health
 Ohio Division of Watercraft
 State Sanitary Authority, Oregon State Board of Health
 Division of Harbors & Rivers, Rhode Island
 Rhode Island Department of Health
 Division of Law Enforcement, South Dakota Game, Fish & Parks Department
 Boat Licensing Division, Illinois Department of Conservation
 Superintendent of Waters, Iowa Conservation Commission
 Division of Boating, Kentucky Department of Public Safety
 Boating Division, Maryland Department of Chesapeake Bay Affairs
 Sanitary Biologist, Massachusetts Department of Public Health
 Michigan Department of Health
 State Boating Safety Committee, Mississippi Game & Fish Commission
 Sanitary Engineer Director, Water Supply and Pollution Control, Missouri Department of Health, Education & Welfare
 Montana State Board of Health
 Environmental Health Services, Nebraska Department of Health

Nevada State Health Department
 New Hampshire Water Pollution Commission
 New Mexico Department of Public Health
 Division of Motorboats, New York Conservation Department
 Division of Stream Sanitation, North Carolina Dept. of Water Resources
 North Carolina Wildlife Resources Commission
 North Dakota Game & Fish Department
 Oklahoma Planning & Resources Board
 Oregon State Marine Board
 Division of Sanitary Engineering, Pennsylvania Department of Health
 Division of Boating, South Carolina Wildlife Resources Department
 Tennessee Game and Fish Commission
 Texas Department of Health
 Utah Boating Division
 Sanitary Engineering Section, Washington State Department of Health
 Municipal Waste Section, Division of Water Resources, West Virginia Department of Natural Resources
 Sanitary Engineering, Wisconsin State Board of Health
 Wyoming Game & Fish Commission
 Motor Vehicle Division, Texas Highway Department
 Virginia Commission of Game & Inland Fisheries
 Washington Pollution Control Commission
 West Virginia Department of Health
 Port Advisor, Wisconsin Department of Resource Development
 Wisconsin Department of Conservation
 Wyoming Department of Public Health

U.S. COAST GUARD

Third District (New Jersey, Connecticut, Vermont, portions of New York, Pennsylvania, Delaware)
 Eighth District (Louisiana, Texas, New Mexico, portions of Alabama, Arkansas, Mississippi, Georgia and Florida)
 Thirteenth District (Washington, Oregon, Idaho and Montana)

U.S. BUREAU OF RECLAMATION

Region 2 (California)
 Region 4 (Colorado, Wyoming, New Mexico, Arizona)
 Region 5 (Oklahoma, Texas, Colorado, Kansas, New Mexico)

U.S. FOREST SERVICE

Region 5 (California)
 Region 6 (Oregon and Washington)
 Bureau of Sport Fisheries and Wildlife
 Regional Office, Oregon
 Headquarters
 Bureau of Outdoor Recreation
 National Park Service
 National Capital Region
 Tennessee Valley Authority

ANALYSIS OF RESPONSES TO QUESTIONS 11 AND 15 OF WATER POLLUTION QUESTIONNAIRE SUBMITTED BY WATER POLLUTION STUDY COMMITTEE, NATIONAL ASSOCIATION OF BOATING LAW ADMINISTRATORS

It would appear from the questionnaire that the pollution problem created by recreational watercraft is considered to be, in most waters, negligible. A few quotes from the questionnaire will suffice in this regard:

"In my opinion, pollution from recreational craft is infinitesimal."

"Make cities and communities put in proper disposal plants. Get at the source—clean up the big polluters like cities, towns, industry and shore cottages."

"Most of the trash in our freshwater streams is left by people fishing on the banks."

Answers to the questionnaire indicated that, of the small part of the pollution problem created by recreational watercraft, trash thrown overboard by individ-

uals was of the greatest concern. Most individuals believed that members of boating organizations, clubs, etc., are fairly well self-policing. The majority of those replying suggested education through literature, posters, and clubs as the best and ultimate solution to stopping whatever pollution is being contributed by recreational watercraft users—"the water they pollute is their own" idea. An example of a successful education program against water pollution is that conducted by the Ohio River Valley Water Sanitation Commission, which has done a big job in the last few years through educational programs.

It was the consensus of those replying that the marine toilet is not a noticeable contributor to water pollution where it exists, with the exception of a few areas of heavy boating concentration, notably marinas. Those replying said that marinas could and should solve their problems by providing adequate shore facilities and regulating marine toilet use by those docked at the marina. Rough figures indicate that on a nationwide average, less than 10% of all recreational watercraft have marine toilets. Necessarily, these are larger craft which are found more often on coastal and Great Lakes waters than on small land-locked lakes.

With the expected increase in recreational boating, there was some concern expressed about marine toilets becoming a pollution problem in the future. Most thoughts expressed in this area were that if the problem does arise, it could best be handled by installation of various treatment devices on marine toilets, including chlorination, incineration, and holding tank systems. Where there are regulations, the trend is noticeably away from toilet sealing restrictions and toward treatment systems. The sealing restrictions, operating against nature, decidedly discourage recreational boating and also create administrative headaches.

Virtually all who made suggestions of any nature, stressed the idea of uniformity among the states in implementing regulations to control this matter. Without uniformity, it was felt that new regulations would be unreasonably burdensome on interstate boaters as well as difficult to enforce.

APPENDIX C—A MODEL ACT TO PROHIBIT LITTERING AND THE DISPOSAL OF UNTREATED SEWAGE FROM BOATS

A MODEL ACT TO PROHIBIT LITTERING AND THE DISPOSAL OF UNTREATED SEWAGE FROM BOATS

Title

An act to regulate the disposal of sewage from watercraft and to prohibit littering of waterways

§ 1. Definitions

For purposes of this Act, unless the context clearly requires a different meaning:

(a) The term "watercraft" means any contrivance used or capable of being used for navigation upon water whether or not capable of self-propulsion, except passenger or cargo-carrying vessels subject to the Interstate Quarantine Regulations of the United States Public Health Service adopted pursuant to Title 42 United States Code § 241 and 243.

(b) The term "sewage" means all human body wastes.

(c) The term "litter" means any bottles, glass, crockery, cans, scrap metal, junk, paper, garbage, rubbish, or similar refuse discarded as no longer useful or useable.

(d) The term "marine toilet" means any toilet on or within any watercraft to discharge waste.

(e) The term "waters of this State" means all of the waterways on which watercraft shall be used or operated.

NOTE: In some states it may be desired to limit the application of this Act to certain waters only and thereby exempt large bodies of water or water areas that are remote from population centers and on which there is no congestion and no conceivable boat pollution problem. The waters subject to pollution control under this Act could be enumerated or the state agency which is designated to administer the Act could be authorized to make a finding that a particular waterway should or should not be affected.

(f) The term "person" means an individual, partnership, firm, corporation, association, or other entity.

(g) The term "Department" means the (name of the State agency which shall administer this Act).

The choice of agency lies within the discretion of each state. It is recommended, however, that consideration be given to the state agency dealing with boating matters in general.

§ 2. *Littering or polluting water—restrictions*

(a) No person shall place, throw, deposit, or discharge, or cause to be placed, thrown, deposited, or discharged into the waters of this State, any litter, sewage, or other liquid or solid materials which render the water unsightly, noxious or otherwise unwholesome so as to be detrimental to the public health or welfare or to the enjoyment of the water for recreational purposes.

(b) It shall be unlawful to discharge, dump, deposit or throw garbage into the waters of this State from a watercraft engaged in commerce.

This section is deemed sufficiently broad and flexible to prohibit any act committed on shore, in the water, or from aboard any description of watercraft, which litters or tends to pollute the water.

§ 3. *Marine toilets—restrictions*

(a) No marine toilet on any watercraft used or operated upon waters of this State shall be operated so as to discharge any untreated sewage into said waters directly or indirectly.

(b) No person owning or operating a watercraft with a marine toilet shall use, or permit the use of, such toilet on the waters of this State, unless the toilet is equipped with facilities that will adequately treat, hold, incinerate or otherwise handle sewage in a manner that is capable of preventing water pollution.

(c) No container of sewage shall be placed, left, discharged or caused to be placed, left or discharged in or near any waters of this state by any person at any time.

This section prohibits the discharge of any untreated sewage from marine toilets.

§ 4. *Marine toilets—pollution control devices*

(a) After the effective date of this Act every marine toilet on watercraft used or operated upon the waters of this State shall be equipped with a suitable pollution control device in operating condition.

(b) Pollution control devices that are acceptable for purposes of this Act are:

1. Facilities that macerate or grind sewage solids and which, by chlorination or other means, disinfect the remnants before discharge into the water.

2. Holding tanks which retain toilet wastes for disposal at dockside or on-shore pumping facilities or in deep waters away from shore.

3. Incinerating type devices which reduce toilet wastes to ash.

4. Any other device that is tested by a recognized testing laboratory and determined to be effective in arresting the possibility of pollution from sewage passing into or through marine toilets.

This section recognizes that there are a variety of devices on the market designed to eliminate the possibility of water pollution from sewage passing into or through toilets aboard watercraft. Many of these devices have been tested by various state public health and water pollution control agencies and independent laboratories and found to be efficient for their purpose. However, with further improvements and innovations likely in this product area in the future, it is unwise to "freeze" specifications for such devices in statutory language. All technological changes can be readily incorporated into rules and regulations.

The desirability of nationwide uniformity in requirements for marine toilet pollution control devices cannot be emphasized too strongly. Boatmen will have to incur additional expense to install and maintain such devices. It would be a hardship and an inconvenience for boatmen traveling from state to state to be subjected to different jurisdictional standards of acceptability of these devices.

§ 5. *Marine toilets—chemical treatment facilities—standards*

(a) Every chlorinator or chemical treatment facility shall be securely affixed to the interior discharge opening of a marine toilet, and all sewage passing into or through such toilet shall pass solely through such treatment facility.

(b) Sewage passing through a marine toilet equipped with a chlorinator or chemical treatment facility shall be deemed untreated unless the effluent meets the following minimum standards:

1. Sufficiently divided into fine particles so as to be free of unsightly solids.
2. Containing 1,000 or less coliform per 100 ml.

This standard meets the requirements of the U. S. Public Health Service and is acceptable by most state public health agencies for swimming and bathing purposes.

(c) The chlorinator or chemical treatment facility shall be of a type which functions automatically with the operation of the marine toilet, does not depend on septic action as part of its treatment, is easy to clean and maintain, and does not permit the escape of dangerous gases or obnoxious odors.

(d) The disinfecting agent used in the facility shall be of a kind that does not necessitate too frequent replenishment, is easily obtainable, and when discharged as a part of the effluent is not toxic to humans, fish or wildlife.

The foregoing standards are generally acceptable under existing state marine chlorinator laws. In the interest of uniformity they are recommended to other states proposing the adoption of such laws.

§ 6 Marine toilets—standards for manufacturers of pollution control devices

Every manufacturer of a marine toilet pollution control device described in this Act shall certify to the Department in writing that his product meets the standards set forth in this Act or in any implementing regulations adopted by the Department. Every such certified statement shall be accompanied by a test report showing that the product meets the prescribed standards. It shall be unlawful to sell or to offer for sale in this State any marine toilet pollution control device that has not been so certified and approved by the Department.

§ 7. Certificate of number

The Department may require persons making application for a certificate of number for a watercraft pursuant to (statutory citation of State Boat Numbering Act to be entered here) to disclose whether such water craft has within or on it a marine toilet, and if so, to certify that such toilet is equipped with a suitable pollution control device as required by this Act. The Department is further empowered to direct that the issuance of a certificate of number or a renewal thereof be withheld if such device has not been installed as required by this Act.

§ 8. On-shore trash receptacles

The owner or whoever is lawfully vested with the possession, management and control of a marina or other waterside facility used by watercraft for launching, docking, mooring and related purposes shall be required to have trash receptacles or similar devices designed for the depositing of trash and refuse at locations where they can be conveniently used by watercraft occupants.

§ 9. Education

The Department is hereby authorized to undertake and to enlist the support and cooperation of all agencies, political subdivisions, and organizations in the conduct of a public educational program designed to inform the public of the undesirability of depositing trash, litter, and other materials in the waters of this State and of the penalties provided by this Act for such action, and use funds provided by the Legislature for this purpose. The Department is further authorized to utilize all means of communication in the conduct of this program.

§ 10. Enforcement

All watercraft located upon waters of this State shall be subject to inspection by the Department or any lawfully designated agent or inspector thereof for the purpose of determining whether such watercraft is equipped in compliance herewith. The Department is further authorized to inspect marinas or other waterside public facilities used by watercraft for launching, docking or mooring purposes to determine whether they are equipped with trash receptacles and/or sewage disposal equipment.

§ 11. Local regulations prohibited

Through the passage of this Act, the State fully reserves to itself the exclusive right to establish requirements with reference to the disposal of sewage from watercraft. In order to ensure state-wide uniformity, the regulation by any political subdivision of the State of sewage disposal from watercraft is prohibited.

§ 12. Rules and regulations

The Director of the Department is hereby authorized and empowered to make, adopt, promulgate, amend and repeal all rules and regulations necessary, or convenient for the carrying out of duties and obligations and powers conferred on the Department by this Act.

§ 13. Filing of regulations

A copy of the regulations adopted pursuant to this Act and any of the amendments thereto, shall be filed in the office of the Department and in the office of the (official State record keeping agency). Rules and regulations shall be published by the Department in a convenient form.

§ 14. Penalties

(a) Every manufacturer of a marine toilet pollution control device who violates Section 6 of this Act or any regulations adopted by the Department pursuant thereto shall be deemed guilty of a misdemeanor and upon conviction shall be punished with a fine of not more than \$_____.

(b) Any person who violates any other provision of this Act or regulations of the Department adopted pursuant thereto shall be deemed guilty of a misdemeanor and upon conviction shall be punished with a fine of not more than \$_____, or by imprisonment of not more than _____ days, or by both such fine and imprisonment at the discretion of the court.

§ 15. Savings clause

If any court shall find any section or sections of this Act to be unconstitutional or otherwise invalid, such findings shall not affect the validity of any sections of this Act which can be given effect.

§ 16. Effective date

The provisions of this Act with reference to requiring watercraft with toilet facilities to be equipped with pollution control devices shall take effect three years from the date of the adoption of this Act. The provisions of this Act prohibiting littering the waterways shall take effect immediately.

It is suggested that the effective date of this Act be delayed so that all persons affected by its provisions will have a reasonable amount of time to become acquainted with it and secure the required treatment devices.

EXHIBIT C—THE NATIONAL SANITATION FOUNDATION STANDARD FOR WATERCRAFT SEWAGE DISPOSAL DEVICES (ADOPTED FEBRUARY 15, 1968)

SECTION 1—GENERAL

1.00 COVERAGE: This Standard covers devices intended for the control of sewage aboard watercraft. Said devices may be designed for treatment and discharge, treatment and storage, holding or destruction of sewage, or any combination thereof, intended for use aboard watercraft. It shall include those appurtenances and/or attachments thereto that are necessary for the proper function of said devices or which modify their operation or function.

1.01 MINIMUM REQUIREMENTS: These Standards are established for the evaluation of equipment covered herein and are considered to be basic and minimum requirements.

1.02 ALTERNATE MATERIALS: Variations are permissible when they tend to make the equipment more resistant to corrosion, wear and physical damage, or if they improve the general operation and performance of the device. Variations shall be approved prior to their use. Where specific materials are mentioned, it is understood that the use of other materials proved to be equally satisfactory in every respect will be acceptable.

1.03 REVIEWS AND REVISIONS: Following adoption of the Standard and prior to its printed publication, a general review shall be carried out by the National Sanitation Foundation Committee on Watercraft Sewage Disposal Devices to determine the adequacy and appropriateness of the requirements and to ascertain if additional requirements are indicated. Subsequent to the printed publication of this Standard, complete review of the Standard shall be conducted at intervals of not more than three years to determine what changes, deletions, or additions, if any, are necessary to maintain current and effective requirements consistent with new technology and progress. These reviews shall be conducted

by appropriate representatives from the public health, industry, safety agencies and user groups. Final adoption of revisions shall be in accordance with the procedures established by the NSF Committee on Watercraft Sewage Disposal Devices.

SECTION 2—DEFINITIONS

2.00 BY-PASS: The term "by-pass" shall mean any provisions, mechanical or functional, by which an operator can selectively discharge untreated sewage into the waterway.

2.01 FAILSAFE: The word "failsafe" shall mean failure in a manner that will automatically preclude discharge of untreated sewage to the degree established in this Standard, when installed and operated in accordance with the manufacturer's instructions.

2.02 FRESH WATER: Those waters having a specific conductivity less than a solution containing 6000 ppm of Sodium Chloride. (9,400 micro ohms resistance)

2.03 SALT WATER: Those waters having a specific conductivity in excess of a solution containing 6000 ppm of Sodium Chloride. (9,400 micro ohms resistance)

2.04 WATERCRAFT: A floating vessel, intended to accommodate not more than 40 persons.

2.05 SEWAGE: The term "sewage" means all human body wastes.

2.06 SEALING: The word "sealing" shall mean attachment of a fastener which cannot be removed without evidence thereof.

2.07 TECHNICAL WORDS AND TERMS: Technical words and terms used in the context of this Standard shall be understood to be as defined and used in nationally recognized test methods and procedures as herein referenced.

SECTION 3—MATERIAL

3.00 GENERAL: Materials used in the construction of watercraft sewage disposal devices shall be capable of withstanding exposure to the intended use environment, with special attention to the operation of watercraft, the corrosive actions of chemical intended for use in connection therewith and the corrosive actions of fresh and/or salt water.

3.01 DURABILITY: All materials shall be durable and capable of withstanding the normal stresses incident to shipping, installation and operation. They must be structurally sound, under operation conditions.

3.02 DISSIMILAR MATERIALS: Dissimilar materials may be used but shall have galvanic compatibility.

3.03 WELDING: When weldments are used, the weld area and deposited weld material shall meet the applicable corrosion resistant requirements. (See Items 3.00 and 3.02)

SECTION 4—DESIGN AND CONSTRUCTION

4.00 GENERAL: A watercraft sewage treatment or storage device shall be designed and constructed such that the intended purpose of the device, when installed and operated in accordance with the manufacturer's instructions, shall not be adversely affected by operation of the watercraft nor by the normal environment to which it is subjected. Normal conditions shall include vibration, pitch, roll, heel, shock, temperature and chemicals used. The device shall be free of non-functional rough or sharp edges, or other hazards which could cause injury to persons operating or servicing the unit.

4.01 FAILSAFE: All devices shall be "failsafe".

4.011 There shall be a positive and recognizable indication to the user that the system has failed (non-operative or malfunctioning).

4.02 BY-PASS: Devices shall be classified as to whether they are "with" or "without" by-pass provision. All literature and the data plate (see Item 4.09) shall state the appropriate classification. If a "by-pass" is provided in or on a sewage disposal device it shall provide positive closure and provisions shall be made for sealing same.

4.03 HOLDING (STORAGE) TANK: When a device or appurtenance is designed, or intended, to prevent the discharge to the waterway of treated or untreated sewage, it shall be capable of positive closure and means provided for sealing same. Storage tanks shall have the tank outlet located in the bottom of the tank or otherwise designed so that complete draining of the tank may be assured.

4.04 FITTING—HOLDING TANKS: Fittings intended for use in emptying holding and retention tanks devices shall be designed to receive an insert tube

capable of friction fit in the Inside Diameter of a 1½" N.P.S. Schedule 40 pipe. Said fitting shall, in addition, be designed, constructed and/or equipped to assure a liquid tight closure during normal operation of the watercraft; afford no obstruction to the flow of sewage; shall be cleanable; and shall when necessary be designed to prevent the discharge of static electricity.

4.041 Fittings intended for use in emptying holding and retention tank shall be permanently and legibly marked with the word "WASTE". If the cover is detachable, then both the cover and fitting shall be so marked.

4.05 OPERATION UNDER LOAD CONDITIONS: Treatment and discharge devices shall, when installed and operated in accordance with manufacturer's instructions, be capable of producing an effluent meeting the microbiological and chemical/physical requirements of this Standard throughout the testing period of two hours operations at normal load conditions after initial discharge, followed by 20 minutes of operation at peak conditions, and then an additional two-hours at normal load conditions.

4.051* NORMAL LOAD CONDITIONS*: The device shall be placed in service and used (flushed) at a frequency of ½ hour. When discharge of effluent is evident, the normal loading shall continue for a period of two hours, at which time the Peak Load conditions (Item 4.052), shall be applied.

4.052* PEAK LOAD CONDITIONS*:

Single Head Units: The minimum time between uses (flushes) under peak load conditions shall be considered to be five (5) minutes over a 20 minute period.

Multiple Head Units: Peak load conditions for multiple head units shall be considered simultaneous uses (flushes) of all units possible at five (5) minute intervals over a twenty (20) minute period.

4.06 SERVICEABILITY: Units shall be so designed and constructed that when installed in accordance with a manufacturer's recommendations, they shall be capable of being easily maintained, drained and cleaned.

4.07 ENERGY AND CHEMICAL REQUIREMENTS: the manufacturer's engineering data and literature shall specify the power requirements to properly operate the device and/or its necessary auxiliary systems.

4.071 Both the manufacturer's literature and data plate shall state the type of chemicals to be used, if any. If of a proprietary nature, the trade designation shall be given; or, if of a non-proprietary nature, the chemical name and its strength shall be stated.

4.072 When there is an effluent discharge there shall be a field test method available for determining the strength of the chemical specified.

4.073 Chemicals used in a recirculating non-discharge type device shall at least be capable of maintaining the recirculated media in a bacteriostatic condition throughout the maximum recommended use cycle.

4.08 PARTS LIST: There shall be a comprehensive parts list provided by the manufacturer with each unit. The individual parts shall be identified by means of illustration, photographs or the like, and be designated by number, letter, symbol, etc.

4.09 INSTRUCTIONS: The manufacturer shall provide clear, concise, instructions with each unit which, when followed, will assure proper installation, safe and satisfactory operation and adequate procedures for long-term storage and/or securing the unit. Said instructions shall also provide recommendations for the safe storage and handling of chemicals and/or energy.

4.10 DATA PLATE: A permanent type data plate shall be provided, so inscribed as to be easily read and understood, and securely attached to the device at a location which is normally visible following recommended installation, or visible under normal servicing. Said data plate shall include the following:

4.101 Name of Manufacturer.

4.102 Model and/or Serial number designation.

4.103 Use capacity of the unit.

a. Capacity of treatment and disposal devices shall be noted in one or more of the following means:

(1) the chemical dosage required per use

(2) number of uses per the chemical storage provided

(3) comparable type of rating

b. Storage tank capacity shall be stated in terms of gallons and/or number of uses of a given volume.

*Artificial media may be established for normal and peak load evaluations.

4.104 The type of chemical to be used:

- a. If proprietary—the trade name shall be stated.
- b. If non-proprietary—the chemical and strength thereof shall be stated.

4.105 Energy requirements. (Electric, gas, etc.)

4.106 Classification as to by-pass (“with” or “without”).

SECTION 5—EFFLUENT REQUIREMENT

5.00 General: The effluent discharged into the waterway shall not produce a color, odor, oily film, or foam in excess of the limits specified in Item 5.003 when the effluent is thoroughly mixed with distilled water at a 1 to 1000 dilution.

5.001 The effluent discharged into the waterway shall contain no corrosive or toxic materials which are persistent and/or which produce a nuisance.

5.002 Evaluation procedure shall, insofar as possible, be those established in the latest edition of “Standard Methods for the Examination of Water and Waste Water” published by the American Public Health Association.

5.003 Acceptable Limits:

Color—15 units

Threshold Odor—3

Oily Film—no visible evidence other than air bubbles.

Foam—None

5.01 Acceptable limits—Bacteriological: Devices designed to treat and discharge sewage from watercraft shall produce an effluent containing not more than 1000 fecal coliform per 100 ml. Such devices shall be classified based on their ability to reduce the fecal coliform count of sewage under the load operating conditions set forth in this standard. The following fecal coliform counts shall serve to establish these classifications:

<i>ass</i>	<i>Fecal coliform in effluent</i>
-----	0/100 ml.
-----	240/100 ml. or less.
I-----	1,000/100 ml. or less.

5.011 The procedures used shall be those established in the latest edition of “Standard Methods for the Examination of Water and Waste Water” published by the American Public Health Association.

5.02 Suspended solids: An effluent discharged to the waterway shall contain no visible definable suspended solids.

5.03 Nutrients: The treatment process, or chemicals used, shall not contribute to the nutrient content of the effluent discharged to the waterway.

5.04 Toxicity: The effluent discharged into the waterway shall be free of substances in concentrations or combinations which are toxic or harmful to human, animal, or aquatic life. Any disinfecting agent shall be non-persistent.

5.05 Atmospheric discharge: Where gaseous effluents result from the treatment holding systems, the effluent shall:

- a. Be free of substances in concentrations, or combinations, which are toxic or harmful to human, plant, animal or aquatic life.
- b. Contain no viable microorganisms.
- c. If combustible, the manufacturer's installation instructions shall describe a means for safe discharge of said effluent.
- d. If emanating from an incinerator, contain no carbon monoxide, smoke, fly ash or objectionable odors or fumes when tested and as defined in U.S.A. Standard No. Z 21.6-1966 (Paragraph 2.4 and 2.11).
- e. If corrosive, the manufacturer's installation instructions shall describe a means for safe discharge of said effluent.
- f. Provision shall be made in the design and construction of devices to prevent the emission of odor or noxious fumes into the interior of the watercraft when installed and operated in accordance with the manufacturer's recommendations.

SECTION 6—SAFETY

6.00 General: Watercraft sewage disposal devices shall be designed and constructed so as to present no condition which may adversely affect the craft in which they are installed or the occupants thereof.

6.01 Venting: Provision shall be made for venting when necessary to the interior of the vessel of gases and vapors and liquid emanating from the device.

Overboard vents shall be located to minimize the inboard return of odors through parts or other openings, and shall be provided with means to prevent the intake of water (spray) into the device. Vents shall be connected to the device in such a manner, and shall be of such a diameter as will prevent pressure build-up in the device by being free of clogging by the accumulation of solids or liquids therein.

6.02 Electrical components and system: The National Fire Protection Association Standards for Motor Craft (NAFB No. 302) as well as the applicable Standards of the American Boat & Yacht Council shall serve as a guide for the evaluation of electrical components and systems.

6.03 Watertight integrity: The manufacturer's installation instructions shall clearly indicate that each thru-hull connection below the waterline which serves as water intake or overboard discharge, be equipped with a means to prevent the entrance of water into the device or craft. The instructions shall also clearly state that where by-pass or other plumbing are connected to the device, this plumbing shall enter the overboard discharge line inboard of the closure means. Further, the manufacturer's installation instructions and details shall specify that plumbing connections made between the device and the hull shall be of such strength and durability as to resist all operating pressures and stresses imposed thereon.

6.04 Combustion-type devices: When the device is of a combustion type, the manufacturer's installation instructions shall provide sufficient guidance to assure that flues and fuse connections are constructed and installed as set forth in current editions of the National Fire Protection Association Publications No 54 and 302.

NSF JOINT COMMITTEE ON WATERCRAFT WASTE DISPOSAL

Chairman: Edward L. Stockton, Chief, Bureau of Air Pollution Control Allegheny County Health Dept., 620 City-County Building, Pittsburgh, Pennsylvania 15219.

PROFESSIONAL ORGANIZATIONS AND TRADE ASSOCIATIONS

American Boat and Yacht Council, Inc.—Gordon Crowell, Raritan Engineering Company, 1025 North High Street, Millville, New Jersey 08332.

Association of State and Territorial Health Officers—Dr. Wilcox, Association of State & Territorial Health Officers, State Board of Health, 1400 S. West 5th Avenue, Portland, Oregon 97201.

Boating Industry Association—Donald I. Reed, Boating Industry Association 333 North Michigan Avenue, Chicago, Illinois 60601.

Conference of Municipal Public Health Engineers—Benn J. Leland, Engineer in-charge of Chicago Office, Illinois Sanitary Water Board, 1919 West Taylor Street, Chicago, Illinois 60612.

Conference of State Sanitary Engineers—John Vogt, Michigan State Health Department, 3500 Logan Street, Lansing, Michigan.

Engineering and Sanitation Section—American Public Health Association Bernard Berger, University of Massachusetts, Amherst, Massachusetts.

Federal Water Pollution Control Administration—Marvin Fast, Program Officer, Federal Water Pollution Control Administration, Department of the Interior, Great Lakes Laboratory, 2200 North Campus Boulevard, Ann Arbor Michigan.

National Association of Engine and Boat Manufacturers—Mrs. Jody B. Sagar Assist. Secretary, National Association of Engine and Boat Manufacturers, 42 Lexington Avenue, New York, New York 10017.

National Boating Federation—Robert Bohman, 1525 Hamilton Drive, Brookfield, Wisconsin.

Ohio River Valley Water Sanitation Commission—William L. Klein, Chemist Biologist, Ohio River Valley Water Sanitation Commission, 414 Walnut Street Cincinnati, Ohio 45202.

Outboard Boating Club of America—Ron Stone, Director Government Relations Department, Outboard Boating Club of America, 333 North Michigan Avenue, Chicago, Illinois 60611.

Tennessee Valley Authority—Charles M. Davidson, Chief, Public Health Engineering Staff, Tennessee Valley Authority, Chattanooga, Tennessee 37401

The American Waterways Operators, Inc.—A. M. Martinson, The American Waterways Operators, Inc., 1250 Connecticut Avenue, Suite 502, Washington, D.C. 20036.

United States Public Health Service—Robert E. Novick, U.S. Public Health Service, 433 West Van Buren Street, Chicago, Illinois 60607.

INDUSTRY

Apollo Corporation—J. A. Kolbane, Jr., Apollo Corporation, Box 238, Victoria, Minnesota 55386.

Ball-Hed Marine Products Company—George J. Danko, Ball-Hed Marine Products Co., Inc., 5219 Sangamore Road, Washington, D.C. 20016.

Carlson & Son, Inc.—Neale Roach, Carlson & Son, Inc., Division of Koehler-Dayton, Inc., Suite 604, 1700 K Street, N.W., Washington, D.C. 20006.

Conductron Corporation—Gene Morgan, Conductron Corporation, 3475 Plymouth Road, Ann Arbor, Michigan.

Dravo Corporation—A. M. Martinson, Dravo Corporation, Dravo Building, Pittsburgh, Pennsylvania 15222.

FMC Corporation—Milton Spiegel, FMC Corporation, Hydrodynamics Div.—Chicago Pump, Panorama Towers, 8155 Van Nuys Blvd., Panorama City, California.

LaMere Industries, Inc.—Donald P. Frankel, President, LaMere Industries, Inc., Walworth, Wisconsin 53184.

Microphor, Inc.—R. Edward Burton, Microphor, Inc., P.O. Box 577, Willits, California 95490.

Monogram Industries, Inc.—Philip Kowalski, Monogram Industries, Inc., Route #1, Grey Lake, Sturgis, Michigan 49091.

O'Brien Associates—Robert F. O'Brien, O'Brien Associates, 800 No. Ninth Street, Elkhart, Indiana 46514.

Pall Corporation—Sidney Krakauer, Vice President, New Products, Pall Corporation, Glen Cove, Long Island, New York.

Raritan Engineering Corporation—Gordon W. Crowell, Raritan Engineering Corporation, 1025 N. High Street, Millville, New Jersey.

Research Products Manufacturing Company—E. Bayne Blankenship, Ph.D., President, Research Products Manufacturing Co., P. O. Box 35164, Dallas, Texas 75235.

Smith & Loveless—Brian L. Goodman, Director of Research, Smith & Loveless, Lenexa, Kansas 66215.

The Matthews Co.—R. E. Reynolds, Box M, Port Clinton, Ohio.

The Youngstown Welding and Engineering Company—Joseph Musial, Roy C. Yahn, The Youngstown Welding and Engineering Company, 3700 Oakwood Avenue, Youngstown, Ohio 44509.

Water and Sewage, Inc.—R. M. Brown, President, Water and Sewage, Inc., P. O. Box 5577, Daytona Beach, Florida 32020.

Wilcox-Crittenden—H. Layton Morris, Gen'l Sales Mgr., Wilcox-Crittenden, Middletown, Connecticut 06458.

Worden Allen Co.—Frank L. Schmit, Mgr., Worden Allen Company, Sanitaire Division, P. O. Box 2057, 210 W. Capitol Drive, Milwaukee, Wisconsin 53201.

Worthington Corporation—Philip J. Koehler, Worthington Corporation 401 Washington Avenue, Harrison, New Jersey 07029.

Yoemans Brothers Company—J. B. Pflaum, Sales Manager, Standard Products Division, Yoemans Brothers Company, 1999 North Ruby Street, Melrose Park, Illinois 60160.

Zurn Industries, Inc.—Bernard MacCabe, Zurn Industries, Inc., Erie Pennsylvania.

Michigan Grand River Watershed Council—Mr. John H. Kennaugh, Executive Secretary, Michigan Grand River Watershed Council, 609 Prudden Building Lansing, Michigan.

CONSULTANTS

Merlin E. Damon, Sanitary Engineer, Macomb County Health Department, Macomb County Health Center, 43525 Elizabeth, Mount Clemens, Michigan 48043.

Albert E. Sanderson, Jr., Chief, Division of Water, Quality and Investigation, Department of Water Resources, State Office Building, Annapolis, Maryland 21401.

EXHIBIT D—NASBLA POLLUTION COMMITTEE RESOLUTION

WHEREAS, the National Association of State Boating Law Administrators has for several years been concerned with putting sewage discharge and littering from pleasure craft into proper perspective in the overall problem of water pollution; and

WHEREAS, this concern was manifested in the appointment of a Pollution Committee which thoroughly studied pollution from pleasure craft throughout the country, and found the problem to be infinitesimal compared to other pollution sources; and

WHEREAS, findings of a recent study of pollution from vessels conducted by the Federal Water Pollution Control Administration are not in consonance with the findings of the NASBLA Pollution Study Committee and appear inaccurate in several important particulars; and

WHEREAS, the Federal Water Pollution Control Administration did not consult with NASBLA to arrive at fairly objective appraisal of pollution from pleasure craft and practical ways of remedying it; and

WHEREAS, Senate Bill 2525 to control pollution from vessels on navigable waters has been introduced in the Congress by Senator Muskie of Maine as a result of the Federal Water Pollution Control Administration's report; and

WHEREAS, state boating law administrators are deeply concerned that Federal legislation materializing from the findings and recommendations of the Federal Water Pollution Control Administration will produce different pollution control standards for pleasure craft than those followed by many states and cause a serious set back to the uniformity in vessel pollution control laws which NASBLA has strived to achieve;

NOW, THEREFORE, BE IT RESOLVED, that the following recommendations of NASBLA's Pollution Committee be sent to Secretary of the Interior and the Federal Water Pollution Control Administration and Senator Muskie by copy of this resolution:

(1) That interested Federal agencies should consult and collaborate with state boating law administrators individually and through the National Association of State Boating Law Administrators in establishing pollution control for pleasure craft;

(2) That if there is to be Federal legislation governing sewage discharge and littering from pleasure craft, such legislation should so far as is practical be consistent with Federal water quality criteria be in harmony with NASBLA's Model Act on Sewage Disposal and Littering from Vessels;

(3) That Federal vessel pollution control legislation should also recognize the uniform performance standards and testing procedures for vessel waste treatment devices developed by the National Sanitation Foundation or ABYC or NFPA where applicable.

(4) That Federal legislation pertaining to sewage discharge from pleasure craft should not preempt the field but rather should be in the nature of guidelines to be followed by the states in the same manner as Federally approved state boat numbering systems and state water quality criteria were established; and

(5) That Federal legislation should be drafted to insure maximum uniformity and reciprocity between the states and between the states and Federal Government.

CHART SHOWING STATE APPROVALS OF BOAT SEWAGE TREATMENT DEVICES

State	Approved treatment devices	Agency responsible for approving devices	Testing agency	Standard for maximum coliform count
Arkansas.....	Chemical treatment: 1. "C-Chlor Mark 5" pleasure craft unit; "C-Chlor Mark 10" commercial vessel unit; Carlson & Son, 19 James Pl., Metuchen, N.J. 2. "Sealco"; Wilcox-Crittenden Division, North & Judd Manufacturing Co., Middletown, Conn. 3. "Raritan Electro-Chem. Chlorinator" ("Crown Head Unit" not accepted); Raritan Engineering Co., 24 East McNeil St. Milville, N.J. Incineration: 1. "Destroilet Incinerator Gas Fired Toilet"; LaWare Industries, Inc., Walworth, Wis. Holding tanks: 1. Mono-Marine Sanitation System"; Monogram Industries, Inc., Marine Products Division, Los Angeles, Calif. 2. Williamsburg Engineering, 8407 Monroe at Spencer St., Cincinnati, Ohio.	Bureau of Sanitary Engineering, Arkansas State Board of Health, Little Rock, Ark.	Approval based upon own review of plans and specifications of units plus acceptance of findings of Syracuse University Research Corp., Syracuse, N.Y.; Quality Control Laboratory, Philadelphia, Pa.; and official New Hampshire data. The approval of National Sanitation Foundation tested units will be weighed heavily.	240 per 100 ml. (Note: Only those units which have a tank large enough to provide a retention time of approximately 15 minutes are acceptable.)
Georgia.....	No blanket approval of a particular device is given. Certification is made on an individual basis. Individual units of the following chemical treatment devices have been certified to be in compliance with the law: Chemical treatment: 1. "C-Chlor Mark 4, Mark 5, and Mark 6"; Carlson & Son. 2. "Sealco"; Wilcox-Crittenden. 3. "Raritan Electro Chemical Chlorinator" and "Crown Head"; Raritan Engineering Co.	State Water Quality Control Board, 47 Trinity Ave., SW, Atlanta, Ga. 30334.	Certification based upon inspection of units under actual performance conditions on board boats.	1,000 per 100 ml.
Hawaii.....	No one to date has applied for approval of a treatment device.			
Massachusetts.....	None yet approved, but chemical treatment and holding tanks are recommended.	Massachusetts Department of Public Health, Boston, Mass.		No raw sewage may be discharged.

CHART SHOWING STATE APPROVALS OF BOAT SEWAGE TREATMENT DEVICES—Continued

State	Approved treatment devices	Agency responsible for approving devices	Testing agency	Standard for maximum coliform count
Minnesota	Chemical treatment: "C-Chlor Mark 5"; Carlson & Son. "Marine Chlorinator"; Apolco Corp., 1319 Pierce Butler Route, St. Paul, Minn. Incineration: "Destrollet"; LaMere Industries, Inc. Holding tank: "Mono-Marine Sanitation System" and "Monomatic Marine Sanitation System, Model 1"; Monogram Industries, Inc.	Water Pollution Control Commission, Minnesota Department of Health, University Campus, Minneapolis, Minn.	- The C-Chlor Mark 5 device was accepted on the basis of official New Hampshire data. - Tests on Apolco's Marine Chlorinator were conducted by Ruble-Miller & Associates, consulting engineers, Duluth, Minn. - The Destrollet was accepted primarily on the basis of official North Carolina data. - Truesdail Laboratories, Inc., Los Angeles, Calif., conducted tests for the Mono-Marine and Monomatic devices. Approval previously based upon Minnesota data. Hereafter, to be based upon National Sanitation Foundation, Ann Arbor, Mich.	The coliform group organisms in effluent test samples, after chlorination and maceration in a laboratory blender, shall not exceed 1,000 per 100 ml. in more than 10 percent of the test samples, and the average of 10 consecutive daily tests shall not exceed 500 per 100 ml.
Missouri	Chemical treatment: "C-Chlor Mark 5"; Carlson & Son. "Marine Chlorinator"; Apolco Corp. Holding tank: Tank type system; Monogram Industries, Inc. Holding tanks and incinerators	Water Pollution Board, Missouri Department of Public Health and Welfare, 112 West High, Post Office Box 154, Jefferson City, Mo.	Approval previously based upon Minnesota data. Hereafter, to be based upon National Sanitation Foundation, Ann Arbor, Mich.	240 per 100 ml.
Montana		Montana State Board of Health, Helena, Mont.	Montana State Board of Health, Helena, Mont.	Do.
Nevada	No units have been approved to date.	Department of Health and Welfare, Bureau of Environmental Health, 790 S. 2nd St., Reno, Nev.	Own laboratory would run the tests for acceptance.	No standard has been established, but 240 mfu. has been considered.
New Hampshire	Chemical treatment: "C-Chlor Mark 5"; Carlson & Son.	New Hampshire Water Pollution Commission, Concord, N.H.	Commission laboratory	240 per 100 ml.
New York	None yet approved. (Holding tanks, chemical treatment devices and incinerators are acceptable.)	New York Department of Public Health, for public health standards; New York Conservation Department, for safety standards.	Yacht Safety Bureau, for safety standards and public health standards.	1,000 per 100 ml.

North Carolina	Chemical treatment: 1. "C-Chlor Mark 5"; Carlson & Son. 2. "Sealco"; Wilcox-Crittenden. Incineration: "Destroilet"; LaMere Industries, Inc. Holding tank: "Mono-Marine Sanitation System"; Monogram Industries, Inc. None yet approved.	Sanitary Engineering Division, State Board of Health, Raleigh, N.C. 27602.	Approval based upon own laboratory testing plus (in the case of the Carlson unit) ac- ceptance of official New Hampshire data.	240 per 100 ml.
South Dakota		State Public Health Department, Pierre, S. Dak.	Approval based upon acceptance of official New Hampshire and Minnesota data.	Do.
Tennessee	Chemical treatment: 1. "Crown Head" and "Raritan Electric Chemi- cal Chlorinator"; Raritan Engineering Co. 2. "Marine Chlorinator"; Apellco Corp. 3. "Sealco"; Wilcox-Crittenden. 4. "C-Chlor Mark 6"; Carlson & Son. Incineration: 1. "Ticnolet"; Research Products, Inc., Dallas, Tex. 2. "Destroilet Incinerator Gas Fired Toilet"; LaMere Industries, Inc. Holding tank: "Mono-Marine Sanitation System"; Monogram Industries, Inc., Marine Products Division. Holding tanks discharged on shore or other devices approved by local and State Department of Health. Holding tanks: 1. "Mono-Marine Sanitation System" and Monomatic Toilet, Models 1 and 2; Monogram Industries, Inc. 2. "Santank"; Pelco, Inc., St. Paul, Minn. Incinerating devices are also allowed.	Department of Public Health, Stream Pollu- tion Board, 620 Cordell Hull Bldg., Nash- ville, Tenn.	Approval based upon own review of plans and specifications of units plus accept- ance of official data from New Hampshire and other States that previously have approved units. The approval of National Sanitation Foundation will be weighed heavily.	Do.
Texas		Texas State Department of Health, Austin, Tex.		
Wisconsin		Wisconsin State Board of Health, Madison, Wis.		

¹ After Jan. 1, 1969, discharge will no longer be permitted.

ESTIMATED COSTS, BOAT SEWAGE TREATMENT INSTALLATIONS

Manufacturer	Model	Type of device	List of price main unit	Extras	Remarks
Carlson Division, Koehler-Dayton, Inc., Dayton, Ohio.	Mark VI (latest version).	Chlorinator-macerator	\$189	Hose, \$1.25 per foot; electrical wiring and device installation will vary.	Device 15 by 18 by 20 inches plus bottle. 50 lb wet. Requires 30 a., at 12 v. May use existing outlet with existing toilet.
Wilcox-Crittenden Division, North & Judd Manufacturing Co., Middletown, Conn.	Sealed	do	\$110, 12 volt; \$130, 32 volt; \$150, 110 volt.	do	Device 17 by 8 by 8 inches plus bottle. 20 lb. dry, used with existing toilet. May use existing outlet.
Raritan Engineering Co., Millville, N.J.	Electrochemical chlorinator.	do	\$90	do	Device 13 by 8 by 15 inches plus connections and bottle. May use existing toilet outlet. 20 lb. dry.
	Crown Head.	do	\$250		Complete integrated unit toilet and treatment device. Replaces present toilet; uses present existing plumbing 17 by 17 by 14 inches wide.
Apolco Corp., Box 238, Victoria, Minn.	Marine chlorinator	do	\$307	do	Complete integrated unit 12 by 18 by 13 inches high. Uses existing plumbing; replaces existing toilet. Uses iodine for 100-percent kill.
LaMere Industries, Walworth, Wis.	Destroilet	Incinerator	\$349	Propane stowage; piping, \$40 flue; wiring will be variable depending on boat.	Replaces existing head. No water connections. Requires bottled gas system using 1½ to ¾ lb. per day per person. 3.5 a., at 12 v. Size 15 by 23 by 20 inches high.
Research Products, Dallas, Tex.	Incinolet	do	\$300 (estimate)	110-v. wiring, flue connections, and odor suppressor.	Replaces existing head. This is all electric unit originally for workboats or boats with 110 v. aboard; 2,200-w. heater.
Monogram Industries, Los Angeles, Calif.	Monomatic, model I	Holding-type toilet; dock discharge.	\$275	Installation variable	Size 17 by 17 by 18 inches plus connections. Replaces present toilet.
	Monomatic, model II	Holding-type toilet; dock and sea discharges.	\$325	Installation varies	As above, but utilizes present discharge fitting.
	Monomarine, model XIV	Holding tank 20 gal. with macerator and discharge pump.	\$175	Installation varies considerably, plus tubing.	Uses presently installed toilet and fittings; puts tank into system.
	Monomarine, model XV	As above, but no discharge pump.	\$105	do	Uses presently installed toilet and fittings; puts tank into system. Dockside pump-out only.
Mission-West Manufacturing Co., Sanisware Division, Box 733, Elkhart, Ind.	Sanimatic	Holding-type toilet	\$115	Installation varies	Do.
Ball-Hed Marine Products Co., 5219 Sangamore Rd., Washington, D.C.	Ball-Hed, model C	Toilet with auxiliary tank.	\$60 plus tank	do	
Lek Manufacturing Co., Post Office Box 516, Midlothian, Ill.	Lek Tanks	Recirculating holding tank.	\$129	Simple installation from existing water closet onboard.	Uses present water closet; requires deck dockside pump pipe.
American Cotton Yarns, Inc., 5825 South Western Ave., Chicago, Ill.	Tank system	Holding tank, 22 gal.	\$115	Simple connection from present water closet.	Has electric gage and for dockside pump-out only.

EXHIBIT E—A BILL TO REGULATE THE DISPOSAL OF SEWAGE FROM RECREATIONAL WATERCRAFT AND TO PROHIBIT LITTERING OF WATERWAYS

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Congress hereby declares that the purpose of this Act is to reduce littering and disposal of untreated wastes from recreational watercraft on the navigable waters of the United States. Therefore, Congress determines that it is necessary to authorize the establishment of standards for waste disposal and to prohibit littering from recreational watercraft and to assist the States in initiating and implementing similar programs in the interests of uniformity of laws.

I. DEFINITIONS

For purposes of this Act, unless the context clearly requires a different meaning:

(a) The term "watercraft" means any contrivance used or capable of being used for navigation upon water whether or not capable of self-propulsion, except passenger or cargo-carrying vessels subject to the Interstate Quarantine Regulations of the United States Public Health Service adopted pursuant to Title 42 United States Code §252 and §262 through §272 and Title 8 United States Code §1182(a) and (f), §1201(d) and §1224.

(b) The term "sewage" means all human body wastes.

(c) The term "litter" means any bottles, glass, crockery, cans, scrap metal, junk, paper, garbage, rubbish, or similar refuse discarded as no longer useful or useable.

(d) The term "marine toilet" means any toilet on or within any watercraft to discharge waste.

(e) The term "person" means an individual, partnership, firm, corporation, association, or other entity.

(f) The term "Department" means the Department of the Interior.

(g) The term "Secretary" means the Secretary of the Department of the Interior.

II. LITTERING OR POLLUTING WATER—RESTRICTIONS

(a) No person shall place, throw, deposit, or discharge, or cause to be placed, thrown, deposited or discharged into navigable waters of the United States any litter, sewage, or other liquid or solid materials which render the water unsightly, noxious or otherwise unwholesome so as to be detrimental to the public health or welfare or to the enjoyment of the water for recreational purposes.

(b) It shall be unlawful to discharge, dump, deposit or throw garbage into navigable waters of the United States from a watercraft.

III. MARINE TOILETS—RESTRICTIONS

(a) No marine toilet on any watercraft used or operated upon navigable waters of the United States shall be operated so as to discharge any untreated sewage into said waters directly or indirectly.

(b) No person owning or operating a watercraft with a marine toilet shall use, or permit the use of, such toilet on navigable waters of the United States, unless the toilet is equipped with facilities that will adequately treat, hold, incinerate or otherwise handle sewage in a manner that is capable of preventing water pollution.

(c) No container of sewage shall be placed, left, discharged or caused to be placed, left or discharged in or near any navigable waters of the United States by any person at any time.

IV. MARINE TOILETS—POLLUTION CONTROL DEVICES

(a) After the effective date of this Act every marine toilet on watercraft used or operated upon navigable waters of the United States shall be equipped with a suitable pollution control device in operating condition.

(b) Types of pollution control devices that are acceptable for purposes of this Act are:

(1) Facilities that macerate or grind sewage solids and which, by chlorination or other means, disinfect the remnants before discharge into the water.

(2) Holding tanks which retain toilet wastes for disposal at dockside or on-shore pumping facilities or in deep waters away from shore.

(3) Incinerating type devices which reduce toilet wastes to ash.

(4) Any other device that is tested by a recognized testing laboratory and determined to be effective in arresting the possibility of pollution from sewage passing into or through marine toilets.

V. MARINE TOILETS—CHEMICAL TREATMENT FACILITIES—STANDARDS

(a) Every chlorinator or chemical treatment facility shall be securely affixed to the interior discharge opening of a marine toilet, and all sewage passing into or through such toilet shall pass solely through such treatment facility.

(b) Sewage passing through a marine toilet equipped with a chlorinator or chemical treatment facility shall be deemed untreated unless the effluent meets treatment standards promulgated by the Secretary who is hereby empowered to adopt said standards.

(c) The chlorinator or chemical treatment facility shall be of a type which functions automatically with the operation of the marine toilet, does not depend on septic action as part of its treatment, is easy to clean and maintain, and does not permit the escape of dangerous gases or obnoxious odors.

(d) The disinfecting agent used in the facility shall be of a kind that does not necessitate too frequent replenishment, is easily obtainable, and when discharged as a part of the effluent is not toxic to humans, fish or wildlife.

VI. MARINE TOILETS—STANDARDS FOR MANUFACTURERS OF POLLUTION CONTROL DEVICES

(a) The Secretary is empowered to adopt appropriate standards and implementing regulations for the design, construction and performance of marine toilet retention, incineration and chemical treatment devices.

(b) Every manufacture of a marine toilet pollution control device described in this Act shall certify to the Department in writing that his product meets the standards set forth in this Act or in any implementing regulations adopted by the Department. Every such certified statement shall be accompanied by a test report showing that the product meets the prescribed standards. It shall be unlawful to sell or to offer for sale in interstate commerce any marine toilet pollution control device that has not been so certified and approved by the Department.

VII. CONSULTATION AND COOPERATION

In carrying out his responsibilities under this Act, the Secretary shall consult with agencies, committees and organizations having an interest in recreational boating and pollution control.

VIII. ON-SHORE FACILITIES

The owner or whoever is lawfully vested with the possession, management and control of a marina or other facility located upon or adjacent to a navigable water of the United States and used by watercraft for launching, docking, mooring and related purposes shall be required to have trash receptacles or similar devices designed for the depositing of trash and refuse at locations where they can be conveniently used by watercraft occupants. If he shall offer boat service facilities to toilet equipped boats he shall also be required to provide as part of such services a marine toilet retention tank pump-out facility.

IX. EDUCATION

The Department is hereby authorized to undertake and to enlist the support and cooperation of all agencies, political subdivisions, and organizations in the conduct of a public educational program designed to inform the public of the undesirability of depositing trash, litter, and other materials in navigable waters of the United States and of the penalties provided by this Act for such action, and use funds provided by Congress for this purpose. The Department is further authorized to utilize all means of communication in the conduct of this program.

X. ENFORCEMENT

All watercraft located upon navigable waters of the United States shall be subject to inspection by the Department or any lawfully designated agent or in-

spector thereof for the purpose of determining whether such watercraft is equipped in compliance herewith. The Department is further authorized to inspect marinas or other waterside public facilities used by watercraft for launching, docking or mooring purposes to determine whether they are equipped with trash receptacles and/or sewage disposal equipment.

XI. RULES AND REGULATIONS

The Secretary of the Department is hereby authorized and empowered to make, adopt, promulgate, amend and repeal all rules and regulations necessary, or convenient for the carrying out of duties and obligations and powers conferred on the Department by this Act, in accord with the Federal Administrative Procedure Act.

XII. FILING OF REGULATIONS

A copy of the regulations adopted pursuant to this Act and any of the amendments thereto, shall be filed in the office of the Department and shall be published by the Department in a convenient form.

XIII. PENALTIES

(a) Every manufacturer of a marine toilet pollution control device who violates Section 6 of this Act or any regulations adopted by the Department pursuant thereto shall be deemed guilty of a misdemeanor and upon conviction shall be punished with a fine of not more than \$10,000.

(b) Any person who violates any other provision of this Act or regulations of the Department adopted pursuant thereto shall be deemed guilty of a misdemeanor and upon conviction shall be punished with a fine of not more than \$1,000, or by imprisonment of not more than 30 days, or by both such fine and imprisonment at the discretion of the court.

XIV. STATE WATERCRAFT POLLUTION CONTROL PROGRAMS

The Secretary shall approve State pollution control programs designed to regulate the disposal of sewage from recreational watercraft and prevent littering of waterways. Such approval shall vest the State with primary implementation and enforcement of recreational watercraft pollution control programs on navigable waters of the United States under concurrent jurisdiction of the State. In approving a State program the Secretary shall require:

(a) That State law or regulation include provisions restricting littering and polluting of waterways and standards for marine toilet pollution control devices in conformity with provisions of this Act and standards and regulations promulgated hereunder by the Secretary.

(b) That appropriate enforcement provisions are included in the State law or regulation including the name of the enforcing agency.

(c) That State approval testing procedures for watercraft waste disposal devices are in conformity with this Act and regulations promulgated hereunder.

(d) In the use of devices permitting discharge after treatment in navigable waters of the United States, such treated discharge must meet Water Quality Control Act standards for said navigable waters of the United States.

(e) That the State shall recognize the use of a marine toilet pollution control device approved by another State under a program approved by the Secretary, for a period of at least ninety days.

Whenever the Secretary determines that a State is not administering its approved pollution control program for recreational watercraft in accordance with the requirements of this section he may withdraw such approval. The Secretary shall not withdraw his approval of a State watercraft pollution control program until he has given notice in writing to the State setting forth specifically wherein the State has failed to maintain such requirements and a corrective period of ninety days thereafter has expired without such requirements being met.

XV. SHORT TITLE

This Act may be cited as the "Recreational Watercraft Pollution Control Act of 1968."

Mr. Boggs. Mr. Chairman, I am here today on behalf of the association to support, in principle, the two bills which are aimed at the control of pollution from pleasure craft and other vessels.

PLEASURE CRAFT AND COMMERCIAL VESSELS POSE DIFFERENT PROBLEMS

We do have some suggestions. The basic one is to sort of separate, in either that bill or in a separate bill, the sections dealing with pollution from pleasure craft and the sections dealing with pollution from commercial vessels.

There are a number of very difficult problems which arise between the two types of craft; one, commercial vessels are rarely found in the inland waterways of the United States, and generally are on the navigable waters, whereas the pleasure craft are found in the inland waters of the United States and not so much on the navigable waters.

That is one reason, Mr. Chairman.

MODEL LAW ON PLEASURE CRAFT POLLUTION

The other reason we have outlined in the statement. They include the one section of the bill that regulates ballast, but in generally our suggestion is that the Federal law which governs pollution from pleasure craft adopt the guidelines set out by the National Association of State Boating Law Administrators, which is a nationwide association of State boating law officials, and back 4 years ago, in 1963, they began work on a model pollution statute to govern the pleasure craft.

That statute, I might add, has been adopted in a number of States, including New York, Tennessee, North Carolina, and Georgia, and some other States are about to follow suit.

We are really recommending that that statute, with certain modifications, be adopted by the Federal Government, by the Federal Legislature, that it provide an incentive to the States to adopt the same statute with certain modifications and if the State would do so, then the State would have primary jurisdiction over the navigable and non-navigable waters of the State, to regulate this form of pollution from pleasure craft.

This is not unique, I might say, Mr. Chairman.

The Boating Act of 1958, which is the act which gives the States most of their control over licensing of boats and other types of pleasure craft equipment, vested primary jurisdiction in the Federal Government unless the States adopted the principles of the Boating Act within a reasonable period of time. Forty-seven States did adopt that act and, as a consequence, in those 47 States there are concurrent jurisdictions with the Federal Government on the navigable waters and exclusive State jurisdiction on the nonnavigable waters.

The principle behind that bill which we also feel should be the principle behind this bill is that we do get uniformity of laws and the requirements for pollution control devices in one State will be the same as those in the other State, but the primary jurisdiction for enforcing those requirements would rest with the State Governments and not the Federal Government.

That, basically, Mr. Chairman, is the sum and substance of our testimony.

I do not think it is necessary to go into other details. I will be happy to answer any questions.

Mr. McCARTHY. Thank you very much, Mr. Boggs.

Mr. Chairman, did you have some questions?

Mr. BLATNIK. No questions. I do appreciate your testimony. We are very interested in this small boating problem in Minnesota, of course; and many other States—Michigan, Wisconsin—particularly the growth of boating which has just been incredible in recent years. We first ran across it in connection with the highway program, trying to anticipate, back in 1955, what would be the mobility, the needs, the recreational uses, demands, more time and more money, and we find that the sale of camping equipment and boating and motor boats and water skiing equipment and fishing gear, trailers, house trailers behind automobiles, have exceeded any forecast by enormous amounts, and it is getting to be a problem of lakes that are overcrowded, getting to be fouled up. And to get uniformity is a problem.

If we leave it to the States, if you leave it all to the States, you get relief to some degree in some States. You have no assurance that you would have an adequate sort of minimum throughout the country.

STATE APPLICATION OF FEDERAL GUIDELINES TO ALL WATERS POSSIBLE

Mr. BOGGS. The problem, Mr. Chairman, is that the Federal Government really does not have jurisdiction over some of the inland waters of the States, and they cannot really enforce the Federal statute on those waters. That is why I think the Boating Act has worked so well. The States, in effect, adopted the Federal legislation throughout. Had they not adopted that act, the Federal Government would have at least maintained primary jurisdiction over the navigable waters.

Mr. BLATNIK. On page 8, Mr. Boggs, you mentioned it would be a mistake, in your opinion, to give any Federal agency absolute authority to set standards or to approve devices to control waste disposal from watercraft. There has to be close collaboration between the Federal Government and the States and local agencies responsible for water pollution control, public health, and boating law enforcement.

Any rules or regulations established by Washington, without such collaboration, would make matters worse for boaters, et cetera.

Could you clarify that just a little bit more?

I think in essence I would agree with you, again have absolute and final authority and complete authority in a Federal agency, yet we ought to have something more than just admonishing these States to collaborate and work with the Federal Government.

Mr. BOGGS. Mr. Chairman, I think what we are suggesting is that the Federal Government adopt a pollution standard for a pleasure craft very similar to the one set forth in your bill, and the other bill introduced by Mr. Fallon.

We are secondly saying that the standards suggested by the Federal Government can really only apply to the navigable waters of the United States and to the manufacturers of the devices which the Secretary of the Interior can regulate.

That still leaves a third area, the nonnavigable waters on which most of your pleasure craft operate, which the Federal jurisdiction does not reach by an act.

We are suggesting that the States would act and accept the Federal standards if they were given an incentive to do so, and that incentive, we maintain, is the concurrent jurisdiction over the navigable waters of their State to control pollution in those waters as well.

This, as I say, has worked in the Boating Act.

WIDE CONSULTATION URGED

Finally, all we are saying here is that we would hope that the Secretary of Interior and we hope that the legislative intent would show the Secretary of Interior that he should consult not just with the standard pollution experts who are really familiar with devices and the types of affluent control that could be obtained through devices, but also with the boaters and State boating law officials that have to deal with the practical problems arising from pleasure craft.

I think that is all that is intended to mean.

Mr. BLATNIK. That is all. Thank you.

Mr. McEWEN. Thank you, Mr. Boggs, for being here today. I am interested in this statement of yours. I must say I did enjoy that portion of your statement, particularly on page 5 where you referred to the Federal Water Pollution Control Administration report, that 50 percent of the sailboats under 15 feet in length have toilets.

I must say that I like your conclusion there, that if this were the case, boaters should worry more about indecent exposure than pollution.

It is a little difficult to understand some of the reports of these agencies, but your statement is a classic!

ADOPTION OF MODEL LAW BY STATES

With regard to the uniform law developed by the National Association of State Boating Laws, how many States do you say have it now?

Mr. Boggs. Mr. McEwen, four States have currently passed the law, including New York, Tennessee, Georgia, and North Carolina. I think it is now pending in two State Legislatures, and about four or five others that conducted extensive hearings on the law which could be in the process of enacting it.

Mr. McEWEN. Including my State of New York?

Mr. Boggs. Yes, it has. It has only been in the last 2 years that the group has really encouraged enactment, because it took them that long to derive a standard which they considered adequate to meet most States.

In other words, they went to the National Sanitation Foundation and tried to develop an affluent standard that would apply to all devices, and as long as the amount of affluent that went into the water was acceptable, then the device was also safe in terms of the boat structure and would be acceptable. It took them quite a while to develop the standard. Once they felt they were about to develop one, then they started pushing the model act in most of the legislatures.

Mr. McEWEN. Mr. Chairman, I hope that this committee would give some real consideration to this model act Mr. Boggs speaks of. I think we should consider the possibility of incorporating it into our Federal law.

Now, as I understand it, this act was developed by and approved by such organizations as the Outboard Boating Club of America, the National Boating Federation, and it is approved by the National Conference of State Sanitary Engineers.

I know, Mr. Boggs, from personal experience, the overlapping jurisdictions, in the water where I do my recreational boating, I

have a boarding inspection by the New York State Police, the Coast Guard and the local sheriff. If we are going to have two different standards. I can see where there is going to be a lot of problems.

Mr. McCARTHY. What do you carry in your boat, anyway?

Mr. McEWEN. Mostly bait and the fish I catch; but I think, Mr. Boggs, that we owe you our thanks here for bringing this to our attention, and I, for one, shall give careful consideration to this.

Can you tell us why the Federal Water Pollution Control Administration people have rejected, if they have, this uniform Act, or the requirements of it?

FEDERAL LAW NEEDED—MODEL LAW APPROACH REFERRED

Mr. BOGGS. I would not say, Mr. McEwen, they have rejected it. They proposed most of the recommendations which are embodied in the bill which Chairman Blatnik produced; and, as I say, we find no real fault with those suggestions. We do feel, however, that the State model Act approach is a preferable approach, simply because it does include all waters of the State.

Secondly, we do feel that a Federal statute is required because we have learned from experience that it will take a number of years for all the States to adopt the model Act, and you will not have uniformity unless there is an impetus from the Federal Government.

What the Boating Industry Association and the Water Pollution Control Administration have had disagreement about is the level of the problem resulting from small vessel pollution. They have frankly, we feel, misused statistics, and even quoted statistics we cannot verify, to indicate that the problem is far more severe than we maintain it is. That does not mean we think the problem cannot be rectified.

Mr. McEWEN. I quite agree with you.

Mr. BOGGS. I might say, and I do not mean to criticize the administration, but there was considerable lack of communication between the Federal Water Pollution Control Administration, their Washington office, and the various State boating groups.

There was pretty good communication between regional offices of the administration and those State groups, but there seems to be some loss in the transmittal of the report between those regional groups and the final report that came out of Washington.

Mr. McEWEN. The Federal Water Pollution Control Administration is dealing with many, many facets of this whole problem of pollution control and here what you seek to do is, one, a unique situation with small pleasure craft which the State administers, the people who are pleasure boaters, their organizations, the manufacturers of these boats all worked, I take it, to develop this uniform law. Am I correct in that regard?

Mr. BOGGS. Yes, sir.

Mr. McEWEN. This is a refinement of the thinking of the most knowledgeable in this field. I certainly for one shall give it the weight that I think it is due.

Mr. BOGGS. Mr. McEwen, we tried to do an exhibit. We tried to draft a legislative proposal which combines the recommendations of the Federal statute with those State recommendations, and I would appreciate it if you would look into that one.

Mr. McEWEN. What exhibit is that?

Mr. Boggs. That is our exhibit E.

Mr. McEWEN. I certainly shall.

Mr. McCARTHY. Well, thank you very much, Tom. We appreciate your coming and making this contribution.

Mr. Boggs. Thank you, sir.

Mr. McCARTHY. Our final witness is Mr. Jack Coffey, of the Chamber of Commerce of the United States.

STATEMENT OF JOHN J. COFFEY, SECRETARY, ENVIRONMENTAL POLLUTION ADVISORY PANEL, CHAMBER OF COMMERCE OF THE UNITED STATES

Mr. COFFEY. Mr. Chairman, I have some brief attachments that I refer to in my statement. I would like to have them submitted at the end of my statement for the record.

Mr. McCARTHY. Very well. We will insert them following the conclusion of your testimony.

Mr. COFFEY. I am John J. Coffey, secretary to the environmental pollution advisory panel of the Chamber of Commerce of the United States. The national chamber appreciates this opportunity to comment on the proposed amendments to the Federal Water Pollution Control Act, specifically S. 2760, H.R. 15906 and H.R. 15907.

Water is our most important natural resource. The demand for water is ever increasing, while the supply remains constant. To resolve the conflict between supply and demand, effective water management programs need to be established and directed toward increasing the uses which man can make of his available water supply.

This House Committee on Public Works recognized the need for effective water management in 1965 when it sponsored and helped pass the Water Quality Act. The national chamber was pleased to support such a well-reasoned approach to our Nation's water problems. The Water Quality Act provided that the States should set water quality standards for their interstate waters, such quality standards to be based upon the uses to be made of those waters. These uses were to be determined only after a series of public hearings where all interested parties could present their views. State standards set in accordance with this procedure were then subject to review by the Secretary of Health, Education, and Welfare—since enactment, this authority has been transferred to the Secretary of the Interior.

The purpose of this review by the Secretary was to assure that the State standards of quality would serve the purposes of the act and that they would be consistent with the particular water uses determined by the State.

In 1966, in an effort to speed the Nation's pollution abatement efforts, this committee recommended an increased grant program to States, municipalities, and regional agencies for the construction of needed treatment works. This recommendation was embodied in the Clean Water Restoration Act, passed in 1966, which became Public Law 89-753. This law also amended the existing Oil Pollution Act of 1924.

We have brought this legislation history to mind because it is most important to view the currently proposed legislation and present pro-

gram administration within the framework of the Water Quality Act of 1965 and the Clean Water Restoration Act.

POLLUTION BY OIL AND OTHER HAZARDOUS SUBSTANCES

The first area of concern in the proposed legislation before this committee is oil pollution. The national chamber supports in concept the need for stronger authority to deal with pollution arising from the discharge of oil from vessels, but as recently as February of this year the national chamber's board of directors reiterated opposition to the delegation of control over all oil discharges from shore installations to any Federal agency or department. While we will leave to the oil industry experts the discussion of the specific provisions necessary to achieve the control of oil pollution arising from vessels, we would like to comment briefly on the proposed bills, S. 2760 and H.R. 15906, as they relate to shore facilities.

The definitions contained in S. 2760 can be interpreted so as to give to the Secretary of the Interior control over all discharges from any type of industrial plant. By defining "oil" as "* * * oil mixed with other matter"—a definition not used in the Oil Pollution Act of 1924—and by placing any shore installation, including an industrial plant, which uses oil under the direct authority of the Secretary of the Interior, this bill would, in effect, bypass the responsibility of the State pollution control authorities which this committee recognized and reinforced in the Water Quality Act of 1965.

Several States whose beaches have been soiled have been vocal in their urgings that the laws dealing with oil pollution from vessels be strengthened. Yet these States do not clamor for more control over oil discharges from shore installations. The reason is obvious—the States have effective laws to deal with shore facilities. Most of these laws deal with "visible oil"—a standard far more stringent than any contemplated for oil discharges from vessels.

H.R. 15906 would expand this concept of Federal control over the discharges from shore installations to materials other than oil, further compounding the apparent sham being made of the Water Quality Act of 1965. If, as this committee has repeatedly stressed, States do have the primary responsibility and right to prevent and control water pollution—and this is the Federal law, and it includes all potential pollutants including oil—then this committee should delete those portions of S. 2760 and H.R. 15906 which relate to discharges from shore facilities.

LAKE POLLUTION—ACID AND OTHER MINE DRAINAGE

In addition to oil pollution, S. 2760 contains two other amendments to the Federal Water Pollution Control Act, dealing with research and demonstration projects to control and prevent pollution of lakes and to control acid and other mine water pollution. Sections 5(a) and 6(b) of the present law appear to provide adequate authority for research and demonstration projects in either of these areas. Support of these two amendments by the Federal Water Pollution Control Administration can only be considered an excuse for their previous lack of work in these two areas.

ADDITIONAL METHOD OF FINANCING WASTE TREATMENT WORKS CONSTRUCTION

With regard to the new grant financing plan proposed by H.R. 15907, the national chamber is not only opposed to several specifics of the proposal—the elimination of the reimbursement provision of the Federal Water Pollution Control Act, the limitation of the new program to cities of at least 125,000 people, the need for consistency with an area comprehensive plan—but is also opposed to the new financing plan in concept.

In effect, each year this plan continues, it would create an ever-increasing “floor” in the appropriation level of this program for a period of up to 30 years. Periodic congressional review of appropriations, considered in the light of the then-existing priorities, would be a more effective method of obtaining the maximum benefit from every Federal dollar spent not only in the water pollution field, but in every area of Government expenditure.

ADMINISTRATION OF WATER QUALITY STANDARDS PROGRAM

Before concluding this presentation, we would like to comment on the current administration of the State water quality standards program.

The national chamber is extremely concerned over the legality and enforceability of the water quality standards program, as it is presently being administered, and as an engineer, I am appalled at the Department of the Interior’s disregard for the professional manner in which the States have developed water quality standards and implementations plans.

In August of 1967, when the Secretary announced the approval of several States’ standards, he noted that:

The most significant single thing about the standards that I have approved is that they call for a minimum of secondary treatment for all municipal wastes and a comparable degree of treatment for all wastes.

This statement implied that a minimum of secondary treatment for all wastes, regardless of the quality and characteristics of the receiving waters, would be a prerequisite for approval of any State’s water quality standards. This was substantiated in the following months by reports from our members in many States on the progress of their State’s standards through the Secretary’s approval process.

In an attempt to clarify the nebulous phrase “comparable degree of treatment,” James Watt, of the national chamber staff wrote to the then Department of Interior Assistant Secretary DiLuzio on November 8, 1967, for the Department’s official interpretation of the phrase. To quote Mr. Watt:

The interpretation of the phrase “comparable degree of treatment” has caused much concern in the business community. Does this phrase imply the actual construction of a secondary treatment facility? Does it imply that an industrial waste effluent should have a quality as high as an effluent from a municipal secondary treatment plant? Does this phrase imply a certain percentage reduction of waste load regardless of the quality of the receiving water body?

After a long delay, Secretary DiLuzio, on December 29, 1967, answered that “comparable degree of treatment” could mean any or all

of above definitions, depending upon the interpretation which State or Federal officials choose to use on any occasion. The closing paragraph of Secretary DiLuzio's reply merits special attention:

A high degree of waste treatment or control should implement our goal of preventing water quality degradation down to some limiting value required for specific water uses. It will also meet Secretary Udall's goal of making water as clean as possible, not unclean as possible.

Here we can see the beginning of what is now called the nondegradation policy which Secretary Udall announced publicly on February 8, 1968. We will return to this problem shortly.

On December 13, 1967, prior to Secretary DiLuzio's reply, James Watt addressed the Association of State and Interstate Water Pollution Control Administrators at its annual meeting in Hartford, Conn., concerning the enforceability of a blanket secondary treatment requirement, Mr. Watt remarked:

If your State's legislation calls for a program to assure acceptable water quality, you, as the administrator of the program, will have to show that the discharges are damaging that quality. Whether or not the alleged offender—municipality or industrial plant—does or does not have a secondary treatment facility is not the material issue. If the court finds that the water quality is not impaired by the waste discharged, the standards which include a requirement for secondary treatment could be thrown out, even though approved by the Secretary of the Interior. Thus, the efforts to implement a meaningful water pollution control program would be set back for an indefinite period of time. We cannot afford this risk. We need a meaningful and a determined program that will secure for ourselves and future generations a desirable quality of water.

The National Chamber's concern over the enforceability of the standards modified and approved by the Secretary was heightened in January by letters sent by the Secretary to the Governors of several States. The letters to Governor George Romney of Michigan, and Governor Lurleen Wallace, of Alabama, spelled out in detail the nondegradation policy and stated that approval of all State standards was conditional upon the inclusion of a nondegradation statement. Soon after this, the Secretary made public the nondegradation policy, indicating that even those 10 States whose approval he had previously announced would have to resubmit their standards for the inclusion of a nondegradation statement.

It was now obvious that the Secretary was playing one State off against another so that he could achieve his goal of making water as clean as possible and, in addition, make the water quality standards Federal standards. If this committee will recall the legislative history of the Water Quality Act of 1965, both of these principles were present in the original administration bill, but were rejected by this committee and not included in the final version of the bill. This nondegradation policy of Secretary Udall has set the stage for a procedure which Congress has expressly rejected—"treatment for treatment's sake" to make waters "as clean as possible."

Many States are resisting the Secretary's demands. The national chamber, serving as a clearinghouse for information on this subject, has distributed copies of correspondence between Secretary Udall and Governors Romney, Rhodes of Ohio, Wallace, and Love of Colorado. We hope that the full text of these letters will be included in the record. However, some of the comments made by Governors Love and Rhodes on the nondegradation statement are so notable that we want to quote them at this time.

Governor Love said:

Colorado does not feel that any State should be asked to give to a Federal agency or department the authority to control the economic growth and development of that State. As we interpret this statement, this is exactly what we feel you are asking us to do. We strongly feel that the economic growth and development of any State should be within the prerogatives of that State and that State and that State alone. We feel that to carry out such a policy is in direct opposition to section 1(c) of the Federal Water Quality Act which states:

"Nothing in this Act shall be construed as impairing nor in any manner affecting any right or jurisdiction of the States in respect to the waters, including boundary waters, of such States."

Governor Rhodes commented:

Your [Secretary Udall] suggested inclusion of the Department of the Interior as an agency for the enforcement of Ohio water quality standards appears to call for a legally impossible delegation of authority by the Ohio Water Pollution Control Board.

In order to resolve the legal questions involved in both the secondary treatment requirement and nondegradation policy, and to restore some reasonableness of the Federal water quality program, the national chamber, on behalf of many member State and national associations, sought an opinion from the law firm of Covington & Burling to define more clearly the role of the National and State governments and the obligation of water users under the applicable laws.

Summarizing its findings, the legal opinion of Covington & Burling states:

The Secretary has no authority under the Federal Water Pollution Control Act, as amended by the Water Quality Act of 1965, to insist that a State include in its water quality standards applicable to interstate waters either an effluent standard—such as an absolute requirement of secondary treatment or its equivalent—or a requirement that waters whose existing quality is better than the established standards will be maintained at their existing high quality.

It is the national chamber's desire, and the desire of many State officials, that there be a reorientation of the current program administration so that the legal requirements and intent of the Water Quality Act of 1965 be fulfilled. The States, through their adoption of State pollution control laws and State water quality standards, have expressed their desire to work within the framework of the Water Quality Act, and to pursue the goals stated in that act.

The national chamber urges that the States be allowed to pursue those goals.

Thank you, Mr. Chairman.

Mr. McCARTHY. Thank you, Mr. Coffey.

Mr. Blatnik, any questions?

Mr. BLATNIK. No questions.

Mr. McCARTHY. Mr. McEwen?

Mr. McEWEN. Mr. Coffey, I want to thank you for that fine statement. There were some exhibits that you wanted to put into the record.

Mr. COFFEY. That would be the letters of the Governors and the memorandum from Covington & Burling.

Mr. McEWEN. The letters of the Governors and the legal memorandum from your attorneys here in Washington?

Mr. COFFEY. Yes, sir.

Mr. McEWEN. I would ask, Mr. Chairman, that they be incorporated and made a part of the record.

(Letters and memorandums referred to may be found on p. 152.)

COVINGTON & BURLING OPINION ON WATER QUALITY STANDARDS—
AUTHORITY OF SECRETARY OF THE INTERIOR

Mr. SULLIVAN. Mr. Coffey, the opinion of Covington & Burling, are they saying that the Secretary has no authority to command and establish standards on interstate streams?

Mr. COFFEY. No, if the State fails to act, he has that authority.

What they are saying is that he has no authority to make a blanket recommendation over and above what the States have legally adopted under their State laws and under the Federal Water Quality Act. To do so without public hearings would, in my opinion, and in theirs, be illegal under the present act.

Any revision in a State standard that has been submitted would require a new set of public hearings to justify any changes. He would have to go back under the revision authority contained in the Federal Water Quality Act.

Mr. SULLIVAN. In other words, what you are saying is that the Secretary is going to tell the State to make these changes without following the Water Pollution Control Act of 1965?

Mr. COFFEY. That is right.

Mr. SULLIVAN. In essence, that is what this opinion means?

Mr. COFFEY. Yes, sir.

NONDEGRADATION POLICY

Mr. SULLIVAN. Can you explain a bit what degradation means?

Mr. COFFEY. What it means in essence is that the water, the quality, the date those State standards are approved by the Secretary shall not be lowered in quality.

There are other parts to his nondegradation policy, such as the reference Governor Love made, such as the economic development of the State which, in effect, he would have in his authority of approving any new or increased source of potential pollution within a State.

Mr. SULLIVAN. Intrastate?

Mr. COFFEY. Yes.

Mr. SULLIVAN. You are talking about the testimony he gave this morning when he cited Alaska as an example?

Mr. COFFEY. Yes.

Mr. SULLIVAN. As a type of State they could set up in intrastate operation.

Mr. COFFEY. But according to his nondegradation policy, the Secretary of Interior would determine whether such a breach of the nondegradation policy, but not a breach of the State's water quality standards would be allowed.

SECONDARY TREATMENT—"COMPARABLE DEGREE OF TREATMENT" REQUIREMENT

Mr. McEWEN. Mr. Coffey, on page 4, I guess you are quoting a member of your staff wrote to Assistant Secretary DiLuzio, and Mr. Watt said:

The interpretation of the phrase "comparable degree of treatment" has caused much concern in the business community.

He says: "Does this phrase imply the actual construction of a secondary treatment facility? Does it imply that an industrial waste effluent should have a quality as high as an effluent from a municipal secondary treatment plant? Does this phrase imply a certain percentage reduction of waste load regardless of the quality of the receiving water body?"

Then you go on to say that Secretary DiLuzio answered that "comparable degree of treatment" could mean any or all of above definitions, depending upon the interpretation which State or Federal officials choose to use on any occasion.

Has there been any further answer or clarification to that?

Mr. COFFEY. No, sir; I have his answer here. I would like to include in the record also, if you would like.

Mr. McEWEN. Could we have that?

Mr. COFFEY. That is a copy of the correspondence that was between Mr. Watt and Secretary DiLuzio.

Mr. McCARTHY. Without objection, it is so ordered.

(Correspondence follows:)

CHAMBER OF COMMERCE OF THE
UNITED STATES OF AMERICA,
Washington, D.C., November 8, 1967.

Mr. FRANK C. DiLUZIO,
Assistant Secretary, Water Pollution Control,
U.S. Department of Interior, Washington, D.C.

DEAR SECRETARY DiLUZIO: On August 9, 1967, Secretary Udall appeared before the Senate Public Works Subcommittee on Air and Water Pollution to relate the progress of the federal water pollution control effort. In discussing the approval of state water quality standards, he remarked:

"The most significant single thing about the standards that I have approved is that they call for a minimum of secondary treatment for all municipal wastes and a comparable degree of treatment for industrial wastes."

The interpretation of the phrase "comparable degree of treatment" has caused much concern in the business community. Does this phrase imply the actual construction of a secondary treatment facility? Does it imply that an industrial waste effluent should have a quality as high as the effluent from a municipal secondary treatment plant? Does this phrase imply a certain percentage reduction in wasteload, regardless of the quality of the receiving water body?

These questions reflect the uncertainty of the business community, and the need for a clarification from your office, so that the correct interpretation of this phrase may be applied.

Sincerely,

JAMES G. WATT,
Secretary, Natural Resources Committee.

U.S. DEPARTMENT OF INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., December 29, 1967.

Mr. JAMES G. WATT,
Secretary, Natural Resources Committee, Chamber of Commerce of the United States, Washington, D.C.

DEAR Mr. WATT: Following are my comments on the questions you raised in your November 8, 1967, letter concerning definitions of degree of treatment in relation to compliance with water quality standards.

Policy statement Number 8 in the "Guidelines for Establishing Water Quality Standards for Interstate Waters" includes the following statements: (1) "No standard will be approved which allows any wastes amenable to treatment or

control to be discharged into any interstate water without treatment or control regardless of the water quality criteria and water use or uses adopted;" and (2) "... no standard will be approved which does not require all wastes ... to receive the best practicable treatment or control unless it can be demonstrated that a lesser degree of treatment or control will provide for water quality enhancement commensurate with proposed present and future water uses."

The intent of this and other policy statements is to meet the requirement of the Federal Water Pollution Control Act, as amended, which is to enhance the quality of water. In this country, secondary treatment has become the conventionally accepted level of treatment necessary to protect present and future water uses and yet meet the test of economic and technical feasibility. It is usually the degree of treatment implied in the phrase—"best practicable treatment."

Most water pollution control officials can agree on a general definition for secondary treatment as applied to municipal wastes. It is more difficult, however, to get a consensus on a precise definition for industrial wastes. Thus, the use of phrases like "comparable degree of treatment" or "equivalent high degree of treatment." Recognizing the vast differences in the characteristics of industrial wastes, the definition of acceptable treatment will have to be applied with reason and tailored to the amenability of specific wastes to receive treatment. In all cases, the test of technical and economic feasibility must be met.

The standards as adopted by the States often place industrially biodegradable wastes in the same category as municipal sewage. When acceptable treatment is defined numerically for these wastes it often is expressed as at least 80 to 90 percent removal of the biochemical oxygen demand (BOD). The States and this Department recognize that some highly concentrated organic industrial wastes may require removal efficiencies exceeding the 80 to 90 percent figure.

Acceptable removal efficiencies for non-biodegradable wastes have not been defined by the States nor have quantitative guidelines been issued by the Federal Water Pollution Control Administration. The thrust of pollution abatement efforts in the past has been usually directed at stream standards, not effluent standards. To meet drinking water or aquatic life protection standards this may have required removal efficiencies of certain inorganic pollutants that exceeded the 80 to 90 percent values. This is particularly true for materials such as heavy metals and cyanide. These materials and organic compounds such as phenols can seriously impair the usefulness of water resources, when present in very small quantities.

In summary, the phrase "comparable degree of treatment" will be interpreted reasonably by State and Federal water pollution control officials. It will take into account feasible technology and economics. In many instances the requirement for this degree of treatment will mean the construction of conventional secondary treatment facilities. Furthermore, in the case of biodegradable waste, it may mean effluent quality similar to that for municipal effluents (a few States have expressed their requirements in this fashion). Also, in some instances, it will mean in-plant process controls coupled, if necessary, with waste treatment.

A high degree of waste treatment or control should implement our goal of preventing water quality degradation down to some limiting value required for specific water uses. It will also meet Secretary Udall's goal of making water as clean as possible, not unclean as possible.

Sincerely yours,

FRANK C. DiLUZIO,
Assistant Secretary of the Interior.

TAX INCENTIVES FOR INDUSTRIAL WASTE TREATMENT FACILITIES, BY JAMES G. WATT¹

Present water pollution control programs make wise corporate decisions extremely difficult. Before an executive can commit the resources of a corporation for waste treatment facilities, he needs to know how much water treatment is necessary to assure the desired water quality and how soon the facilities must be in operation. Can he be sure of what the government requirements will be tomorrow, next year, or two years from now? He needs to know the various alternatives available for financing the pollution control and abatement facilities. Can he anticipate what financial "benefits" might be made available if he were to wait for Congress to act?

¹ Secretary, Natural Resources Committee and Environmental Pollution Advisory Panel, Community and Regional Resource Development Group, Chamber of Commerce of the United States, 1615 H Street, N.W., Washington, D.C. 20006. Presented to the Association of State and Interstate Water Pollution Control Administrators at its Annual Meeting in Hartford, Connecticut, on December 13, 1967.

Frustrating questions such as these make today's program timely and valuable. I appreciate the opportunity to discuss with you the question of "Tax Incentives for Industrial Waste Treatment Facilities."

The *best* incentives that could be provided would be the establishment of meaningful and reasonable water quality standards and the adoption of a realistic timetable for their implementation. These are the objectives of the Water Quality Act of 1965 as set forth in the Congressional Committee reports and the floor debate which accompanied the passage of the Act. Unfortunately, recent evidence suggests some state and interstate water quality standards approved by the Secretary of Interior include requirements which would bypass the water quality criteria defined at the public hearings.

When Congress enacted the Water Quality Act of 1965, it delegated to the Secretary extensive authority to implement a program that would assure the adoption of meaningful and effective state water quality control programs. The purpose of these state programs is to "enhance the quality and value" of our interstate water resources for the benefit of the "public health and welfare." It was the quality of the waters of the nation that was of concern to the members of Congress. Unfortunately, it appears as if the Secretary of Interior is more interested in requiring secondary treatment of all waste waters, as a matter of policy, irrespective of quality requirements.

In many instances, the difference between primary and secondary treatment will not be significant to the receiving waters. In such cases, it is poor public policy to require the additional cost of secondary treatment. Treatment for treatment's sake is a luxury we cannot afford when we are confronted with a war in Viet Nam, slums, unemployment, and a multitude of domestic problems, plus a hungry world.

On August 9, 1967, Secretary Udall appeared before the Senate Public Works' Subcommittees on Air and Water Pollution to relate the progress of the Federal water pollution control effort. In discussing the approval of state water quality standards, he remarked:

"The most significant single thing about the standards that I have approved is that they call for a minimum of secondary treatment for all municipal wastes and a comparable degree of treatment for industrial wastes."

November 8, on behalf of the National Chamber, I wrote to Assistant Secretary for Water Pollution Control, Frank C. DiLuzio, and asked if he would clarify those remarks so the business community could make appropriate plans. Our letter stated, "The interpretation of the phrase 'comparable degree of treatment' has caused much concern in the business community. Does this phrase imply the actual construction of a secondary treatment facility? Does it imply that an industrial waste effluent should have a quality as high as an effluent from a municipal secondary treatment plant? Does this phrase imply a certain percentage reduction of waste load regardless of the quality of the receiving water body?"

Unfortunately, I have not received an answer to that November 8 letter, and thus am unable to report to you how the Office of the Federal Water Pollution Control Administration has interpreted the statement of Secretary Udall.

The interpretation and application of Secretary Udall's statement could conceivably cause us many problems in the months ahead. In fact, trouble has already started. States which have agreed to the Secretary's demands are now experiencing difficulty in defining what constitutes the equivalent of secondary treatment for industrial waste. If your state's legislation calls for a program to assure acceptable water quality, you, as administrator of the program, will have to show that the discharges are damaging that quality. Whether or not the alleged offender (municipality or industrial plant) does or does not have a secondary treatment facility is not the material issue. If the court finds that the water quality is not impaired by the waste discharged, the standards which include a requirement for secondary treatment could be thrown out, even though approved by the Secretary of Interior. Thus, the efforts to improve a meaningful water pollution control program would be set back for an indefinite period of time. We cannot afford this risk. We need a meaningful and a determined program that will secure for ourselves and future generations, a desirable quality of water.

The guidelines issued by the Department of Interior have been considered by some as having the strength of law. But the federal Act did not require that conference conclusions and secondary treatment, as a minimum, be included in state standards. For the states to adopt standards solely to be in conformity with the guidelines is courting trouble.

The alarm has already been sounded by Frank J. Barry, Solicitor of the Department of Interior. The Bureau of National Affairs reported in its Daily Report of July 28, 1967, the following:

"The Water Quality Act of 1965 'is not a law at all,' in the judgment of Interior Department Solicitor, Frank J. Barry, but merely a 'methodology' for developing water-pollution-control standards of doubtful enforceability.

"Mr. Barry was one of four speakers here (San Francisco) at a water pollution program sponsored by the Federal Bar Association's Real Estate Committee at the association's 1967 convention.

"He recognized that the 1965 act will serve the purpose of focusing public attention on those industries and communities that are 'the bad guys' of water pollution. In that sense, he viewed it is a small step in the right direction.

"But a solution to the water pollution problem and preservation of our vital water resource, he went on, call for a major adjustment in our society. Unless the adjustment is made—and 'there will be some bitter battles fought'—water pollution is one of the ways we can 'burn up our civilization,' he declared."

Dr. Mitchell Wendell, Legal Counsel to the Council of State Governments, and Secretary of this Association of State Industrial Water Pollution Control Administrators, has also raised the warning flag. At the Water Pollution Control Federation Meeting, earlier this year, Dr. Wendell questioned the enforceability of the FWPCA's requirements that state water quality standards demand secondary treatment or its equivalent.

Our federal and state government officials could well afford to take a new look at the present effort. Uniformity of effluent standards may readily be conceded as the approach which makes administration easier. But, is it best for the country? Is it worth the cost to the taxpayer and the consumer on whom the burden ultimately falls? In the long run, will it be a source of pride to the administrators of the program?

The topic of the discussions today is tax incentive for industrial waste treatment facilities. The word "incentive" is actually a misnomer. The social responsibility of industry and the laws provide the incentives. What society, including the municipalities and industries, should be looking for is the mechanism which would permit, at the lowest level possible, the fastest achievement of pollution control at the least cost to the general public.

Because Congress determined as a matter of policy that pollution should be controlled and abated at a vastly accelerated rate and made the federal government a party to the action, it is reasonable to expect that the federal government would provide a portion of the funding required. Congress has already provided some financial assistance to municipalities. In addition, many members of Congress, both in the Senate and House, have introduced legislation to extend the policy of financial assistance to industry. These proposals would give industry additional tax credits ranging from 7% on up for investments made in waste treatment facilities. However, no formal Congressional Committee action has been given to these bills. The Senate Committee on Public Works, as Mr. Richard Royce, Chief Clerk, has indicated, believes Congress should give consideration to tax relief proposals for industrial pollution control activities. The Committee has properly based its reasoning on the fact that pollution control does not constitute a revenue-producing investment to industry, but rather is an environmental improvement. The Committee report stated, "Installation of pollution control devices is costly and in many cases nonremunerative. The billion dollars of capital investment which will have to be made by the industrial sector for the benefit of the entire society will place a substantial burden on corporate resources and ultimately on the general public."

Industry has supported the use of tax credits. In fact, industry has sought them to offset the high cost of constructing pollution control and abatement facilities. Furthermore, if the FWPCA requires the states to demand secondary treatment of all waste water discharges, industry will be required to ask Congress for substantial increases in the tax credits allowed for capital investments in waste treatment facilities, if it is to be able to have the financial capability for continuing productive capacity expansion.

The Board of Directors of the National Chamber of Commerce has gone on record to say:

"Present federal pollution control programs emphasize treatment methods and construction of facilities. This emphasis requires that industry make large capital investments and expensive attempts to improve performance of present govern-

men-approved methods. Consequently, industry has sought tax credits and accelerated amortization provisions for anti-pollution devices. Additional tax credits and accelerated amortization will be needed if the present programs are continued.

"Serious study needs to be given to incentives that would relate to performance in waste reduction rather than to the installation of particular treatment methods. One weakness of the present programs is that they tend to encourage the use of established waste treatment methods to the possible exclusion of more efficient solutions such as process changes, or in the case of water, in-stream treatment. The present emphasis also encourages large investments in individual capital facilities which may soon face obsolescence should jointly owned or operated facilities or less capital-intensive methods prove to be more efficient."

If the federal government is going to demand that the states require secondary treatment of all wastes, a good case can be made for a substantial increase in the tax credit allowed for investment in treatment facilities as being expenditures for some public benefit rather than as treatment required to prevent injury to another.

However, it is also important to note that the mere authorization by Congress of a tax credit is of no value unless industry can take advantage of that tax credit. You will recall that for five months Congress suspended the 7% investment tax credit except for those expenditures which were made for pollution control and abatement facilities. For that period of time the Internal Revenue Service required that there be federal certification of those investments. Secretary Udall proposed, in the Federal Register of February 1, 1967, a set of conditions that would have to be met for industry to take advantage of the 7% tax credit. That proposed rule has never been promulgated, but, if it had, or if a similar rule would be applied to additional tax credits made available by Congress, it would almost negate the incentive intended.

Under these proposed rules, the Secretary would require double certification. That is, certification by state authorities and by the federal officials. Under these proposed rules to get the federal certification, conditions above and beyond the state requirements would have to be met. For industries seeking the tax credit, the net effect would have been the pre-emption of the state water quality standards by a federal effluent standard. Thus, the intent of the Water Quality Act of 1965 could have been substantially altered by the use of the proposed federal tax credit certification requirements.

If Congress should allow industry a substantial tax credit for treatment facilities, the entire credit could be of little or no value to industry by reason of the Secretary's certification requirements. Congress should set forth the specific qualifications, or provide that state certification will be sufficient to qualify for the federal tax credit.

Tax assistance to encourage water pollution abatement has been recognized as in the public interest by a number of states. However, the tax credit application can be a problem when it is difficult to show what part of the capital investment in a new plant has actually gone into pollution control and abatement facilities. This points up the advisability of defining in any legislation what the rules should be for certification. States have had to devise such rules for application of their credits. Granting the states the responsibility of certification for federal tax credit allowances would be a practical approach that would eliminate duplication of effort and expense.

Let me summarize my comments on tax credits by saying that if the present FWPCA program continues to demand that states arbitrarily insist upon secondary treatment of all effluent, industry is unquestionably going to need substantial tax credits to finance the costly and unprofitable treatment facilities.

Another "incentive" that might be made available to industry would be an allowance for the accelerated amortization of their waste treatment facilities. The business community would favor the quick write-off of their capital costs in a one-to-three year period. This would be most helpful when coupled with tax credits.

The Senate Public Works Committee suggested that Congress should also give consideration to a federal loan program designed to assist industry with the costs of pollution control. The Committee suggested that a Rural Electrification-type program might be helpful. This REA program, as you know, was designed as a social program to enhance the welfare of our rural citizens. The Committee states that, "The control of pollution is even a more important welfare requirement of our urban population."

It may be advisable for the government to provide such a loan program, particularly, for some of the smaller or marginal plants that do not have the capital available for financing the costly waste treatment facilities. Such a program could be beneficial, but it does not provide a significant contribution to the costs of pollution control and abatement facilities. Rather, there would be the additional cost of the administration of the program.

One meritorious possibility for giving aid to industrial plants for pollution control and abatement would be for the federal government to make block grants to the states for that specific purpose. The states could then administer a program which would allow for grants or loans to those plants which need the funds to meet the state requirements. This would permit the local authorities to provide the assistance where it is most urgently needed to improve water quality.

In discussing programs that the federal government might inaugurate to assist in our continuing efforts to control and abate pollution, I feel compelled to comment upon the suggestion made by some that an effluent fee program be established. Conceptually, the effluent fee program would require industrial plants and municipalities to pay for the wastes discharged into streams and rivers. This possibility was given serious attention by a Study Committee made up of officials from the U.S. Departments of Treasury, Interior, Commerce, HEW, the Bureau of the Budget, and the Council of Economic Advisors. In August, 1966, this committee reported, based upon the information it had at that time, "that effluent fees provide an effective and highly efficient incentive for water pollution control. The Committee, therefore, recommends their use in addition to the enforcement provisions enacted in the Water Quality Act of 1965."

The information and data presently being gathered by a similar committee within the government, has overwhelmingly shown such a program would be unworkable. Under present circumstances, the business community would also have to oppose any such program.

The knowledge now available indicates how important pollution control policies are to the nation, not only for the sake of water quality, but because of the financial costs to the country. Estimates of the costs of treatment, i.e., amortization of the capital investment and operation and maintenance costs, indicate that capital costs are about one-fourth to one-third the total costs. In other words, the operation costs will be about twice the construction costs. It must be remembered that operating costs are a tax deductible item. Thus, if increased treatment is required, it reduces future taxable income. If the increased treatment provides no realizable benefit in the stream, the public receives no benefit and the governments, state and federal, lose revenues.

Dr. Henry C. Bramer, an industrial economist, formerly of Mellon Institute, who is well qualified in the field of pollution control mechanics, as well as economics, recently reported to the American Institute of Chemical Engineers how financially important water pollution control decisions are to the American taxpayer.

First, he reported that, on the average, operating costs to treat each thousand gallons of industrial process water would amount to:

- 10 cents for primary treatment,
- 20 cents for secondary treatment,
- 40 cents for tertiary treatment.

In other words, each decision to require the next higher degree of treatment doubles the operating cost.

For American industry, which utilizes 3,700 billion gallons of water a year for processing purposes, the operating costs would be:

- \$370,000,000 for primary treatment,
- \$740,000,000 for secondary treatment,
- \$1,480,000,000 for tertiary treatment.

Secondary treatment thus adds \$370 million per year to the cost of treating industrial water. Unless it is justifiable, it would be a poor allocation of resources. What it adds as a cost to municipalities I do not know.

But, Dr. Bramer offers an even more ominous warning when he cautions that the cost of process water treatment is smaller than the cost of lowering the temperature of "cooling water" used by industry to meet an arbitrary effluent standard, such as 90° F.

For American industry, the operating and amortization cost to provide cooling facilities will be in excess of \$1 billion a year according to Dr. Bramer.

Secondary treatment of process water plus the cooling of "cooling water" thus means an annual cost of \$1.8 billion.

If requirements for secondary treatment are limited to those areas where it is justified, the final cost will be somewhere between the \$370 and the \$1,800 million a year.

The next few months are crucial for the development of our water pollution control programs. The public needs to know the costs of pollution control and the benefits to be gained, so that our policy makers can make the right decisions in directing the use of the limited resources of our municipalities and industries and thus, the people. This is a responsibility of the technical leaders.

In summary, let me say again that the best incentive that could be made available to the industrial community, and I am sure to the municipalities, would be the establishment of reasonable standards, coupled with a realistic timetable, that would protect the water quality in our rivers, streams, and lakes. If we are concerned with the quality of water as differentiated from the quality of the effluents, the question of reasonableness—reasonable standards and reasonable time periods—can be easily determined by you, the administrators of the state programs, the federal officials, and representatives of the business-industrial community.

I appreciate the opportunity of discussing these problems with you.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., March 4, 1968.

HON. JAMES A. RHODES,
Governor of Ohio, Columbus, Ohio.

DEAR GOVERNOR RHODES: I am pleased to inform you that, except as noted below, I have approved the water quality standards of the State of Ohio, based upon my determination that they are consistent with the protection of the public health and welfare, the enhancement of the quality of the water, and the purposes of the Federal Water Pollution Control Act, as provided by Section 10 (c) (3) of that Act. Accordingly, the standards as approved are those applicable under the Act to the interstate waters of Ohio.

A basic policy of the Act is to protect and enhance the quality and productivity of the Nation's waters. Our review and study of the standards to date has reinforced our conclusion that implementation of this policy requires a standard substantially in accordance with the following:

Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. These and other waters of your State will not be lowered in quality unless and until it has been affirmatively demonstrated to the State water pollution control agency and the Department of the Interior that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made of, or presently possible in such waters. This will require that any industrial, public or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required, as part of the initial project design, to provide the highest and best degree of waste treatment available under existing technology and, since these are also Federal standards, these waste treatment requirements will be developed cooperatively.

The standards submitted by your State did not include a comparable provision, and, since it is our mutual desire to carry out the purposes and intent of the Act, I would appreciate your early concurrence with regard to incorporating such a comparable provision as a part of the enforceable standards of your State. Please advise, in addition, the time when the procedure for this purpose can be initiated and completed.

You will recall that my letters of July 18 and August 7, 1967, indicated that the water quality criteria and plans of implementation submitted by Ohio for its interstate waters had been reviewed. In each letter, I noted some of the significant issues which had to be resolved between our water pollution control agencies before these criteria and plans could be approved as Federal standards under the Act. Our water pollution control agencies have met and have reached agreement on a number of revisions. I wish to commend your water pollution control officials for their cooperation, and I am gratified by the high water

quality goals Ohio has set and the ambitious program the standards provide for protecting and enhancing interstate waters to make beneficial water uses, such as recreation and fishing, broadly available. The program which Ohio proposes for upgrading the quality and uses of the Great Miami River is admirable.

One component of this agreement which I consider particularly significant to our future programs is that Ohio indicates its acceptance of the recommendations of the Lake Erie Federal Enforcement Conference and Technical Committee report for upgrading the quality of the Lake. This will require vigorous and early implementation of treatment requirements and programs for nutrient control, especially in the Toledo and Cleveland harbor areas. We anticipate that implementation of treatment measures will provide significant enhancement of presently polluted areas. In particular, I hope that accomplishment of treatment will raise the quality in Toledo Harbor to such an extent that the existing "Aquatic Life B" criteria and classification can be raised. It will be desirable to monitor water quality continuously so that improvements are readily discerned and any appropriate upgrading of criteria, use designations or treatment requirements can be made as soon as possible.

I am excepting standards for the Mahoning River from my approval until the State has adopted standards for the River above Newton Falls and satisfactory compliance with the actions of the Federal Enforcement Conference held on the Mahoning River is obtained.

I am also expecting from my approval the odor criterion for Little Ronver, Yankee and Pymatuning Creeks pending completion of current studies on this problem. Further, I am excepting from approval the temperature and dissolved oxygen criteria for waters classified as "Aquatic Life A." These criteria, particularly in the case of high quality waters, should reflect natural conditions more closely and thereby more adequately protect the indigenous aquatic life. This will, in our opinion, necessitate lowering the maximum temperature limits in many cases. As for the dissolved oxygen criteria, it appears that establishment of higher limits is possible and warranted in many parts of the State. In particular regard to the cold water streams, Turkey and Conneaut Creeks, we believe a very stringent temperature limit should be set, preferably allowing no change over normal, to fully protect the scarce cold water fisheries. I have asked the Federal Water Pollution Control Administration to contact your water pollution control officials for the purpose of conducting a cooperative study of available data which will enable establishment of more adequate and tailored criteria.

In view of the special needs and conditions of Lake Erie and the necessity of establishing a lake-wide program, I believe that compatibility of Lake Erie's temperature criteria among the Lake States is very important. I am requesting the Federal Water Pollution Control Administration to contact the water pollution control officials in each of these States so that consistent temperature limits can be developed.

In addition, it appears that clarification is required of the areas in the Ohio River where (primary contact) recreational use is protected. We believe that a substantial part of the Ohio River should be protected by bacteriological standards so that recreational use is possible. I would appreciate receiving within six months supplemental information from Ohio showing the areas on the Ohio River where recreation is designated as a use, along with appropriate bacteriological criteria.

In addition to the items which I am excepting from my approval and the necessary clarification discussed above, I would like to call your attention to an area in which I believe an addition to the standards would be desirable. This is protecting, by means of appropriate bacteriological criteria, secondary contact recreation associated with fishing in waters classified for protection of aquatic life. Ohio's standards do not presently include bacteriological limits in the aquatic life criteria, and I recommend that Ohio adopt such limits to protect secondary contact recreation in waters classified for aquatic life which are not classified for other uses (e.g., public water supply or primary contact recreation) which provide bacteriological criteria that are comparable or more stringent.

Successful implementation of the standards is the key to accomplishing our mutual goals of enhancing the quality and productivity of our waters. Adherence to the high degree of treatment specified and the time schedule proposed in the implementation plan is thus very important. The annual State program plan, which your State water pollution control agency prepares and submits to the

Federal Water Pollution Control Administration in connection with our grant program can provide a basis for updating information on the status of implementing the standards.

Lastly, it is evident that our waste treatment and water pollution control technology will advance and knowledge of water quality requirements for water uses will improve, and the collection of water quality data will make more information available to assure more accurate assignment of water quality criteria. As this new knowledge becomes available, we will further expect to cooperate with the State of Ohio in making necessary amendments to the standards that have been theretofore approved. It will be our pleasure to continue to work together to protect, upgrade and enhance the quality of the waters of your State.

Sincerely yours,

STEWART L. UDALL,
Secretary of the Interior.

MARCH 22, 1968.

HON. STEWART L. UDALL,
Secretary of the Interior,
Washington, D.C.

DEAR MR. SECRETARY: This is to acknowledge your letter of March 4, 1968, approving, with certain exceptions, the water quality standards for Ohio's interstate waters adopted by the Ohio Water Pollution Control Board and submitted to you as required by Section 10(c) (3) of Federal Public Law 660.

Regarding the exceptions, for many years it has been the policy in Ohio to protect waters of high quality by requiring the installation of facilities to provide the most effective waste treatment available under existing technology. I am confident there would be no hesitancy on the part of the Ohio Water Pollution Control Board and there would be no conflict with actions already taken by this Board by adopting a clarification of the standard proposed by you, as follows:

"Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality so as not to interfere with or become injurious to any assigned uses made of, or presently possible, in such waters. This will require that any industrial, public or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required, as part of the initial project design, to provide the most effective waste treatment available under existing technology."

Your suggested inclusion of the Department of the Interior as an agency for the enforcement of Ohio water quality standards appears to call for a *legally impossible* delegation of authority by the Ohio Water Pollution Control Board.

The formal adoption of a clarified standard by the Ohio Water Pollution Control Board, as proposed above, should satisfy the other requirements set forth in your letter except those for the Mahoning River, and Little Beaver, Yankee and Pymatuning Creeks. I recognize that further studies and conferences are needed to consider your conditions for approval of the water quality standards for these streams. Your suggested changes in the temperature and dissolved oxygen criteria would very likely require additional public hearings and justifications by your staff that such changes are necessary for adequate protection of the waters under consideration.

I would appreciate receiving your comments with regard to this matter at your earliest convenience.

Sincerely,

JAMES A. RHODES, *Governor.*

GOVERNOR'S OFFICE,
Denver, Colo., February 23, 1968.

HON. STEWART L. UDALL,
Secretary of the Interior,
Washington, D.C.

DEAR SECRETARY UDALL: Since the passage of the Federal Water Quality Act of 1965, Colorado has made every effort to comply with this federal legislation. However, due to the constantly vacillating requirements and opinions of the Federal Water Pollution Control Administration and the Department of the Interior, cooperation between Colorado and the federal establishment has become

exceedingly difficult. On at least three occasions, members of our State Water Pollution Control Commission and staff members of our Water Pollution Control Division have met with representatives of the Federal Water Pollution Control Administration to resolve differences regarding our Colorado Water Quality Standards. At the conclusion of each of these meetings, it was felt by both State and Federal representatives that an agreement had been reached and this agreement was conveyed in letter form to your office.

The last such meeting between our Commission and staff and representatives of the Federal Water Pollution Control Administration was held in Denver on November 14, 1967. The understanding between the State of Colorado and your representatives was conveyed to you in a letter dated December 11, 1967. A reply to this letter was received on February 7, 1968. In this reply, it was stated, in essence, that your department could agree, with one exception, to the changes proposed to our water quality standards once they had been formally adopted after the due process of public hearings. The one exception was with regard to temperature criteria for cold water and warm water fishing areas. Specifically, the question arises as to whether we should set definite numerical limits for temperature changes allowed in warm and cold water fisheries. A member of our Water Pollution Control Commission, who is also a staff member of our Game, Fish and Parks Department, points out that in Colorado the fish are often dropped into lakes and streams with as much as a 10° temperature differential. In many of our streams the difference between day and night temperatures in the stream have often exceeded the temperature changes recommended by your department. We have not found that this temperature change has affected the fish in any way. Furthermore, due to the scarcity of water in Colorado, cooling towers are normal at most plants and consequently, very little warm water is discharged into the waters of the state. We feel that we are adequately protecting both the cold and warm water fish in our state by the following statement:

"No temperature rise will be permitted which will interfere with spawning or other aspects of fish life."

On February 14, 1968, we received your news release dated February 8, 1968, entitled: "Water Quality Degradation issue Resolved." We are particularly disturbed with some of the statements made in this release. In Colorado we have many streams whose existing water quality is better than the established standard for that stream and we intend to maintain this high quality as long as is humanly possible. By requiring secondary treatment of municipal wastes and the equivalent for industrial wastes for all waters of our state, we feel that we have shown that we intend to preserve the quality of our State's waters. However, we also realize that as our state grows and as more industry and people move into our state, limited degradation will occur. We feel that even with this limited degradation we will be able to maintain the high quality of our waters.

The one statement in your release that especially disturbs us is as follows: "These and other waters of a state will not be lowered in quality unless and until it has been affirmatively demonstrated to the state water pollution control agency and the Department of Interior that such changes are justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made of or presently possible in such waters."

Colorado does not feel that any state should be asked to give to a federal agency or department the authority to control the economic growth and development of that state. As we interpret this statement, this is exactly what we feel you are asking us to do. We strongly feel that the economic growth and development of any state should be within the prerogatives of that state and that state alone. We feel that to carry out such a policy is in direct opposition to Section 1(c) of the Federal Water Quality Act which states:

"Nothing in this Act shall be construed as impairing nor in any manner affecting any right or jurisdiction of the states in respect to the waters (including boundary waters) of such states."

Therefore, the Colorado Water Pollution Control Commission requests that the vacillation back and forth with regard to our water quality standards be resolved by your office. The Commission has stated in all of their correspondence, meetings with representatives of your office, as well as in our Plan of Implementation and State Plan, that our state intends to meet the spirit of both the Federal and State Law. We, therefore, request immediate approval of our standards so that we can get on with the job of abatement and control.

Sincerely,

JOHN A. LOVE.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., February 15, 1968.

HON. LURLEEN WALLACE,
Governor of Alabama, Montgomery, Ala.

DEAR GOVERNOR WALLACE: A review of the situation with regard to the Alabama water quality standards has convinced me it is possible to approve your standards with certain exceptions that were noted in my previous letter to you. I believe that such an action will allow translation into Federal Standards of the bulk of the fine Alabama Standards and narrow down the remaining items yet to be resolved to the dissolved oxygen and temperature criteria for Fish and Aquatic Life as well as the requirement for a statement on the degradation of waters of existing high quality.

In the course of approving the various standards submitted by the States, it has become obvious to me that some of those approved last summer were not of the same quality which we are now requiring. Accordingly, we have embarked on a program to review those earlier approvals and to require upgrading of such parameters as temperature and dissolved oxygen to make them consistent with those we are now requiring for other States. I point this out to you, particularly since this is the case with one of your neighboring States, and I want to assure you that we will ask for adoption of temperature and dissolved oxygen parameters as well as a water quality degradation statement similar to those requested of Alabama.

For these reasons, I am pleased to inform you that, except as noted below, I have approved the water quality standards of the State of Alabama based upon my determination that they are consistent with protection of public health and welfare, enhancement of water quality, and the purposes of the Federal Water Pollution Control Act, as provided by Section 10(c) (3) of that Act. Accordingly, the standards as approved are those applicable under the Act to the interstate waters of Alabama.

A basic policy of the Act is to protect and enhance the quality and productivity of the Nation's waters. Our review and study of standards to date has reinforced our conclusion that implementation of this policy requires a standard substantially in accordance with the following:

Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. These and other waters of your State will not be lowered in quality unless and until it has been affirmatively demonstrated to the State water pollution control agency and the Department of the Interior that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made of, or presently possible, in such waters. This will require that any industrial, public or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required, as part of the initial project design, to provide the highest and best degree of waste treatment available under existing technology, and, since these are also Federal standards, these waste treatment requirements will be developed cooperatively.

The standards submitted by your State did not include a comparable provision, and, since it is our mutual desire to carry out the purposes and intent of this Act, I would appreciate your early concurrence with regard to incorporating such a comparable provision as a part of the enforceable standards of your State. Please advise, in addition, the time when the procedure for this purpose can be initiated and completed.

I am excepting from my approval the temperature and dissolved oxygen parameters as set forth in the State's submissions of specific water quality criteria for shellfish harvesting and for fish and wildlife for all interstate waters specifying these uses. I believe these criteria can be upgraded so that they protect existing high quality and reflect improved conditions in presently polluted waters as these are expected to result from implementation of treatment requirements. The numerical changes required to accomplish this are relatively small, and I hope you will agree to have your staff work with mine to resolve the problem rapidly.

In the course of earlier discussions between our respective staffs, a number of agreements were reached which led to revisions in the standards I am now approving. One component of these agreements which I consider particularly sig-

nificant to our future programs is that the Alabama Water Improvement Commission has upgraded its policy for minimum treatment of industrial wastes to a requirement for 75 percent BOD removal. It is my understanding that this is the minimum value which applies to any type of biodegradable industrial waste. However, where wastes are amenable to higher levels of treatment, we understand that substantially greater treatment will be attained in order to maximize water quality enhancement. I would expect to follow the success of this policy with interest, and stand ready to cooperate with you wherever necessary to achieve this mutual goal.

The Commission also agreed to a joint review with the Federal Water Pollution Control Administration to determine adequate bacteriological criteria for protection of public water supply and recreational uses of water, and to modify the standards as necessary. Furthermore, the Commission has agreed to a high degree of treatment of wastes in the Mobile Bay area and to review the water quality of the area as treatment requirements are implemented so that any appropriate revisions in the criteria and use classifications can be made. It will be necessary to monitor water quality continuously so that improvements are readily discerned and criteria and use changes made as soon as possible. Here, too, my Department stands ready to assist you in any way possible or necessary.

Successful implementation of the standards is, of course, the key to accomplishing our mutual goals of protecting and enhancing the quality and productivity of Alabama's interstate waters. Alabama is to be commended for its policy of requiring a minimum of secondary treatment for all waste discharges. Adherence to the degree of treatment specified and the time schedule proposed in the implementation plan is very important if the objectives of the water quality standards program are to be met. The annual State program plan, which your State water pollution control agency prepares and submits to the Federal Water Pollution Control Administration in connection with our grant program, can provide a basis for updating information on the status of implementing the standards.

Lastly, it is evident that our waste treatment and water pollution control technology will advance and knowledge of water quality requirements for water uses will improve, and the collection of water quality data will make more information available to assure more accurate assignment of water quality criteria. As this new knowledge becomes available, we will further expect to cooperate with the State of Alabama in making necessary amendments to the standards that have been theretofore approved. It will be our pleasure to continue to work together to protect, upgrade and enhance the quality of the water of your fine State.

Sincerely yours,

STEWART L. UDALL,
Secretary of the Interior.

WATER IMPROVEMENT COMMISSION,
STATE OFFICE BUILDING,
Montgomery, Ala., February 27, 1968.

HON. LISTER HILL,
Senator, State of Alabama,
Senate Office Building,
Washington, D.C.

DEAR SENATOR HILL: The Alabama Water Improvement Commission sincerely regrets the necessity for again bringing to your attention the matter of Federal approval of water quality standards adopted by the Commission for interstate waters of our State. As matters stand, we need your advice and counsel in resolving the apparent impasse which has developed between the Department of the Interior and the State with respect to dissolved oxygen and temperature criteria for waters supporting fish and aquatic life and, more particularly, the water quality degradation statement the Secretary of the Interior, Honorable Stewart L. Udall, in his latest communication with Governor Wallace, has requested as a part of our water quality standards.

I know that you have been concerned over the status of Alabama's water quality standards and have a real interest in this matter of paramount importance to our State. I assume you are aware of the Secretary's letter to Governor Wallace, dated February 15, 1968 and referred to above, in which the Secretary expresses approval of Alabama's standards, with exceptions. The exceptions taken by the

Secretary are dissolved oxygen and temperature parameters contained in the State's water quality criteria for shellfish harvesting and fish and wildlife for all interstate waters specifying these uses. With minor exceptions, Alabama's standards specify the use of all interstate and coastal waters for fish and wildlife and, in many instances, for swimming and public water supply. The only exceptions are Hog Bayou, Three Mile Creek and the lower three miles of Chickasaw Creek in Mobile County which are classified for navigation and the lower eight miles of Mobile River which section is classified for agricultural and industrial water supply. In view of this, standards for the vast majority of Alabama's interstate and coastal waters are yet to receive the unqualified approval of the Secretary. It is interesting to note that the classifications and criteria for the above cited exceptions were approved by the Secretary in his letter of February 15th to Governor Wallace. I should point out that the Secretary's objections to Alabama's dissolved oxygen and temperature criteria for fish and wildlife remain unchanged from those expressed in his letter of January 19, 1968 to Governor Wallace although the Governor, for reasons stated in her letter to the Secretary, dated February 5, 1968, requested approval of Alabama's standards as submitted. Reproductions of the Secretary's letters of January 19th and February 15th and the Governor's letter of February 5th are attached.

As it now stands, the Secretary continues to object to Alabama's dissolved oxygen and temperature criteria for fish and wildlife and asserts that he will require those states whose standards have been approved with criteria similar to Alabama's to revise their criteria to make them consistent with his present requirements. Furthermore, the Secretary's letter of February 15th imposes a new requirement, incorporation of a water quality degradation statement in Alabama's standards, which he had stated in a news release, dated February 8, 1968, will be applied to all states, including those with approved standards. I will comment on this water quality degradation statement, which has far-reaching implications and should be of grave concern to all states, later in this letter.

Perhaps a resumé of the record will give you an understanding of the dilemma we seem to be facing. As you know, Alabama, along with all other states, agreed to establish water quality standards for interstate waters as provided by the Water Quality Act of 1965. After holding fourteen public hearings during November-December, 1966 and January, 1967, the Commission adopted standards not only for interstate waters but also intrastate waters in all river basins containing interstate waters. These standards and a plan of implementation were submitted to the Secretary on June 26, 1967. It is significant that neither the Department of the Interior nor its administrative agency for water pollution, the Federal Water Pollution Control Administration, issued statements or information regarding dissolved oxygen and temperature criteria for fish and wildlife prior to or during the Commission's public hearings on water quality standards. At least one representative of the Federal Water Pollution Control Administration attended each of the Commission's hearings. The only comments by a representative of the Federal Water Pollution Control Administration were made verbally in April, 1967 when a member of the Commission's staff was told that the Washington Office of the Federal Water Pollution Control Administration had reviewed Alabama's dissolved oxygen criteria but had made no comments. The Federal Water Pollution Control Administration representative also told our staff member that the maximum temperature of 95° F., originally proposed by the Commission, was felt to be too high. The maximum temperature was lowered to 93° F. in the standards adopted by the Commission.

On July 18, 1967, Secretary Udall advised Governor Wallace that his Department's review of Alabama's water quality criteria and implementation plan had been *completed* and that these documents reflected an impressive effort. The Secretary further stated that the criteria and plan "set forth a realistic and workable program for protecting and enhancing the quality and productivity of Alabama's interstate waters in accordance with the intent of the Federal Water Pollution Control Act, as amended" but that a few issues must be resolved before he could approve Alabama's standards. The issues listed by the Secretary as requiring resolution were:

1. The degree of treatment for industrial waste.
2. Quality requirements for the navigation use classification.
3. Quality requirements for the Mobile River.
4. Bacteriological criteria for recreational and public water supply.
5. Exemption of cooling water discharges from temperature criteria.

It is most interesting, in view of present circumstances, that dissolved oxygen and temperature criteria for fish and wildlife were not listed by the Secretary, in his letter of July 18, 1967, as issues which must be resolved. We were later advised that listing of cooling water discharges was an oversight since these discharges were specifically covered in the standards originally submitted by Alabama.

Discussions of the issues raised by the Secretary in his letter of July 18, 1967, copy attached, were initiated immediately by the Commission's staff and representatives of the Federal Water Pollution Control Administration. These discussions led to mutual agreements which were formally adopted by the Commission on August 24, 1967 and forwarded to the Atlanta Regional Office of the Federal Water Pollution Control Administration on August 30, 1967 in accordance with the Secretary's instructions. This submittal, reproduction attached, was not acknowledged by either the Federal Water Pollution Control Administration's regional office or the office of the Secretary. After two months without word on the status of our standards, and in view of scheduled hearings on water quality standards for intrastate waters of the Cahaba River and Warrior River Basins, I wired the Secretary on October 30, 1967 requesting advice as to his decision. A copy of this telegram, reproduction attached, was sent to you, and we sincerely appreciate your action on our behalf. We received no more than an acknowledgement of our telegram until the Secretary's letter to Governor Wallace dated January 19, 1968. Finally, on February 15, 1968, the Secretary expressed acceptance of the agreements adopted by the Commission and submitted on August 30, 1967.

I am convinced that water quality criteria adopted by Alabama for fish and wildlife and shellfish harvesting waters are realistic and, within limits of present knowledge, represent the most practical and reasonable approach to protection and utilization of the water resources of Alabama in the best interest of the public. The consistency of our criteria with those of states adjoining Alabama, or within the same geographical region, as well as with the criteria of several of the states, some removed from our geographical region including New York and South Dakota, whose standards have been approved by the Secretary support this contention. For your information, I am attaching listings of dissolved oxygen and temperature criteria compiled from standards adopted by states within our region and from states' standards approved by the Secretary. Information on states' standards approved by the Secretary was furnished by the Atlanta Regional Office of the Federal Water Pollution Control Administration on January 30, 1968.

The standard on degradation of waters of existing high quality which the Secretary is now requiring deserves, and should be given, most serious consideration. This standard, or statement as it is sometimes referred to, reads as follows:

"Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. These and other waters of your State will not be lowered in quality unless and until it has been affirmatively demonstrated to the State water pollution control agency and the Department of the Interior that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made of, or presently possible, in such waters. This will require that any industrial, public or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required, as part of the initial project design, to provide the highest and best degree of waste treatment available under existing technology, and, since these are also Federal standards, these waste treatment requirements will be developed cooperatively."

There is a degree of ambiguity in this statement as the first sentence expressly states that waters of existing high quality will not be lowered in quality and the remainder of the statement sets forth how the quality of these waters can be lowered. Nevertheless, I know of no one who would disagree with the philosophy of preserving high quality waters to the maximum extent possible but not to the exclusion of developments necessary and essential to our economic and social welfare which can be permitted without endangering existing uses of these waters. In effect, the Commission is applying such a policy through its requirements of high degrees of treatment for industrial and municipal wastes and is required by Alabama law to recognize, "The existing water conditions of

the state and the right of municipalities, industries and individuals to the reasonable use of such wastewaters so as to promote the continued growth and development of the state, in industry, agriculture, health, recreation and conservation of natural resources . . ." (Act No. 574, Acts of Alabama, 1965).

The disturbing feature of the statement requested by the Secretary is that its adoption would subjugate the state water pollution control agency to the Department of the Interior and confer to that Department the right to decide what is desirable or necessary for economic or social development of the state. *In this sense, the statement is not a degradation policy but is a conferment of authority.* In essence the state water pollution control agency would become nothing more than a "middle-man" or clearing-house between the Federal Government, represented by the Department of the Interior, and the industry, municipality or private individual whose project constitutes a new or increased source of pollution. Not only would the Department of the Interior decide who could discharge wastes and where the discharge could be made but would also have the final word regarding treatment requirements. The wording of the statement leaves no doubt but that its provisions would apply to all interstate waters, not just those of existing high quality. I should remind you that the definition of interstate waters as applied by the Department of Interior is that a stream only needs to cross the boundary between two states to become an interstate waterway over its entire length. As examples, the Coosa, Tallapoosa and Tombigbee Rivers are interstate waterways of Alabama because of their origins in adjoining states although neither of these streams flow from Alabama into an adjoining state. There are several smaller streams in Alabama which also fall in this category and the Alabama River is considered to be an interstate waterway because it is formed by the Coosa and Tallapoosa Rivers, which are interstate waterways by the above definition.

If our interpretations of the powers the Secretary's statement would vest in the Department of the Interior strike you as those of an alarmist, I suggest you ask yourself, or more importantly inquire of the Secretary, if the Department of the Interior intends to: (1) require notification of all proposed developments likely to constitute new or increased sources of pollution of interstate waters; (2) require the submission of proposals to the Federal Water Pollution Control Administration; (3) unilaterally decide as to the adequacy of proposed treatment methods; (4) deny the proposed development in the event the Federal Water Pollution Control Administration is not satisfied with the proposal; and, (5) reserve the right to decide what is necessary for the economic and social development of an area within a state. Finally, the intent of Congress as expressed in Subsection (b) of Section 1, Federal Water Pollution Control Act, as amended, is "to recognize, preserve and protect the primary responsibilities and rights of the states in preventing and controlling water pollution . . ." We conscientiously question the compatibility of the Secretary of the Interior's approach with the intent of Congress. We further question the right of the Secretary to withhold approval of water quality standards from a state which does not include his water quality degradation statement as a part of its standards.

We regret burdening you with our problems but, under the circumstances, apparently have no alternative but to seek your advice and counsel.

Your very truly,

IRA L. MYERS, M.D.,
Chairman, Water Improvement Commission.

COVINGTON & BURLING.
Washington, D.C., April 4, 1968.

Mr. JAMES G. WATT,
Secretary, Natural Resources Committee, Chamber of Commerce of the United States of America, Washington, D.C.

DEAR MR. WATT: You have requested our opinion whether the Secretary of Interior is authorized to determine that State water quality standards are not consistent with the Federal Water Pollution Control Act on the ground that they fail to include (1) an effluent standard relating to the quality of matter permitted to be discharged into interstate waters, or (2) a uniform standard of "nondegradation" as published by the Secretary.

In our view the answer to both parts of this question is No. The Secretary has no authority under the Federal Water Pollution Control Act, as amended by

the Water Quality Act of 1965, to insist that a State include in its water quality standards applicable to interstate waters either an effluent standard—such as an absolute requirement of secondary treatment or its equivalent—or a requirement that waters whose existing quality is better than the established standards will be maintained at their existing high quality.

The express policy of Congress in enacting and amending the Federal Water Pollution Control Act was “to recognize, preserve, and protect the primary responsibilities and rights of the States in preventing and controlling water pollution,” and under the Act it is the initial right and responsibility of each State to adopt, after public hearings, water quality standards applicable to interstate waters within or on its borders. If the Secretary of the Interior determines that a State has adopted water quality criteria and an enforcement plan that are consistent with the Act, such State criteria and plan thereafter become the water quality standards applicable to the interstate waters within the State.

If the Secretary were to disapprove a State's water quality standards for their failure to include either an effluent standard or a nondegradation requirement, and then to promulgate standards applicable to the interstate waters of that State which included these requirements, the State would be entitled to a public hearing before an independent Hearing Board. In our view the Hearing Board would be obliged, as a matter of law, to recommend the elimination of these requirements from the standards promulgated by the Secretary, and the Secretary would be obliged to promulgate revised standards of water quality in accordance with the Hearing Board's recommendation.

This letter sets forth in summary form the basis for these conclusions, which are further elaborated with citation to the legislative history and other relevant authorities, in the accompanying memorandum.

WATER QUALITY STANDARDS MUST RELATE TO THE QUALITY OF THE RECEIVING STREAM

Both the language and the legislative history of the 1965 amendments to the Act makes it clear that Congress intended that water quality standards prescribe the quality of the waters into which effluent is discharged, rather than the quality of the effluent itself, and that such standards must relate to the use and value of the receiving body of water.

Section 10(c) (1) provides for the adoption of “water quality criteria applicable to interstate waters or portions thereof within such state”—clearly a reference to the quality of the receiving waters. Water quality standards must meet the requirements of section 10(c) (3), which provides that in establishing such standards States, the Secretary, and Hearing Boards must take into consideration the use and value of interstate waters for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial and other legitimate uses. This emphasis on the use and value of the receiving waters is fundamental to Congress' insistence upon local standards that relate directly to the quality of these waters.

The sole means for Federal enforcement of water quality standards is set forth in section 10(c) (5), which provides that the “discharge of matter into such interstate waters or portions thereof, *which reduces the quality of such waters* below the water quality standards established under this subsection . . . is subject to abatement . . .” (Emphasis added.) No violation occurs until it can be shown that the quality of the stream has been reduced below the level prescribed in the standard for that stream.

The fact that the Water Quality Act requires that water quality standards apply to the stream rather than to the effluent is the result of the deliberate decision by Congress to reject the approach taken in the initial Administration proposal, which would have authorized both stream standards and controls reading directly on the effluent. On the basis of testimony at the first hearings on the bill, the Senate Committee removed the provision for effluent standards, and it never reappeared through enactment.

Thus, both the statutory language reading explicitly in terms of stream standards, and the Congressional refusal to provide for effluent controls, make it clear that the Secretary of the Interior has no authority to insist on the inclusion of an effluent criteria in State water quality standards as a necessary condition for their approval under the Act. More particularly, the insistence by the Secretary that States include within their water quality criteria a uniform requirement of secondary treatment or its equivalent, without regard to whether such treatment is necessary to achieve compliance with the applicable stream standards, is beyond the Secretary's statutory authority.

In many instances municipalities and companies may have to install secondary treatment or its equivalent if they are to prevent the discharge of matter which reduces the quality of interstate streams below the applicable water quality standards. Failure to install secondary treatment in those instances would result in a violation of both Federal and State law.

But an across-the-board requirement of secondary treatment or its equivalent without regard to the water quality standards applicable to the interstate waters in question is contrary to the Congressional intent and the statutory language. If, after the adoption of water quality standards based on particular uses and values of an interstate stream, a municipality or a company finds that it need not install secondary treatment in order to prevent the discharge of matter that would reduce the quality of the stream below such standards, then there is no basis for requiring such treatment or for taking Federal enforcement action for failure to install it.

THE LACK OF A STATUTORY BASIS FOR A NONDEGRADATION STANDARD

A somewhat different question is raised by the attempt of the Secretary to insist that every State water quality standard include a provision to require that waters whose existing quality is better than established standards as of the date on which such standards become effective will be maintained at their existing high quality. The Secretary has stated that the lowering of the quality of such waters would be permitted only upon a determination by the State water pollution control agency and the Department of Interior that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made of, or presently possible in, such waters. Any new or increased source of pollution to high quality waters would be required to provide "the highest and best degree of waste treatment available under existing technology."

Such a "nondegradation" standard cannot be justified under the provisions of the Act. First, in adopting water quality standards, State authorities must consider, on the evidence presented at public hearings, whether the quality of a particular stream should be improved in order to permit uses not now possible, whether the standards should reflect the existing level of water quality because it satisfactorily accounts for desired uses and values of the stream, or whether standards should be set at levels below the existing quality level in order to accommodate uses and values of importance to the citizens of the State and consistent with purposes of the Act. A nondegradation standard would in effect override any stream standard in this last category, for it would purport to require a water quality level above that specified in the standard. There is no basis in the Act for the Secretary summarily to disregard the decision of the State authorities, and to impose a general requirement unrelated to the hearing evidence.

State standards must of course meet the general requirements of section 10(c) (3) "to protect the public health or welfare, enhance the quality of water and serve the purposes of this Act." Presumably the nondegradation standard is thought to be justified as a means to "enhance the quality of water," but such a narrow reading of this one provision ignores the statutory purpose "to enhance the quality *and value* of our water resources," and in effect nullifies the requirement that the Secretary and the State take into consideration the "use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other legitimate uses." If the hearing record establishes that maximum value and use of a stream can be achieved by water quality standards somewhat below existing levels, then the Secretary cannot arbitrarily refuse to give effect to such standards.

A second difficulty with a general nondegradation standard is that it purports to impose an unenforceable requirement. A Federal action for failure to observe water quality standards can be maintained only upon a showing that discharged matter reduced the quality of the receiving stream below the standards adopted for that stream. No action would lie under the Act for the discharge of matter that merely reduced the stream quality below earlier quality levels, if the stream continued to meet the requirements of the standards themselves.

A third objection to the Secretary's nondegradation standard is that it seeks to displace the initial responsibility of the State to establish water quality standards and to prevent and control water pollution. Under the nondegradation standard, permission to lower the quality of "high quality" waters would be granted only upon a showing of justification made to the State *and* the Secretary. But the Act carefully prescribes the roll of the Secretary in the establishment and enforcement of water quality standards, limiting his authority to the approval of State standards, the promulgation of standards if State standards are not consistent

with the Act, and the initiation of court enforcement proceedings. He has no statutory authority to require prior Federal approval of discharges into a stream or of treatment facilities.

Finally, the requirement that new or increased pollution of "high quality waters" can be permitted only if the installation will have the highest and best degree of waste treatment available under existing technology is an attempt to write effluent standards into the Act, and to impose a degree of treatment that is inconsistent with the enforcement tests of "practicability" and "physical and economic feasibility." A treatment method that is technically available may well be impracticable and totally unfeasible economically. Under any circumstances, a violation of the Act must be predicated on discharge that reduces the quality of the receiving waters below the stream standard, and not on failure to install any particular type or degree of treatment facility.

For these reasons, we conclude that the Secretary has no authority to require that States adopt either effluent or nondegradation standards as a condition of receiving approval of water quality standards under the Federal Water Pollution Control Act.

Very truly yours,

COVINGTON & BURLING
By EDWARD DUNKELBERGER.

[Prepared by Ed Dunkelberger of the Covington & Burling Law Firm as a backup to their April 4 letter to the Chamber of Commerce of the United States]

APRIL 4, 1968.

MEMORANDUM RE WATER QUALITY STANDARDS UNDER THE FEDERAL WATER POLLUTION CONTROL ACT

INTRODUCTION

This memorandum focuses upon the authority of the Secretary of the Interior to require a State to include specific provisions in its water quality standards as a condition of his approval of those standards under the Federal Water Pollution Control Act, as amended by the Water Quality Act of 1965. This and related questions are considered in the light of the legislative history of the 1965 amendments and other relevant authorities.

Section I traces in summary form the legislative developments of 1963-65 which culminated in the passage of the Water Quality Act by the 89th Congress. Section II provides a description of the water quality standards provisions of the Federal Act, as amended in 1965. State-Federal relationships (including procedures for issuing Federal water quality standards), the role of the statutory Hearing Board, and limitations on Federal enforcement authority are considered.

The Secretary's authority to insist on effluent criteria in water quality standards is considered in Section III, with emphasis on both the statutory provisions and their legislative history. It is concluded that in the light of the clear Congressional rejection of authority to set such standards, coupled with the expressed legislative intent of avoiding arbitrary National standards, insistence on any effluent standard by the Secretary has no legal basis. The Secretary's requirement of mandatory secondary treatment in particular is found to be both outside the Secretary's statutory authority and in direct conflict with the Water Quality Act's legislative history.

Section IV outlines the basis for the conclusion that the Secretary has no statutory authority to demand that a so-called nondegradation requirement be included in State water quality standards, or to require Federal approval of waste treatment methods or facilities.

Section V examines the statutory requirements for revision of standards once they are approved and adopted, and Section VI outlines State alternatives when a requirement imposed by the Secretary is deemed arbitrary or without statutory basis. The function of the Hearing Board and the extent of judicial review available during the standard-setting and enforcement processes are considered.

I. THE WATER QUALITY ACT: 1963-1965

The drive for Federal water quality standards legislation, which culminated in the Water Quality Act of 1965, 79 Stat. 903-10 (1965), began two years earlier

with Senator Muskie's introduction of S. 649, a bill to amend the Federal Water Pollution Control Act, 33 U.S.C. §§ 466-466k (1964), in the first session of the 88th Congress. Prior to the adoption of the 1965 amendments the FWPCA authorized Federal court action for the abatement of pollution of interstate waters only under limited circumstances, on an ad hoc basis, and after extensive and time-consuming procedural steps designed to provide every opportunity for voluntary compliance and State enforcement action.

At that time the Secretary could initiate enforcement action upon the request of State officials—or on his own authority in the case of interstate pollution—when he possessed information indicating that any pollution of interstate or navigable water endangered health or welfare. Detailed conference and hearing board procedures were required as initial steps in the enforcement process. If the conference or hearing board machinery proved inadequate to resolve the problem, the Secretary was authorized to bring suit on behalf of the United States to abate such pollution, except that where the cause and effect were both within a single State, a written approval from the governor was a prerequisite to court action. The court was given jurisdiction to enter such judgment and enforcement orders as the public interest and the equities of the case might require, in the light of the practicability and physical and economic feasibility of securing abatement of the pollution.

Dissatisfied with this cumbersome, after-the-fact enforcement procedure, Senator Muskie and other proponents of strong Federal water pollution legislation began in 1963 to urge the enactment of a bill that would authorize the adoption of Federal water quality standards. The bill's stated purpose was "to establish a positive national water pollution policy of keeping waters *as clean as possible* as opposed to the negative policy of attempting to use the full capacity of such waters for waste assimilation." (Emphasis added.) To implement this purpose, the original bill provided for the promulgation of Federal water quality standards applicable to the quality of the receiving water and to the quality of the effluent as well.¹

Senate hearings on S. 649 were held in June 1963. *Hearings on S. 649, S. 737, S. 1118 and S. 1183, Before a Special Subcommittee on Air and Water Pollution of the Senate Comm. on Public Works*, 89th Cong., 1st Sess. (1963). Following these hearings and prior to reporting the Muskie bill, the Senate Committee made significant revisions. In particular, the stated purpose of the bill was amended to read:

"(a) The purpose of this act is to enhance the quality and value of our water resources and to establish a national policy for the prevention, control, and abatement of water pollution."

The vague phrase, "as clean as possible" was eliminated by the Committee and, significantly, it failed to reappear in any later drafts of the water quality legislation.

Of at least equal significance, the water quality standards provision was revised to eliminate authority for the adoption of effluent controls and to provide for Federal standards only in the event that the States failed to develop standards found to be consistent with the Act. On October 16, 1963, the Senate accepted the bill in its amended version, with its new emphasis on the initial responsibility of the States to adopt standards applicable solely to the quality of the receiving interstate waters.

House hearings were held in December 1963 and February 1964, spanning a total of twelve days. Testimony before the House Committee dealt primarily with the extent of Federal encroachment in the standard-setting procedure and the proposed reorganization of the Federal administrative machinery for water pollution control. *Hearings on S. 649, H.R. 3166, H.R. 4571, and H.R. 6844 Before the House Comm. on Public Works*, 88th Cong., 1st and 2d Sess. (1963-64).

¹ Section 4 provided:

"In order to aid in preventing, controlling and abating pollution of interstate or navigable waters in or adjacent to any State or States which will or is likely to endanger the health or welfare of any persons, and to protect industries dependent on clean water such as the commercial shellfish and fishing industries, the Secretary shall, after reasonable notice and public hearing and in consultation with the Secretary of the Interior and with other affected Federal, State and local interests, issue regulations setting forth (a) standards of quality to be applicable to such interstate or navigable waters, and (b) the type, volume or strength of matter permitted to be discharged directly into interstate or navigable waters or reaching such waters after discharge into a tributary of such waters. Such standards of quality and of matter discharged shall be based on present and future uses of interstate or navigable waters for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, and agricultural, industrial and other legitimate uses."

The Public Works Committee did not report the bill until September 1964. *See* H.R. Rep. No. 1885, 88th Cong., 2d Sess. (1964). Although the House accepted the Senate's revision of the Act's stated purpose, it rejected the mandatory water quality standards provision. As the House Report states: "[T]he committee has modified the provision of section 5 of the bill as passed by the Senate to provide that the Secretary, instead of promulgating standards, may recommend standards . . ." for adoption by the States. *Id.* at 6. Final House action was not forthcoming during the 88th Congress, and S. 649 died with adjournment.

Senator Muskie renewed his fight in the 89th Congress. The new Muskie bill, S. 4, retained the purpose and water quality standards provisions of the Senate's amended version of S. 649 in the prior Congress. Because of the lengthy hearings held on S. 649, Senate hearings on S. 4 were limited to a single day of testimony. And with only minor amendments, the Senate Public Works Committee reported S. 4 on January 27, 1965.

Following rejection of an amendment by Senator Tower, which would have given the Secretary the authority to issue *recommended*—rather than mandatory—water quality standards, the Senate passed the Water Quality Act of 1965 (S. 4) on January 28, 1965.

Three days of House hearings were held in February 1965. *See Hearings on H.R. 3988 and S. 4 Before the House Comm. on Public Works*, 89th Cong., 1st Sess. (1965). Again the House Committee rewrote the bill prior to reporting it. Although the stated purpose of the bill did not change, the water quality standards provision in the Senate-passed version was eliminated. In its place, a severely limited standard-setting procedure, tied to the authorization of Federal funds, was inserted. *See* H.R. Rep. No. 215, 89th Cong., 1st Sess. 3 (1965).

The house version of S. 4 was debated and passed by the House on April 28, 1965. 111 Cong. Rec. 8652-90 (1965). Senate disagreement with the House amendments sent the bill to conference. As it emerged from the Conference Committee on September 17, 1965 (*see* H.R. Rep. No. 1022, 89th Cong., 1st Sess. (1965)), the Water Quality Act of 1965 contained a water quality standards provision more like the Senate version of S. 4 than its House counterpart. The compromise standards provision provided for the adoption of Federal standards only in the event that the State standards were found by the Secretary not to be consistent with the Act. Following final Congressional approval on September 21, 1965, the Water Quality Act was signed into law by the President on October 2, 1965.

II. THE WATER QUALITY STANDARDS PROVISIONS OF THE FEDERAL WATER POLLUTION CONTROL ACT

The water quality standards provisions of the Water Quality Act of 1965 were enacted as section 10(c) of the Federal Water Pollution Control Act. Initially the governor or the State water pollution control agency must file a letter of intent indicating that the State will hold public hearings and thereafter adopt water quality criteria applicable to interstate waters within the State, as well as a plan for the implementation and enforcement of the criteria.

The State's water quality criteria and implementation plan, adopted after public hearings, are submitted to the Secretary, who must determine whether such State criteria and plan are consistent with section 10(c)(3) of the Federal Act. That section provides that the standards adopted under the Act must "protect the public health or welfare, enhance the quality of water and serve the purposes of this Act," and that in establishing such standards, the use and value of the stream in question for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial and other legitimate uses must be considered.

If the Secretary approves the State criteria and plan, they become the water quality standards applicable to the interstate waters in question under both State and Federal law.

If the Secretary fails to approve the State standards as submitted (or if the State does not follow the established submission procedure), the Secretary may notify all interested parties and convene a conference of representatives of appropriate Federal departments and agencies, interstate agencies, States, municipalities and industries involve. Having complied with the conference procedure, the Secretary may prepare regulations setting forth the standards of water quality to be applicable to the interstate waters in question. The State is then given a six-month period within which to adopt water quality standards

consistent with section 10(c) (3), or to petition for a public hearing. If the State neither revises its standards nor requests a hearing before the six-month period has elapsed, the Secretary must promulgate the standards for the waters in question.

At any time prior to thirty days after the Secretary has promulgated his standards, the governor of an affected State may petition the Secretary for a hearing, and the Secretary must call a public hearing to be held in or near one of the places where the water quality standards will take effect. The hearing is before a Hearing Board of five or more persons appointed by the Secretary. Each State affected by the standards must be given an opportunity to select one member of the Board, and the Department of Commerce and other affected Federal agencies are given an opportunity to select one Board member each. Not less than a majority of the Board must be made up of persons outside the Interior Department. Notice of the hearing must be published in the Federal Register and given to the State water pollution control agencies concerned at least thirty days prior to the day of the hearing.

Based upon the evidence presented at the hearing, the Board will make findings and approve or modify the standards promulgated by the Secretary. If the Hearing Board approves the standards as submitted, they will take effect upon receipt by the Secretary of the Hearing Board's recommendations. If the Hearing Board recommends a modification in the standards, the Secretary must promulgate revised regulations setting forth water quality standards in accordance with the Board's recommendation. These revised standards will then become effective upon promulgation by the Secretary.

Where the Secretary seeks to amend or revise existing standards, the full procedural requirements of section 10(c) apply, except that the Secretary may initiate revisions through the conference procedure in section 10(c) (2) without giving the State an opportunity to revise its standards on its own. As a practical matter, the Secretary will probably give States an opportunity to act first and to adopt recommended revisions after a public hearing. Under any circumstances, the Hearing Board procedure will be fully available to States if they question revisions promulgated by the Secretary.

Federal enforcement under the Act is limited to those situations where the discharge of matter has caused a reduction of the water quality of a stream to a level below the stream standards (§ 10(c) (5)), or where there is pollution of waters which is endangering public health or welfare (10(g)). In the latter case, section 10(d), (e), (f) and (g) provides an extended conference and hearing procedure that must be followed before an enforcement suit may be brought, but in the case of an alleged violation of a stream standard, no conference or hearing prior to judicial determination is contemplated under the Act.

Water quality standards violations cognizable under section 10(c) (5) are subject to abatement in accordance with the provisions of 10(g) (1) and (2) of the Act. However, at least 160 days prior to the initiation of an abatement action, the Secretary must notify the violators and other interested parties of the standards' violations. Section 10(g) (1) provides that where water pollution originating in one State endangers the health or welfare of persons in a second State, the Secretary may request the Attorney General to bring suit on behalf of the United States to secure abatement. Where pollution and harm are confined to a single State, section 10(g) (2) provides for Federal abatement action only if the written consent of the State governor is obtained by the Secretary.

This provision in 10(c) (5) that violations of water quality standards are subject to abatement in accordance with 10(g) (1) or (2) raises a question that apparently was not considered during the course of Congressional enactment. Section 10(g) provides for abatement of pollution only if it "is endangering the health or welfare of persons." Section 10(c), however, contemplates judicial action to abate pollution based on violations of the water quality standards themselves. It is not clear whether Congress intended that even in an action for violation of a standard it must be shown that the pollution is endangering health or welfare. Conceivably the courts might hold that a violation of the water quality standards is equivalent to an endangerment of health or welfare. The Act makes it clear, however, that protection of the public health or welfare is just one of several bases for adoption of water quality standards, and it may well prove difficult to establish that violation of a standard endangers health or welfare in every case.

In any suit brought on behalf of the United States under the provisions of section 10(c), the court must receive in evidence the transcript of the proceedings (if any were held) of the conference and Hearing Board convened during the standard-setting process, the recommendations made by the conference and Hearing Board (if any), and the recommendations and standards promulgated by the Secretary. In reviewing the standards, the court must give consideration "to the practicability and to the physical and economic feasibility of complying with such standards," and the court may enter such judgment and issue such order enforcing such judgment as the public interest and the equities of the case may require. Thus, the court is given a broad jurisdictional grant to determine whether the standards, as established, are consistent with section 10(c)(3) and whether compliance with such standards is a reasonable requirement under the circumstances of the case.

III. THE ABSENCE OF STATUTORY AUTHORITY FOR NATIONAL EFFLUENT STANDARDS

A review of the statutory provisions and the legislative history of the Act clearly discloses the Congressional policy of maintaining the primary State responsibility for the promulgation of water quality standards applicable to the receiving stream. This is apparent both from the elimination of any statutory authority for Nationwide effluent control and from the provisions of the Act aimed at preventing adoption of arbitrary National standards.

A. The Statutory Scheme Envisions Standards Adapted to Local Conditions

It is clear that arbitrary National standards are not contemplated under the Act. Section 1 states:

"(b) . . . it is hereby declared to be the policy of Congress to recognize, preserve, and protect the primary responsibilities and rights of the States in preventing and controlling water pollution, to support and aid technical research relating to the prevention and control of water pollution, and to provide Federal technical services and financial aid to State and interstate agencies and to municipalities in connection with the prevention and control of water pollution (c) Nothing in this Act shall be construed as impairing or in any manner affecting any right or jurisdiction of the states with respect to the waters (including boundary waters) of such states."

Furthermore, sections 10(c)(1) itself makes it clear that Congress desired the States, in the first instance, to establish the water quality criteria applicable to interstate waters. And in adopting the criteria, section 10(c)(3) directs State authorities to consider the actual use and value of specific waters, thus indicating the direct relationship between standards and individual stream "uses" and "values."

A reading of the legislative history of the 1965 Act brings sharply into focus the fact that Congress did not contemplate the setting of arbitrary, uniform National standards of water quality. Rather, it clearly rejected such a concept. Indeed, during the three-year period in which hearings were held, Administration spokesmen continually rejected any notion of setting uniform National standards.

Testifying before the Senate Public Works Subcommittee in 1963, Secretary of Health, Education, and Welfare Celebrezze took the position that flexibility in setting standards was essential, both procedurally and substantively. He noted that, as then written, the bill provided for the mandatory setting of water quality standards by the Secretary, but that the Department preferred such authority to be granted on a permissive basis instead. "We believe we can protect health and welfare more effectively and economically on a case-by-case basis than by involving the Government in an attempt to establish standards for all interstate and navigable waters at once." *Hearings on S. 649, S. 737, S. 1118 and S. 1183 Before a Special Subcommittee on Air & Water Pollution of the Senate Committee on Public Works*, 88th Cong., 1st Sess. 460 (1963).

In a similar vein was the Secretary's answer to the following question by Senator Miller:

"Do you foresee or do you think we ought to have flexibility so that varying standards can be provided in regions, for example? Is there some kind of guideline that Congress should establish within which limits an administrative agency should work?"

The Secretary replied:

"I believe you have to have a degree of flexibility because standards will vary. You will need extremely high standards, for example, in shellfish areas.

"The standards that you would apply, for example, to a small community on top of a mountain on a stream running through would probably be different than the standards that you would apply in areas where 8 million people are jammed together.

"You have to have a degree of flexibility. You have to take all those factors into consideration.

"We have some standards now. We have standards on shellfish, for example.

"But I don't think that you can set standards for the total United States. You have to draw standards in the highly industrialized areas of this country which would be different than standards, as I say, in the lobster beds, shellfish beds, trout streams, or affecting the fishing industry—you would have to have different standards.

"So you have to maintain a degree of flexibility." *Id.* at 470.

The rejection of arbitrary National standards was again made clear during the House consideration of S. 649, as passed by the Senate. During the hearings, Congressman Cramer (R.-Fla.) had occasion to question Assistant Secretary Quigley on this very point:

Congressman CRAMER. "Setting standards before the fact is presently the function of the States and this proposal is to give the Federal government the power to take over present State authority."

Secretary QUIGLEY. "Not at all. S. 649 specifically provides that the Secretary is not supposed to exercise his authority under this section if the States already have adequate standards. So, if the States elected to go the standards route and did a proper job, the Secretary of HEW would never have to do a thing under the section."

Congressman CRAMER. "The Secretary decides whether the States have adequate standards and whether he should exercise that power."

Secretary QUIGLEY. "Right. But this will not be done arbitrarily. He will not issue a fiat and that is it, because again in S. 649 it is specifically provided that if the standards are set and they are not complied with and this leads to an enforcement case, not only do you have all the routine in the enforcement procedure for resolving the question, ultimately, if you have to go to court, S. 649, directs the court, the judge, to second-guess the Secretary as to whether the standards he set are correct."

Congressman CRAMER. "So the Secretary will set the standards nationwide."

Secretary QUIGLEY. "That is not true, Mr. Cramer. That is not the case; that is not provided in S. 649. There is nothing that says he will set the standards nationwide."

Congressman CRAMER. "He will set standards applicable on a national basis."

Secretary QUIGLEY. "No."

Congressman CRAMER. "Either by regional application or otherwise."

Secretary QUIGLEY. "He will set standards, but not nationwide."

Congressman CRAMER. "On a regional basis?"

Secretary QUIGLEY. "On a regional basis, a river basis, or on a section of a river basis." *Hearings on S. 649, H.R. 3166, H.R. 4571 and H.R. 6844 Before the House Committee on Public Works, 80th Cong., 1st and 2d Sess. 271-72 (1963-64).*

The House Committee also heard testimony from an Interior Department representative, Eugene D. Eaton, a Resources Program Specialist in the Office of the Secretary of the Interior, engaged in a general discussion of the standard-setting problem during which he noted:

"Theoretically water quality standards might be set so that there would not be any discharge of any amount whatsoever of the offending substances. Desirable as this might be from the point of view of water purity, it is hardly a realistic approach in our highly urbanized and industrialized society.

"To be practical, in many cases, if may be necessary to formulate the standards in relation to the factors just mentioned—that is, such things as the rate and volume of flow and the chemical and physical characteristics of the receiving waters. In practice this could mean that often offending materials might have to be rigorously withheld during periods of low river flow, and perhaps they would be impounded or otherwise handled until river stages are high enough to provide safe dilution, or this could mean the allocation of discharge of offending material between subsurface and surface streams." *Id.* at 718.

Thus, it may be seen that, even at this early stage in the development of Federal water quality legislation, the Interior Department apparently realized that the only practical approach to water quality standards was one based on the

have to be rigorously withheld during periods of low river flow, and perhaps they relation of standards to local stream conditions and uses rather than National effluent controls. And in the House Report on S. 649, the Committee notes that the House changes in S. 649 were made to "assure the States, the various water pollution control organizations and private industry that the Federal Government does not desire to have an arbitrary establishment of such standards." H.R. Rep. No. 1885, 80th Cong., 2d Sess. (1964).

During the Senate consideration of S. 4 in 1965, Senator Muskie turned his attention to the question of arbitrary Federal standards:

"I might point out that tyranny exists only where there is no appeal. I would think that if I were the Secretary of HEW, and I were considering implementing the standards section, which would be a new kind of authority, I would look at that section giving the courts power to review that very carefully before I established any arbitrary standards.

"When the Congress says to the Secretary that his standard has to be practicable, and he knows that that will be the test that will be ultimately applied, and he knows there are industries with financial resources to press this in the courts, some of which are represented here today, he knows that he has to meet that test, he cannot be arbitrary, and that he has to be practical." *Hearings on S. 4 Before a Special Subcommittee on Air & Water Pollution of the Senate Committee on Public Works*, 89th Cong., 1st Sess. 85 (1965).

Summing up the effect of the water quality standards provision in S. 4, the Senate Committee notes in its report (*see* S. Rep. No. 10, 89th Cong., 1st Sess. 10 (1965)):

"The authority given the Secretary is not arbitrary. He is constrained from arbitrary action by the public hearing and consultation requirements of the standard section and by the knowledge that, if he promulgates standards, compliance with such standards must ultimately meet the test of 'practicability' in the courts, as provided in section 5(d) of the bill, should violation of such standards trigger an enforcement action. It is clear, also, that the enforcement conference and the hearing board must, in the light of the authority given the court, consider the 'practicability' of the compliance with the standards."

In the same vein was Senator Boggs' comment during the Senate debates:

"[T]he members of the Committee and the staff have worked diligently in preparing language to make it abundantly clear that the States, interstate agencies, and industries will be fully protected from any arbitrary action by a Secretary of Health, Education and Welfare regarding established standards." 111 Cong. Rec. 1506 (1965).

Assistant Secretary Quigley made a final attempt to clarify the Administration's position in regard to uniform National standards and arbitrary action by the Secretary in his testimony before the House Public Works Committee:

"We do not intend to set any national standards. This point was made on the record last year; it was made in the other body. Let me make it again. There is no intent, no purpose in the standard section, as I understand it, to set national standards." *Hearings on H.R. 3988 and S. 4 Before the House Comm. on Public Works*, 89th Cong., 1st Sess. 59 (1965).

During the debate on S. 4, many Congressmen expressed the view that the primary responsibility for establishing water quality standards remained with the States and that uniform National standards arbitrarily set by the Secretary were not contemplated. *See* 111 Cong. Rec. 8635 (1965) (remarks of Congressman Brown, R.-Ohio), 8657 (remarks of Congressman Cramer, R.-Fla.), 8661 (remarks of Congressman Randell, D.-Mo.), 8665 (remarks of Congressman Harsha, R.-Ohio), and 8669 (remarks of Congressman Cleveland, R.-N.H.).

Testimony by FWPCA Commissioner Quigley during the 1967 hearings on water pollution is also of interest, although post-enactment discussion before a Congressional Committee cannot, of course, be considered to be a part of the legislative history. The following colloquy took place between Commissioner Quigley and Congressman Harsha (R.-Ohio):

Congressman HARSHA. "... [n]ow, during the past year or so your office has issued several sets of guidelines and criteria and standards and so forth to be used in developing water quality criteria and in reviewing the States' standards. Is it your intention that the review of State standards be so demanding upon the States in order to have their standards accepted that they must establish the very same criteria that you wish to establish as Federal standards for water pollution control?"

Commissioner QUIGLEY. "The answer is 'No,' but I think I will let Dr. Hirsch, who is responsible for it, comment in detail."

Dr. HIRSCH. "Generally, the guidelines that we issue have been of a broad nature rather than being very specific."

"The areas, I think, that we have been most specific with in working with the States have been areas of technical, scientific fact rather than policy."

"In other words, if a body of water is desired for a certain type of fishery, we might be specific in working with the State to indicate what level of oxygen or what temperature level would be necessary to support that fishery. That is a matter of scientific information and not a matter of policy decision."

"In the policy areas, however, our guidelines, we think, have been rather general." *Hearings on Water Pollution Before the House Comm. on Public Works*, 90th Cong., 1st Sess. 107-08 (1967).

Later in the colloquy, another interesting exchange took place:

Congressman HARSHA. "I just have one other question, Mr. Quigley, or any member of your staff. It is my impression that Congress defines 'pollution' not as a discharge per se, but rather as a quality which impairs water use."

"Now, am I accurate in that assumption?"

Commissioner QUIGLEY. "I would certainly accept that, without checking the act. That is certainly my working definition of it."

Congressman HARSHA. "All right. Now, does the Federal Water Control Administration believe that the discharge must be eliminated before clean water can be obtained?"

Commissioner QUIGLEY. "As a theoretical question, I do not think the answer to that could ever be yes. I think as a practical matter, in many instances, this is the only way you are going to eliminate the pollution. But I could recognize a situation where because of the flow, high quality of it, and lack of other discharges, that you would not have to." *Id.* at 110-11.

Thus, it may be seen that throughout Congressional consideration of the legislation and as recently as a year ago, the Federal authorities directly concerned with enforcement of the standards provision of the Water Quality Act were speaking in terms of broad general guidelines, as opposed to arbitrary Federal standards. This view was widely and consistently reflected in Congress and in the language of the Act.

B. The Rejection of Federal Effluent Control Authority

The original version of S. 649, as introduced, provided for both effluent and stream quality controls.¹ As Secretary of Health, Education and Welfare Celebrezze noted in a letter to Chairman McNamara of the Senate Committee on Public Works:

"This subsection [section 9(i) of the Federal Water Pollution Control Act as amended by section 4 of the Muskie bill] would direct the Secretary to issue regulations setting forth standards of quality and the type, volume or strength of matter permitted to be discharged in interstate or navigable waters." *Hearings on S. 649, S. 737, S. 1118 and S. 1183 Before a Special Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 88th Cong., 1st Sess. 6 (1963).

Similarly, Secretary Udall noted that:

"This new subsection requires the Secretary of Health, Education and Welfare to issue regulations . . . setting forth (1) standards of quality applicable to interstate and navigable waters, and (2) the type, volume, or strength of matter permitted to be discharged directly into interstate or navigable waters or reaching such waters after discharge into a tributary of such waters." *Id.* at 9.

A number of witnesses strongly objected to Federal authority to set effluent standards, as an intrusion into an area traditionally reserved for the States. Sam Thompson, testifying on behalf of the Council of State Governments, noted that:

"[T]he portions of S. 649 which would give the Federal Government power to set binding effluent standards, is the most crucial part of this legislation." *Id.* at 298.

Mr. Thompson further noted that:

"If the Federal Government is to have the power to set effluent standards, there will be nothing which State pollution control agencies can do which the Federal Government cannot also do." *Id.*

¹ See the text of the standards provision at this stage, as quoted in the footnote on page 5, *supra*.

In a similar vein, Dr. Natale Colosi, Chairman of the Interstate Sanitation Commission, testified that:

"S. 649 is of great concern to the Interstate Sanitation Commission, primarily because the bill proposes to give a Federal agency power to set effluent standards. . . .

"If some agency of the Federal Government is now to have authority to set an effluent standard, great confusion will ensue. . . .

"Under existing Federal law, Congress has declared the responsibilities and rights of the States in pollution control shall be primary. Where single States acting alone may not be in a position to cope adequately with the problems of an area, the act directs the encouragement of interstate compacts for pollution control. We trust that the sponsors and supporters of S. 649 continue to seek the buttressing and encouragement of State and interstate efforts. The bill leaves these provisions of present law intact. However, the effluent standard provision would vitiate this declared policy of Congress." *Id.* at 581-82.

When the Senate Committee reported S. 649, the provision granting authority to set effluent standards was noticeably absent. The standards provision reported out by the Committee contemplated the setting of water quality standards for the receiving waters alone.

During the two remaining years prior to passage, the water quality legislation was the subject of extensive hearings and Congressional debate. However, with the exception of a passing reference, the effluent standards provision failed to occupy the attention of Congress and never reappeared in the legislation. Its rejection is summed up by John E. Kinney, a sanitary engineering consultant, who testified on S. 4 before the House Committee:

"The original Senate bill a year ago had a provision to establish water quality and waste discharge. The committee was under the impression that standards on discharges had to be provided before standards on stream quality could be established. When they learned it unnecessary—you can set standards on a stream which has no discharges to it—the committee ruled out standards on discharges." *Hearings on H.R. 3988 and S. 4 Before the House Comm. on Public Works*, 89th Cong. 1st Sess. 323 (1965).

C. The Secondary Treatment Requirement—A National Effluent Standard

In the face of the clear rejection of effluent control by Congress and the consistent Congressional and Administration declarations that arbitrary National standards were not to be set under the Act, the Department of the Interior has established guidelines for water quality standards for interstate waters which represent an attempt to achieve National effluent controls by administrative fiat. See *Hearings on Water Pollution Before House Comm. on Public Works*, 90th Cong., 1st Sess. 86-88 (1967). The following "Policy Guidelines" are included:

"3. *Water quality criteria should be applied to the stream or other receiving water or portions thereof.* . . . In the absence of appropriate numerical values or biological parameters, criteria should consist of verbal descriptions in sufficient detail as to show clearly the quality of water intended (*e.g.*, 'substantially free from oil')."

"8. No standard will be approved which allows any waste amenable to treatment or control to be discharged into any interstate water without treatment or control regardless of the water quality criteria and water use or uses adopted. Further, no standard will be approved which does not require all wastes, prior to discharge into any interstate water, to receive the *best practicable treatment or control* unless it can be demonstrated that a lesser degree of treatment or control will provide for water quality and enhancement commensurate with proposed present and future water uses." (Emphasis added.)

It seems apparent that the Interior Department first agreed in Guideline 3 to follow the Congressional command of setting stream standards, and then decided in Guideline 8 to attempt to improve effluent standards as well. On the basis of Guideline 8, the Department has attempted to impose a uniform requirement of secondary treatment or the equivalent on all State water quality standards. See Statement of Secretary of Interior Udall Before the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works, 90th Cong., 2d Sess. 3 (March 27, 1968). Such a requirement has no basis in either the statute itself or the Act's extensive legislative history.

Secretary Udall in his 1968 Senate testimony (see *Hearings on Water Pollution Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 90th Cong., 2d Sess. (March 27, 1968)) indicated that Federal

authorities have had the general objective of mandatory secondary treatment for five years and that such a requirement is being imposed on all States. If this was in fact the case, it is surprising that this view was not expressed to Congress by Administration officials, and that no attempt was made to reinstate authority for such an effluent control in the bill. Such a requirement violates both the letter and the spirit of the Federal Act in at least three particulars.

First, it is clear that the Secretary has attempted to establish a rigid National standard in direct conflict with the express legislative intent and greatly at variance with statements of Administration witnesses during the course of the hearings on the Water Quality Act. If any single theme can be drawn from the legislative history of the Water Quality Act, it is that arbitrary, rigid National standards were not acceptable to Congress.

Secondly, the requirement of secondary treatment, whether viewed as a "kind of treatment" or as a "degree of waste removal" (as Secretary Udall has suggested in his recent testimony), can exist only as a control on the quality of the discharge, rather than the quality of the receiving water. It is thus an effluent standard of the type rejected by Congress at an early stage in the history of the water quality legislation. As such, it is clearly beyond the Secretary's authority under the Act.

Finally, since the Secretary's approval can be conditioned only on State compliance with the requirements of section 10(c) (3), any attempt to impose greater requirements on the States is a usurpation of their primary authority in the field of water pollution control.

IV. THE ABSENCE OF STATUTORY AUTHORITY FOR A NONDEGRADATION STANDARD

Recently, the Secretary has sought to impose an additional uniform requirement as a condition on the approval of State water quality standards. Three Federal Guidelines are relevant—numbers 1 and 5, as well as the aforementioned Guideline 8:

"1. Water quality standards should be designed to 'enhance the quality of water.' If it is impossible to provide for prompt improvement in water quality at the time initial standards are set, the standards should be designed to prevent any increase in pollution. *In no case will standards providing for less than existing water quality be acceptable.*

"5. Water quality criteria should be accompanied by a description of present water quality and uses, together with uses expected in the future and the water quality required to make those uses possible. The water quality standards proposed by a State should provide for:

(a) Potential and future water uses as well as the present intended use and uses;

(b) The upgrading and enhancement of water quality and the use or uses of streams or portions thereof that are presently affected by pollution;

(c) The maintenance and protection of quality and use or uses of water now of a high quality or of a quality suitable for present and potential future uses." *Hearings on Water Pollution Before the House Comm. on Public Works, 90th Cong., 1st Sess. 87 (1967). (Emphasis added.)*

The Interior Department has used these guidelines as the basis for the "nondegradation" standard, which it seeks to superimpose upon all State water quality criteria. On February 8, 1968, Secretary Udall announced that, in the future, every State will be required to adopt a nondegradation provision substantially in accordance with the following language:

"Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. These and other waters of a State will not be lowered in quality unless and until it has been affirmatively demonstrated to the State water pollution control agency and the Department of the Interior that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made of, or presently possible in, such waters. This will require that any industrial, public or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required, as part of the initial project design, to provide the highest and best degree of waste treatment available under existing technology, and, since these are also Federal standards, these waste treatment requirements will be developed cooperatively." Press Release, Office of the Secretary, United States Department of the Interior, Feb. 8, 1968.

In his 1968 Senate testimony, Secretary Udall indicated that in his opinion imposition of a nondegradation standard comes within the intent of the 1965 Act. And Senator Muskie stated that he and the Secretary had agreed on this principle before the "Guidelines" were put together. *See Hearings Before a Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 2d Sess. (March 27, 1968)* (testimony of Secretary of Interior Udall). But if Secretary Udall and Senator Muskie had agreed upon this interpretation of the Act prior to establishing the guidelines, they failed to take a critical look at the Act itself.

Section 10(c) (3) directs the Secretary, the Hearing Board, or the appropriate State authority to take into consideration the use and value of a given body of water when establishing the water quality standards. Such uses include public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial and other legitimate uses.

This clear statutory direction is further reinforced by the Act's legislative history. The Senate Committee made clear the direct relationship between standards and uses in 1963 and reaffirmed its position two years later:

"The Committee intends that water quality standards should be applied on the basis of the water quality requirements of present and future uses of the stream or sections of the stream, after due consideration of all the factors and variables involved. S. Rep. No. 556, 88th Cong., 1st Sess. 9 (1963); S. Rep. No. 10, 89th Cong., 1st Sess. 10 (1965).

See also "Additional Views in Support of S. 4," a statement by the Republican membership of the House Public Works Committee:

"Standards of water quality are concededly badly needed, but should be established by the State and local agencies, which are most familiar with all aspects of the matter in a given locality, including the economic impact of establishing and enforcing stringent standards of water quality. Authorizing the Secretary of Health, Education and Welfare to promulgate and enforce such standards to the exclusion of the States would obviously discourage the States and local agencies from developing their own plans and standards for water quality and purity. And it would place in the hands of a single Federal official the power to establish zoning measures over—to control the use of—land within watershed areas in all parts of the United States. Such power over local affairs has never been vested in a Federal official, and we are opposed to doing it now." H.R. Rep. No. 215, 89th Cong., 1st Sess. 10 (1965).

The nondegradation standard is clearly the sort of arbitrary National standard that is inconsistent with the statutory scheme of State adopted stream standards based on stream value and use. This inconsistency is apparent from the language of Secretary Udall's press release of February 8, 1968. He states, "I have concluded that in order to be consistent with the basic policy and objective of the Water Quality Act, a provision in all State standards substantially in accordance with the following is required . . ." What follows is the nondegradation requirement. Additionally, the Secretary notes, "Accordingly, I have decided that no standards will be approved from here on that do not contain a satisfactory antidegradation provision." Plainly the Secretary has issued an inflexible, arbitrary order requiring the superimposition of a uniform National standard over all State water quality criteria. Such a requirement is inconsistent with the Secretary's recent claim before the Senate Committee:

"Through all the standards setting process runs the important consideration of reasonableness. We do not seek clean water for its own sake, but for man's benefit. On balance, our clean water efforts must therefore be reasonable." Statement of Secretary Udall Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 1st Sess. 5 (March 27, 1968).

And clearly, the flat nondegradation requirement goes beyond even Senator Muskie's pre-passage view of the need, where practicable, to maintain the present quality of high quality waters:

"Let me say this, in addition: You see, the present law states that the Secretary should act for the Federal Government whenever there is pollution 'which endangers the health and welfare of any persons.'

"Now with respect to streams now contaminated we are talking ex post facto situations. Under S. 4 our objective would be to improve water quality to the point where the health and welfare of persons are more broadly and effectively served.

"With respect to uncontaminated streams, our objective is to preserve insofar as we can the current quality of those streams in the light of all use require-

ments that can be anticipated legitimately in the public interest." *Hearings on S. 4 Before a Special Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 89th Cong., 1st Sess. 82 (1965). (Emphasis supplied.)

It is apparent that Senator Muskie did not envision a uniform nondegradation requirement unrelated to stream uses based on local needs. Rather, his statement reflects a more practical approach of maintaining present water quality in the light of all legitimate use requirements.

Furthermore, the nondegradation standard would be unenforceable under section 10(c)(5) of the Federal Act. That section provides for the abatement of any discharge which reduces water quality below levels established in accordance with section 10(c). No provision exists for abating any discharge which reduces present water quality unless such discharge also reduces the water quality below the use and value related standard set in accordance with section 10(c)(3).

Of equal significance is the fact that the nondegradation requirement serves to eliminate the primary authority of the States in the field of water pollution control. This too is clearly contrary to the intent of the Federal Act, which directs the States to assume the primary position in regard to standard-setting, pollution control, and pollution abatement:

"[I]t is hereby declared to be the policy of Congress to recognize, preserve, and protect the primary responsibilities and rights of the States in preventing and controlling water pollution . . ." Federal Water Pollution Control Act § 1(b).

"Consistent with the policy declaration of this Act, State and interstate action to abate pollution of interstate or navigable waters shall be encouraged and shall not, except as otherwise provided by or pursuant to court order under subsection (h), be displaced by Federal enforcement action." Federal Water Pollution Control Act § 10(b).

Finally, the Secretary's nondegradation requirement would in effect displace State primacy in establishing water quality standards and in preventing and controlling pollution contrary to the clear command of section 10(c)(1). Permission to lower the quality of "high quality" waters would require a determination of justification by both the State involved and the Secretary. But under the Act the Secretary lacks the authority to require Federal preclearance of treatment facilities or of particular discharges into a stream. Further, the additional requirement that new or increased pollution of "high quality" waters be permitted only if the new installation provides "the highest and best degree of waste treatment available under existing technology" is an attempt to impose effluent standards without statutory basis and to require a degree of treatment that is inconsistent with the enforcement criteria of "practicability" and "physical and economic feasibility." In any event, failure to install a particular type or degree of treatment facility is not a violation of the Act unless such failure also results in a reduction of stream quality below established levels.

V. REVISION OF APPROVED STANDARDS

Although an FWPCA release (March 18, 1968) indicates that 28 States' standards have received "approval," and Secretary Udall has indicated that his Department hopes to "approve" all State standards by June 1968 (*see Hearing Before a Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 90th Cong., 2d Sess. (March 27, 1968) (testimony of Secretary Udall)), he has also stated:

"We intend to go back to the States whose standards were approved last summer, based on the new policy and on the experience which we have gained to date, and, where changes are needed in the standards, we will request them.

"We have not yet formally asked the ten States whose standards were approved last summer to adopt the anti-degradation language, except the State of Idaho. I have publicly indicated that this will be expected." Statement of Secretary of Interior Udall Before Subcommittee on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 2d Sess. 9 (March 27, 1968).

In this context, the statutory procedures for revision of approved standards become particularly relevant. Once approved under section 10(c)(1), State water quality standards become the applicable Federal standards under the Federal Act. As such, they may be revised only in accordance with established procedures. In particular, section 6(b) of the Model State Act ("Suggested State

Water Pollution Control Act, Revised") issued by the Department of the Interior, states:

"Prior to establishing, amending, or repealing standards of water quality the Board shall, after due notice, conduct public hearings thereon. Notice of public hearing shall specify the waters for which standards are sought to be adopted, amended or repealed and the time, date and place of such hearing."

Thus, any attempt to adopt a revised standard on the State level without a full public hearing would result in standards which are invalid under the "Model Act" and would be unenforceable in any State having a similar statutory requirement.

In addition, section 10(c) (1) of the Federal Act requires the States to hold public hearings prior to adoption of water quality criteria. It is logical that section 10(c) (1) also be read to require public hearings prior to the revision of existing water quality standards. Such was the intent of the Senate Committee:

"Accordingly, the bill provides authority for the Secretary to establish standards of water quality to be applicable to interstate waters or portions thereof. The standards are to be formulated in accordance with accepted administrative procedures calling for notice and public hearing and consultation with affected Federal, State, interstate and local interests and are to be such as to protect public health or welfare and to enhance the quality and value of interstate waters. Standards would also be subject to revision either by the Secretary on his own or when petitioned to do so by the Governor of any affected State. The same procedure for hearing and consultation will be followed in revisions as when standards were being formulated." S. Rep. No. 10, 89th Cong., 1st Sess. 9 (1965).

In any event, sections 10(c) (2) and (4) establish detailed requirements for the revision of existing standards. Section 10(c) (2) states that when the Secretary desires to revise an existing standard, he must call a conference in the same manner as that required for the original adoption of Federal standards. Furthermore, the Secretary must comply with the full Hearing Board procedures of section 10(c) (4) before any revised standard can be adopted over State opposition.

Thus, when the Secretary requests that a State adopt any provision that is not included within its water quality standards as previously approved, such as a non-degradation standard, the procedural requirements of section 10(c) must be observed, as well as those existing under appropriate State law. Any revised standards imposed without regard to these procedural requirements would be invalid and unenforceable.

VI. ADMINISTRATIVE REVIEW OF THE SECRETARY'S REGULATIONS

When a State either refuses to adopt the minimum water quality standards deemed essential by the Secretary or refuses to revise existing standards to meet new minimum levels imposed by the Secretary, the administrative review process of sections 10(c) (2) and (4) becomes applicable, and affected States have a right to a hearing before a Hearing Board, as set forth in section II of this Memorandum. The legislative history of the 1965 Act makes it clear that the scope of the Board's inquiry in reviewing a proposed standard will be broad. As the Senate Committee notes in its Report (*see* S. Rep. No. 10, 89th Cong., 1st Sess. 10 (1965)):

"The authority given the Secretary is not arbitrary. He is constrained from arbitrary action by the public hearing and consultation requirements of the standards section and by the knowledge that, if he promulgates standards, compliance with such standard must ultimately meet the test of 'practicability' in the courts, as provided in section 5(d) of the bill, should violation of such standards trigger an enforcement action. It is clear, also, that the enforcement conference and the *hearing board must*, in the light of the authority given the court, *consider the 'practicability' of compliance with the standards.*" (Emphasis supplied.)

The Hearing Board review process was further commented on by Congressman Blatnik, the House sponsor of the Water quality legislation:

"This Hearing Board . . . can then do either one of two things: Approve the standards and recommend approval at the same time to the Secretary, whereupon he may promulgate them and enforce them. Or the board may modify the

proposed standards. These modifications are reported back with a recommendation to the Secretary of HEW. He shall conform and comply with these recommendations of the hearing board and promulgate these standards. We have a process for establishing standards which will be a joint operation at which not only the Federal Government and its agencies, other than the Secretary of HEW shall be represented, but the States affected shall be represented, private industries shall be represented, and the general public shall be represented. In fact, all members affected by the standards are represented on the board, *and the recommendations of the board shall govern the final decision of HEW.*" 111 Cong. Rec. 24588 (1965). (Emphasis supplied.)

Judicial review of Federal water quality standards is provided in an enforcement action under section 10(c) (5) (see section II of this Memorandum). The Act is silent about the availability of judicial review of the Hearing Board's decision prior to a charge of violation,² and it is doubtful that such review may be obtained by States under the general statutory authority for review of administrative action, which does not apply to action by "agencies composed of representatives of the parties or of representatives of organizations of the parties to the disputes determined by them . . ." 5 U.S.C. §§ 701, 702, 704 (Supp. II 1965-67). See *Pennsylvania-Reading Seashore Lines*, 245 F.2d 579 (3d Cir. 1957) and *Brotherhood of Locomotive Firemen v. Chicago Burlington & O.R.R.*, 225 F. Supp. 11 (D.D.C.), *aff'd*, 331 F.2d 1020 (D.C. Cir.), *cert. denied*, 377 U.S. 918 (1964). This accords with Senator Muskie's understanding of the statutory review machinery.³

Thus, a State would apparently have no right to obtain judicial review of a Hearing Board's decision either approving or recommending modification of standards promulgated by the Secretary. Review under section 10(c) (5) is available only in the course of an enforcement action for abatement of pollution, and the State would presumably not be a party to the litigation. But if the State objected to standards as approved or modified following a Hearing Board decision, and if such standards were sought to be enforced by the Secretary under section 10(c) (5), the court might be expected to permit the State to intervene as a defendant in the enforcement action and thereby to challenge the legal or factual basis for the standard in question.

Mr. McEWEN. The answer from the Federal Water Pollution Administration still stands, that it could mean any or all of these things?

Mr. COFFEY. Depending upon the case that they decided on each situation what they meant.

Mr. McEWEN. That is all.

Mr. SULLIVAN. Are you saying that the Secretary was requiring the States to go above and beyond what the standards were, to make the water as clean as possible, Mr. Coffey?

Mr. COFFEY. Yes, I do not think there are any objections to meeting the State's water quality standards as they were adopted.

What the secondary treatment and the non-degradation policy both do is override any numbers of implementation plans which the States have submitted for approval and which the States have adopted after public hearings; and the point that was made this morning by Secretary Udall, he would have to be consulted on any lowering of water qualities.

This does not apply to lower the water quality below what the State standards are. It applies to lowering the quality below what is now existing, which may be above the State standard.

² Prior to Senate passage of S. 4, Senator Cooper offered an amendment which would have added additional procedural safeguards, including judicial review, at the standard-setting stage. The amendment was rejected by the Senate Committee and a more limited version was thereafter rejected by the Senate. See 111 Cong. Rec. 1524-31 (1965).

³ "As I understand, the Administrative Procedure Act provides only for administrative review of the regulations. Judicial review is provided when enforcement action is undertaken but in the establishment of rules and regulations only administrative review is provided." 111 Cong. Rec. 1530 (1965) (remarks of Senator Muskie).

MAINTENANCE OF WATER QUALITY IN CLEAN STREAMS

Mr. McCARTHY. Of course, are we not getting into a basic question? Alaska, with untouched streams, adopt water quality standards with their degraded streams in view, say, those around industries. Way up, they have crystal streams and lakes. Should those streams be permitted to be degraded to a lower quality?

I mean, eventually we may have to vote more money so they can go and clean that one up, so it seems to me, first that the water quality standards are sort of a minimum. Some streams are pure. I personally do not see why they should be permitted to degrade them because we are going to have to put in money to clean them up.

Here we are spending billions to clean up degraded streams. How can we, at the same time, tolerate the policy that permits pure water to be lowered?

Mr. COFFEY. Well, I think there are two points in your question. One, as long as the use which the State has determined for those waters are not impaired, we are not talking about pollution. It is only when those uses are impaired that we are talking about it. If those uses remain the same, we would never have to restore the original quality of that water.

And, No. 2, on your cost question, there is a cost involved with keeping the water at that level as well as the cost of restoring water to that level.

Mr. McCARTHY. What is the cost of keeping them at that level?

Mr. COFFEY. The cost may be the economic development of that State.

STATE DETERMINATION OF WATER USE

Mr. McEWEN. It seems to me what we are dealing with here is whether or not we are going to let the people of the State of Alaska or any other State, through their elected officials, determine what standards they want to set, what is best for them.

In other words, if the State of Alaska wants to decide, Mr. Chairman, that their greatest interest lies in keeping every stream a trout or salmon stream, and this is what the people of the sovereign State of Alaska want, they can set their standards and they will have nothing but trout streams, no paper mills, no industry of any kind that would affect that water.

If, on the other hand, they want to set standards near the estuaries in some parts of these streams that will be less than a trout water stream, believing, in their judgment, that best serves the interest of the people of the State of Alaska, then that, as I understood the law we have passed, saying the State should set these standards, and have them approved by the Water Pollution Administration, that is what was intended.

In my own district I am proud to say we have some beautiful trout streams which, under the classification by our own people in the State of New York, have been classified as that type of water to be maintained as trout streams. But, by heavens, we have not been trying to make trout streams out of some of our industrial streams. We have said if the water is good enough for industrial use in some cases, or

for potable water supply or in some cases trout streams, we are going to maintain them as we have classified them.

Now, we could, if we wished, in our State, or any State as I see it, set standards that would absolutely preclude any future industrial growth.

Mr. COFFEY. That is correct.

Mr. McEWEN. That is what we could do. What I am concerned about, and I appreciate your statement here, Mr. Coffey, I think it highlights this, that there apparently is now some thinking in the Federal Water Pollution Administration that certainly does not derive, in my view, from the law that we in this committee took up and passed unanimously in this House of Representatives.

There is a whole new concept here that we are going to make whatever it is better than it is, or we are not going to ever lower any quality in any water, any more effluents, though it may not affect the standard of the water.

I think this is extremely important, Mr. Chairman. Hearings on this legislation have, if you will, given this committee an oversight, an opportunity here to find out what has been going on, and I can assure you it has been enlightening to me, your testimony and other testimony here today.

But I had no idea how far we had gotten away from what was spelled out explicitly, clearly, in the law that we enacted.

Now, we have, as somebody has observed, both an affluent and an effluent society. It seems that the more we eat and the more we produce, the greater our affluence, and the more effluents we have. If we want to give up some of our good living and cut back on the goods and services that we enjoy, we can reduce both our effluents and our affluence.

We have to recognize this, and I think the States are the agencies to look at this in relation to the immediate need of our own people in these waterways. What is their need for potable water supply, for industry, for trout streams, for recreation? I do not believe that anyone, including my good friend, the Secretary, or anyone else here in Washington, has the wisdom to decide all of this here in Washington.

Certainly we have had industrial growth, and we hope we will continue to have it in America, and I hope some of it will be in my congressional district.

I hope we will be allowed to have standards that will accommodate industry as well as other uses that we want to make of our water.

I thank you again, Mr. Coffey. I think your testimony is most helpful.

Mr. SULLIVAN. Not to belabor the point, but has not the Secretary modified his policy to this extent that exceptions may affect the economic or well-being of a particular State?

Mr. COFFEY. At his discretion.

Mr. SULLIVAN. He has that policy approach, does he not?

Mr. COFFEY. The burden of proof there, even though the State board of quality standards would not be violated, any degradation in policy would have to get his office clearance to locate any new or increased source of pollution. And I cannot help but add that this does not only relate to industry. You cannot even have a new town spring up.

Mr. SULLIVAN. This is the point I raised about the social and economic well-being. It covers both of the points.

Mr. COFFEY. I do not know if anyone here in Washington is in high enough position to determine just what is best for the social and economic well-being of every State.

Mr. SULLIVAN. But there is this modification in his original position.

Mr. COFFEY. In language. It has not come to practice.

Mr. SULLIVAN. Thank you.

Mr. MCCARTHY. I see that Mr. James F. Boyer, project scientist of the Bituminous Coal Research, is here in the committee room.

Mr. Boyer, we are pleased to recognize you.

**STATEMENT OF JAMES F. BOYER, JR., PROJECT SCIENTIST,
BITUMINOUS COAL RESEARCH, INC.**

Mr. BOYER. Mr. Chairman, members of the committee, I am James F. Boyer, Jr., project scientist, Bituminous Coal Research, Inc., and director of technical services for the Coal Industry Advisory Committee to ORSANCO.

I am presenting this statement on behalf of the National Coal Association, Bituminous Coal Research, Inc., the research affiliate of NCA, and the Coal Industry Advisory Committee to the Ohio River Valley Water Sanitation Commission.

On behalf of the various groups I represent here today, I want to express our appreciation for the opportunity of presenting to the committee our views on the important technical and research aspects of mine drainage prevention and control, and on the legislation now before the committee.

We endorse those sections of S. 2760 which amend the Federal Water Pollution Control Act to provide for mine water pollution control demonstration projects and which will authorize additional funds for demonstrating feasible and practical techniques of eliminating or controlling acid or other mine water pollution. We are concerned, however, with the language proposed in one section of the bill, and recommend that it be amended.

Section 2 of the bill would add a new section 7 to the act covering area acid and other mine water pollution control demonstrations. Subsection (c) (2) would set forth as a condition for Federal participation in such projects the following:

That the State shall provide legal and practical protection to the project demonstration area to insure against any activities which will cause future acid or other mine water pollution.

We agree that the demonstration areas must be protected if the program envisaged in this legislation is to be effective. We believe it is possible, however, that this language if enacted without change, could be interpreted by some State authorities as a basis for prohibiting future mining within specific demonstration areas. Such an interpretation would result in the permanent denial of rights to part of the Nation's coal reserves. While the loss probably would be small in terms of total U.S. reserves of coal, denying access to specific deposits of coal would be extremely significant to the owners of or lessors of the mineral rights concerned.

To avoid the possibility of an adverse interpretation of the current language of section 7(b) (2), we recommend the bill be amended to incorporate the following provisions:

First, prior to final selection of an acid pollution control demonstration project site, coal reserves that will no longer be recoverable as a result of the project will be evaluated, and the owner or lessor of the mineral rights will be compensated equitably for the loss of rights to mine the coal.

Second, if possible to do so, before work is initiated at the demonstration site, the owner or lessor of the rights to the coal should be given sufficient time to mine the coal that otherwise would be lost. In the event it is not possible for the owner or lessor to mine, in a diligent and workmanlike manner, all of the coal involved, just compensation should be paid in the manner suggested.

Third, if mining within the demonstration area is permitted after reclamation has been completed, the operator of the mine will be liable for damages to the control measures installed and prior to opening the mine will be required to post bond in an amount sufficient to defray the repair costs.

The amendments we have suggested would, in our opinion, assure payment of equitable compensation for loss of rights to coal that could be lost in connection with this program, or permit coal to be mined under conditions which would protect the government's investment in the program.

While the bill would authorize the Federal Government to share the cost of any demonstration project, it does not mention Federal sharing of subsequent costs of maintaining the pollution control measures installed. We believe that this omission should be covered with an amendment specifically authorizing maintenance cost sharing.

Bituminous Coal Research, Inc., has been searching since 1944, in the field and in the laboratory, for methods to prevent stream pollution from coal mine waters. Other efforts by research organizations and the coal industry can be traced back 50 years, yet it has only been during the past 10 years that combined efforts of industry and government have been accelerated sufficiently to produce significant—although not yet adequate—technological advances.

Our support of the program set forth in this bill, with the amendments we have recommended, is founded on an awareness on the part of the coal industry of the problems still remaining to be solved in controlling mine drainage pollution.

As you are aware, stream pollution by mine drainage is as old as the mining industry. Shortening the term to "drainage" adds years to the history of the problem. Many coal seams were first located by observation of stretches of red water—stained by iron precipitates—downstream from natural coal outcrops. Coal mining did not create the problem, but it compounded it in the course of supplying the big coal tonnages demanded by industrial growth.

Lengthening the key term to "acid mine drainage" calls for more important qualification. Mine water discharges can be either acid or alkaline, and even change from one to the other in the life of a mine—from alkaline during development to acid during retreat mining, and then back to alkaline after the mine has been abandoned for a time.

Even the term "acid" in connection with mine drainage is frequently misunderstood to conjure up the picture of a stream of corrosive sulfuric acid. In fact, little or no free sulfuric acid is present in mine

water discharges. The unstable salts present in the solution hydrolyze—decompose—and in some cases oxidize to form free hydrogen ions. To the chemist, an “acid” condition exists in a solution containing an excess of hydrogen ions. A common indicator of water condition—acid, alkaline, or neutral—is pH, which is merely a measurement of the concentration of hydrogen ions in solution. When the concentrations of hydrogen ions (acid) and hydroxyl ions (alkaline) are equal, water is neutral and has a pH 7 on the scale. The more “acid” the water, the lower the pH number; the more alkaline, the higher.

The pH measurement is a useful indicator of mine water quality but does not establish the true polluting quality. The average cola soft drink, for example, has a pH 3.5.

Mine water is not in chemical equilibrium but changes with variations in pH, temperature, contact with alkaline materials, and dilution. All “acid” mine discharges, then, do not result in stream pollution. Mine drainage can contaminate a stream—so does any foreign matter—but it does not become a pollutant until it causes a quality change that makes a stream unsuitable for defined uses. The free hydrogen ion content of coal mine discharges can range from less than 10 p.p.m. to as much as 10,000 p.p.m. Also, many streams have a natural ability to neutralize mildly acidic mine discharges—for example, vast sections of Kentucky, Ohio, Indiana, Illinois, Missouri, and other midwest States are underlain by limestone, and the natural leaching of the limestone makes streams highly alkaline. This alkaline condition accounts for the many sales of water softeners in the Midwest.

The control of mine drainage need not be stretched in all cases to balancing acidity and alkalinity in a neutral condition. Aside from the fact that pH measurement in the field is complicated by such variables as the temperature and composition of water, mine water acidity is more than just pH. All metal ions that hydrolyze in water contribute to acidity; in many cases sulfuric acid is not involved at all. A laboratory procedure is needed to determine the degree of neutralization required to control the acidity of a given mine drainage discharge. Meanwhile, standardization of analytical methods for measurements of acidity and other mine water properties is a major research job in itself.

BCR is attempting to develop and standardize mine water analysis, on its own and through membership on an American Society for Testing and Materials technical committee on industrial water. BCR has planned field study of mine water characteristics to guide analytical procedures it is developing, including a spectrographic method for analyzing metal ions in mine water. Cooperating with BCR in funding this effort are the Pennsylvania Coal Research Board and the United Mine Workers of America. BCR is also seeking support from the Federal Water Pollution Control Administration to aid the research on the basic chemistry of mine water control.

DRAINAGE FORMATIONS: THRESHOLD QUESTIONS

If the precise mechanism of mine water formation were certainly known, steps to prevent or control it would be more surefooted. After years of investigation, including on-site studies in bituminous coal

mines, however, scientists are still working on probabilities. The one thing they are sure of is that the mechanism is far more complex than is generally believed.

The trouble starts with the oxidation of pyrite in the presence of air and water. Pyrite—chemically, iron disulfide—is a mineral commonly found imbedded in coal seams and associated rock strata. When it oxidizes, many reaction products can be formed; however, the primary product is ferrous sulfate which dissolves in water, thereby cleansing the pyrite to expose fresh surface for oxidation.

Acid mine drainage probably results from the interplay of all known processes of pyrite decomposition and oxidation—chemical, electrochemical, and bacterial. Chemical oxidation apparently triggers the acid-formation mechanism, but there are accompanying or subsequent complications. Pyrite conducts electricity and exhibits characteristics in water solutions that suggest an electrochemical reaction, which reduces pyrite to iron and generate sulfur gas and soluble forms of sulfur. Bacterial oxidation has also been inferred from the consistent presence of pyrite-oxidizing bacteria in acid waters in mines, and streams. A BCR sponsored study at West Virginia University dating back to 1944 led to identification of the probable—and important—role of bacteria in acid mine water formation.

The chemical complexity of the oxidation process and of the resulting alkaline or acid mine drainage discharges are described in a more detailed supplementary statement I shall present for the record.

Also described in the supplementary statement are the three major pyrite oxidation theories: chemical oxidation, bacterial oxidation, and electrochemical oxidation.

In addition to iron, other major elements show up in mine drainage waters, including calcium, sodium, aluminum, manganese, and magnesium. Aluminum and manganese are dissolved from strata in contact with acid mine water. Ground water, the commonest vehicle of mine drainage, usually contains calcium and magnesium from the dissolving of bed limestone, dolomite, and magnesites.

Precipitates from mine drainage are the showy parts of the problem—obvious even to the casual observer who has no fix on the acid content of a stream. Mine water containing ferrous iron may remain clear in a low-pH solution, but dilution with alkaline water, aeration and/or bacterial action can set up a chain of reactions converting ferrous to ferric iron and forming the yellow-to-red precipitates that cause “red water.”

The notorious “yellowboy”—the yellowish-brown sludge seen in underground mines and on streambeds—results from the oxidation of ferrous to ferric compounds that are insoluble in increasingly alkaline waters. The composition of the precipitate is as varied as the source material—in its idealized form yellowboy is ferric hydroxide.

PREVENTION PREFERRED: BUT NOT PROBLEM FREE

The task of controlling and preventing stream pollution from mine discharges can best be described as one involving a host of variable conditions of nature, each of which must be more fully understood. The demonstration projects that would be authorized in the bill be-

fore this committee would help all concerned achieved, with Federal assistance, the greater understanding that is vital to solution of the overall problem.

If we were talking about almost any other type of industrial activity, we could suggest relocation to more favorable working areas of the country. Coal mining operations, however, must be carried on where coal is found, and under the environmental conditions prevailing in and around each mine. And, the technology of mine drainage control and prevention, as it is developed, must match each of the assortment of existing conditions we find throughout the coal regions of the Nation.

NO SINGLE APPROACH TO THE PROBLEM IS POSSIBLE

Abandoned mines give a curt answer to those who think the simple way to stop mine drainage is to stop mining. Acid mine drainage is largely a postdated problem. Some authorities estimate that 3.5 million tons of acid equivalent is discharged annually from coal mines, and of that up to 90 percent originates in abandoned mines. That condition is a byproduct of industrial booming that put a priority on an adequate supply of energy fuel. Stream conservation is an exercise in national hindsight. The opportunity for timely prevention or control of acid mine drainage, therefore, has been lost at many abandoned mines, leaving only the costly and technically formidable alternative of discharge treatment. Current coal operators cannot be blamed for that historical mistake. They are diligently searching for ways to make sure they do not repeat it.

Sealing abandoned mines has produced mixed results. Mines below the natural drainage level have been allowed to flood completely, thus sealing off oxygen from acid-forming materials. Flooding an abandoned mine, however, can threaten flooding of adjacent active mines in many cases. Mining regulations then call for pumping the water out of the abandoned mine. Continuous pumping of the drainage may sometimes reduce the acid load—it would avoid the discharge of big “slugs” of acid water to receiving streams and give natural neutralization time to work—but it raises economic and legal questions. Many abandoned workings are orphan mines or public charges.

Water sealing, of course, will not work at mines above drainage. For them the theory that has intrigued researchers for years is air sealing. Isolated successes for air sealing have been reported since the 1930's by researchers for the U.S. Bureau of Mines, West Virginia University and the U.S. Public Health Service, Pennsylvania's Department of Mines and Mineral Industries constructed almost 1,000 mine seals in the late 1940's, and the coal industry—through the Coal Industry Advisory Committee to the Ohio River Valley Water Conservation Commission—sponsored a mine sealing project at Kittanning, Pa., with the Bureau of Mines. Knowledge of the permanent effects of mine sealing are still sketchy, however, and not all authorities agree it is the answer sought. As late as 1962, for example, Dr. S. A. Braley, working under a Mellon Institute fellowship supported by Pennsylvania, BCR, the National Coal Association, and other coal groups, reported that mine sealing was apparently not effective in reducing acid discharges from drift mines.

We hope the acid mine drainage pollution control demonstration projects now being contemplated under S. 2760 will give us a better insight than we have had up to now.

Active mines are the minor source of acid mine drainage because responsible coal operators spend millions of dollars annually on drainage control measures, including planned mining, land reclamation, and discharge management. This is in addition to discharge treatment efforts, which are still needed because complete control is an ideal. A single mine may have to handle a daily discharge running to millions of gallons, with the volume depending on both controllable factors—such as the methods and scope of mining—and such uncontrollables as rainfall, the permeability of the overburden, and the geology and hydrology of the area.

The coal industry favors preventive measures because it cannot commit itself entirely to drainage treatment for economic reasons, apart from the technical gaps in the state-of-the-treatment art. The composition and flow of mine waters are so variable from area to area that every discharge may require custom treatment.

The true economic yardstick of mine drainage treatment is not the cost per thousand gallons of mine water treated but the cost added to each ton of coal produced. That added cost could be excessively burdensome in many cases. For example, two mines might be required to treat the same volume of similar quality water—say 1,000 gallons per minute—yet one might produce 5,000 tons of coal daily and the other only 1,000 tons. Spreading the fixed cost of water treatment over the smaller production would mean a serious competitive disadvantage.

Water is cleared from most underground mines by pumping it from a sump through a borehole to the surface. Intermittent pumping can result in a “slugging” the stream system with mine drainage. The Coal Industry Advisory Committee to Orsanco has set up mining practice guides that call for equalizing the flow of mine water discharges to streams by lagooning or other form of storage. The CIAC practices also include all practical diversion of surface and ground water to prevent its entry into mining areas or at least reduce its flow through workings; handling water that does get in by suitable channeling, or, preferably, piping, with adequate pumping for quick removal; and effective handling and disposal of refuse from coal mining and processing to minimize acid drainage from gob piles to streams. The CIAC to Orsanco publication “Principles and Guide to Practice in the Control of Acid Mine Drainage” is attached as a supplement to this statement.

There are possibilities for mine drainage control by operational planning that have not yet been completely evaluated technically or economically. Mine layout, for example, to minimize water inflow or channel the water for quickest removal; partial coal extraction to avoid caving to water-bearing strata; and avoidance of excessive coal fracturing during mining. Fringe thinking on the acid mine water problem has extended to the use of antioxidant chemicals in ground water to coat—and thus inhibit reaction by—acid-forming materials. Wide application of this idea would have to be preceded by more basic research in both chemistry and hydrology.

Strip-mine drainage has been substantially controlled by effective land reclamation, which aims at a reduction of acid formation and prevention of soil erosion as prior steps to revegetation and restoration of land to productive use. The research lesson here is that the mechanics of reclamation must be mated with conditions at each strip-mined area. Instead of draining the mined-out area, for example, it may be better to impound water in the final cut, which will not only inundate acid-forming materials but also provide a usable lake. Researchers from Kent State University and the University of Missouri have concluded independently that initially acid ponds often improve enough in time to support fishlife.

Spoil banks from strip mining can have a positive role in water storage, according to a University of Indiana researcher. He observed the spoil material produces significant amounts of flow during severe drought periods, compared with little or no flow from undisturbed areas. Also, because an appreciable amount of rainwater is retained in spoil banks and mining cuts, they help to minimize flood flows within the watershed, he noted.

Dr. P. H. Struthers of the Office of Appalachian Studies has pointed out that attempts to reclaim mined land have frequently aggravated the erosion problem. "Especially troublesome has been the belief that to reduce acid seepage from strip mines, rainwater should run off rather than soak in. Only now are we beginning to recognize this is not so, and that infiltration on mined land should be encouraged," Dr. Struthers concludes.

Gob piles or coal refuse dumps contain acid-forming materials, and acid may be leached out by surface runoff or flooding. Since this is a manmade problem—unlike true mine drainage—it usually yields to such controls as proper construction of the pile; placement of the pile to eliminate water flow through it; compacting the pile and using soil-cover to divert surface water and avoid erosion.

TREATMENT PROCESSES . . . NOT HERE BUT EVOLVING

A number of mine drainage treatment methods have been evaluated experimentally, but no universal solution has been found as yet. Most experimental work reported in the literature has involved large-scale exploratory neutralization research in which a particular mine water was treated with a particular reagent. There has been little systematic research to resolve differences in results even with the same reagent. Frequently results are reported with little attention to the chemistry of the treatment system, and only meager information is available on the effects of mine water composition, chemical equilibria, temperature, oxidation potential and treatability by a specific process.

An important phase of BCR's research is to develop constants for the best combination of chemical techniques to treat particular mine waters. The practical drive is to give coal company engineers a firm guide to the kind of treatment plant they need to set up.

Lime neutralization of acid mine water has a relatively long history. Lime has a high basicity—reacts readily with acid to form salts—is generally available and, although expensive, costs less than all other bases except limestone and waste material. Researchers have tried lime—in both the hydrated and calcined—quicklime—forms—to

neutralize acid wastes from a range of sources, from coal and lignite mining to steel pickling operations. Major drawbacks in the treatment process have appeared, including the cost of the reagent—about \$15 to \$19 a ton, depending on the lime form—and the production of a voluminous sludge that is hard to dewater and dispose of. The sludge is a waste problem, pending discovery of a practical way to squeeze byproducts from it.

The most complete engineering data on lime neutralization of acid mine drainage has emerged in the past few years from "Operation Yellowboy"—a portable treatment plant program developed by the Pennsylvania Department of Mines and Mineral Industries. Studies covered a number of locations in Pennsylvania and have confirmed the applicability of lime treatment to at least one mine acid effluent, at a cost of \$1.09 per 1,000 U.S. gallons.

Pennsylvania's efforts in acid mine drainage treatment bend to lime neutralization. Current in-state treatment plants include those operated by Bethlehem Steel Corp. and Jones & Laughlin Steel Corp. Bethlehem built its lime-treatment process into a new coal preparation plant at its Marianna mine. Jones & Laughlin treats water from its Vesta No. 5 mine with lime before discharging it to the stream system.

Pointing up the complexity of the acid water problem and the need for multiple, customer solutions is the Barnes & Tucker Co., which is investigating lime neutralization and four other approaches at five different coal mines.

Limestone neutralization has been studied by BCR and others including Rochester & Pittsburgh Coal Co., U.S. Bureau of Mines, and Great Britain's National Coal Board. Limestones and dolomites are naturally occurring carbonate rocks, commonly available at coal mining sites and less costly to use than lime. Also, limestone neutralization of mine drainage produces a denser precipitate—not yet identified—than lime treatment, with a rapid settling time. Limestone, on the other hand, has the reputation of reacting slowly with ferrous iron.

BCR, which has intensively investigated the reactivity of limestones and dolomites—for removal of sulfur dioxide from plant stack gases as well as in mine water treatment—believes the reactivity of the materials has been underestimated. It is currently studying the variables in this form of chemical treatment, including the most significant—limestone composition and the degree of agitation of limestone particles during reaction. Agitation is important to keep reaction products from coating the limestone surfaces and thus reducing reactivity.

The Bureau of Mines recently demonstrated a laboratory scale technique "using a small cement mixer as a simple reactor to provide abrasive agitation of limestone and mine water." The Bureau cautioned, however, that it must still define process variables before the development can be considered complete.

Rochester & Pittsburgh Coal Co. is operating the only full-scale application of limestone neutralization—and that is experimental and still to be evaluated. R&P is using a rotating-drum reactor followed by a settling basin to treat 200,000 gallons daily of mine water containing 50 parts per million ferric iron.

BCR evaluates a combined limestone-lime process as encouraging. It sees an advantage in that the bulk of the reactions would be between limestone and various acidic groups. Ferrous iron would be precipitated, but the combined effects of limestone and lime may require only small lime doses. The precipitated ferrous iron would oxidize rapidly, and the resulting acidity would be neutralized by excess limestone already in the system. To complete its study, BCR will do further research on such process factors as mine water composition, its Eh—standard oxidation-reduction potential—and pH, quantity of reagents needed, and agitation and aeration rates.

Potassium permanganate has been evaluated experimentally by Barnes & Tucker Co. for treatment of the more than 14 million gallons per day discharged from one of its mines. The iron content of the water averages 20 parts per minute. The permanganate is being evaluated as a chemical oxidant for ferrous iron.

Sodium hydroxide—and ammonium hydroxide—have been applied to mine drainage in isolated cases but are unlikely to reach wide use. Both react with mine water constituents in basically the same way as hydrated lime but are more expensive—\$60 per ton for sodium hydroxide and \$92 per ton for ammonium hydroxide—and not without problems. Sodium hydroxide is a much stronger base than lime and has the advantage of being fed as a liquid rather than a slurry. It also produces a soft water, compared with lime neutralization, but that is a relative merit depending on the end-use of the treated water. A mid-west coal producer tested sodium hydroxide neutralization to reclaim impounded strip-mine water for use in a coal preparation plant but abandoned it because of a bad side effect on froth formation in flotation equipment. Ammonium hydroxide is a potential hazard to fish. The only full-scale treatment plant using the chemical—as anhydrous ammonia—operates on a closed-loop cycle.

Sodium sulfide as a reagent for treating mine water is being investigated to BCR under a grant from the Appalachian Regional Commission. The reaction is instantaneous and produces an easily filtrable material, iron sulfide. Also, the acid in the mine water is simultaneously neutralized. Further, it may be possible to recover sulfur from the iron sulfide. The recovered sulfur could be used to put the treatment on a reagent-recycling basis. The possibility of making it yield usable byproducts is worth evaluation. In another step to improve the economics of the treatment, BCR is looking into the feasibility of using sulfur-bearing wastes, such as coal mine gob piles, to provide low-cost sodium sulfide.

Ozone, a powerful oxidizing agent, is being tested for mine drainage treatment by a Wilkes College researcher. Like potassium permanganate, ozone's principal function is to oxidize ferrous iron to ferric, so it must be used in conjunction with a suitable agent to neutralize acid. Initial research indicates a high ozone demand, but costs and other data are not yet available.

Bacterial oxidation of iron in mine drainage waters, which has been studied on a small scale by a number of researchers, will get an intensive evaluation in a new project for which Continental Oil Co. and the Federal Water Pollution Control Administration will share costs. Conoco scientists will make laboratory studies of type of iron-oxidizing bacteria that will grow in mine drainage waters and remove iron

by incorporating it in the microbial cell or the slime mass around the cell. They will also screen likely sulfate-reducing bacteria that will produce hydrogen sulfide to react with iron in the mine water and precipitate iron sulfide. Consolidation Coal Co., a Conoco subsidiary, will field-test the bacterial process at mine drainage lagoons in West Virginia.

Instead of using bacteria for mine water reactions, MSA Research Corp. has investigated the possibility of attacking bacteria that may contribute to the formation of acid in the first place. *Bacteriophages*—bacteria-specific viruses that dissolve growing bacteria—appear to inhibit bacterial oxidation of pyrite but incompletely. Continuing MSA research aims at developing greater virulence in phages.

Demineralization processes—familiar from work on converting saline to potable water—have been experimentally evaluated for mine water treatment. Westinghouse Electric Corp. has looked at flash distillation, and General Dynamics Corp. has evaluated a reverse osmosis process. In both cases, brackish (intermediate between salt and fresh) water was tested.

SLUDGE DISPOSAL . . . AFT END OF THE PROBLEM

There is still a tough problem down the road after mine drainage treatment of any kind—handling and disposing of the estimated 100 million tons of sludges that could be produced annually in mine drainage neutralization. The disposal problem so far is an operating debit at best, and sometimes a physical burden. No disposal method for the brines produced by demineralization processes is at hand. Handling the sludge from already common lime neutralization processes is a major operation, comparable to handling sanitary sewage and industrial waste effluents. The precipitated material may retain up to 98 percent water. Where settling basins or lagoons are used for dewatering, subsurface drains must be provided and the basins taken out of service periodically for removal of concentrated sludge by dredging, draglining, or bulldozing—or pumping. The solids may be buried without danger of redissolving into underground water, but often suitable landfill area is not readily available.

A process that could reclaim useful products from mine drainage sludge would go far toward easing the economic burden. BCR is investigating the byproduct possibilities, including a substitute material for the limestone used to rockdust underground coal mines.

The review and evaluation of mine drainage research that is being conducted through the joint CIAC-BCR program has revealed many critical subject areas in which more knowledge is needed. We need to know more about the formation of mine water if we are to prevent acid drainage pollution with any consistent measure of effectiveness. We need to know more about the character of mine water if we are to establish parameters for design of treatment processes. We need to know more about the conditions under which mine sealing will be effective. And we need to know how we are to dispose of, or possibly put to beneficial use, the millions of tons of sludge generated by acid water neutralization processes.

The prospects for a research breakthrough in mine drainage control will be explored by experts at the Second Symposium on Coal Mine Drainage Research May 14 to 15 at Mellon Institute, Pittsburgh.

This symposium has been arranged by members of the Coal Industry Advisory Committee to ORSANCO in cooperation with: Bituminous Coal Research, Inc. (an affiliate of the National Coal Association); the Coal Research Board of the Commonwealth of Pennsylvania; the Ohio River Valley Water Sanitation Commission; the Land, Air, and Water Use Study Committee of the American Mining Congress; and, the National Coal Association.

Papers will be presented before symposium sessions covering the chemistry of mine-water formation, the relationship of biology to mine drainage, hydrological influences, research and pollution abatement programs, control and treatment techniques, and their application by industry by some of the Nation's leading scientists, researchers, and representatives of Government and industry who are concerned with the effects and practical control of acid mine drainage.

In short, final and effective solutions to the problems of mine drainage control and prevention will come out of the combined efforts of many individuals representing a broad spectrum of scientific and technological disciplines—chemistry and geochemistry, geology and hydrology, biology and bacteriology; and mining engineering and sanitary engineering.

We recognize that there is a scarcity of talented people in these and other disciplines, and that perhaps the task of solving acid mine drainage problems is not a glamorous one which would attract the people we need. The coal industry is ready to cooperate in every way it can in implementing a successful mine drainage control research and demonstration program.

We urge the establishment by the Federal Government of a statutory technical advisory committee composed of representatives of the coal and other mining industries and academic experts well versed in the mine drainage field. This committee would concern itself with the fundamental, down-to-earth technical problems involved in developing technically feasible and economically attainable means of preventing and controlling acid mine drainage and the subsequent pollution of the Nation's rivers and streams. Policy decisions would be left to the agency charged with administration of the demonstration projects called for in S. 2760, but the agency would have the benefit of advice from those experts who are most closely associated with the basic problem.

We appreciate the opportunity afforded us today to present our views on S. 2760, and to offer a report on the state-of-the-art of mine drainage control.

We support section 2 of S. 2760 because of the urgent need for the body of technical knowledge which will come out of the acid mine drainage research program this part of the bill proposes.

The coal industry is in full accord with all those who strive to make our rivers and streams as free of pollution as is practicable. We are prepared to demonstrate our desire in this respect by working to attain the goals underlying the program set forth in this bill.

I would like to submit for the record at this point in my testimony the following two supplements. These are:

Appendix A. "Principles and Guide to Practices in the Control of Acid Mine-Drainage," compiled by the Coal Industry Advisory Committee to the Ohio River Valley Water Sanitation Commission. This document contains Orsanco resolution 5-60.

Appendix B. "Status of Mine Drainage Technology," by E. A. Zawadzki, of Bituminous Coal Research, Inc., prepared as a supplement to my testimony.

Thank you.

Mr. McCARTHY. Without objection, so ordered.

(Apps. A and B follow:)

Principles and Guide to Practices in the

Control of Acid Mine-Drainage

supplemented by Case Histories

Attachment A
to
Testimony of James F. Boyer, Jr.
before
Committee on Public Works,
U.S. House of Representatives
April 23, 1968

Compiled by

COAL INDUSTRY ADVISORY COMMITTEE

OHIO RIVER VALLEY

WATER SANITATION COMMISSION

OHIO RIVER VALLEY WATER SANITATION COMMISSION

An interstate agency representing Illinois, Indiana, Kentucky,
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PRINCIPLES, PRACTICES AND CASE HISTORIES IN THE CONTROL OF ACID MINE-DRAINAGE

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of the

OHIO RIVER VALLEY WATER SANITATION COMMISSION

March, 1964

FOREWORD

The Coal Industry Advisory Committee was established in 1951 to advise and assist the Ohio River Valley Water Sanitation Commission in its regional crusade for the abatement and prevention of pollution from coal mining operations. The Committee consists of representatives from commercial and captive coal producers and coal-industry associations.

Pollution-control measures for acid mine-drainage were established by the Commission on January 14, 1960, by adoption of Resolution No. 5-60. The resolution was subsequently amended in January 1963 to include a provision regarding the handling of acid-producing materials encountered in the overburden in stripping operations.

This manual was prepared by the Coal Industry Advisory Committee for the use of coal operators and officials of pollution-control agencies. It provides a review of the fundamental principles involved in the formation of acid mine-drainage together with a guide to control practices that will aid in ameliorating the effects of mine drainage on the streams and rivers of the Ohio Valley.

At a meeting on September 12, 1963, the Commission accepted the manual for publication, and expressed appreciation to the Coal Industry Advisory Committee for its work in compiling the manual and for its aggressive efforts in implementing the provisions of Resolution No. 5-60.