THE TIMELESS BEAUTY OF THE CHESAPEAKE BAY: WILL OUR GENERATION DESTROY THIS REMARKABLE ESTUARY?

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VIRGINIANS, sound the alarm! Citizens of this nation pay heed. One of our nation's and surely Virginia's, most valuable resources is on the brink of destruction. Our state's magnificent and productive natural estuary, the Chesapeake Bay, is dying. Man, in all his grandeur, is responsible. For years, the unfettered drainage and dumping of chemical wastes, sewage, and agriculture fertilizers into the more than one hundred and fifty rivers, creeks, and streams which feed the Bay has limited the estuary's ability to cleanse itself. It is now in the hands of humans to attempt to reverse this course. If immediate steps are not taken to rehabilitate both the Bay and its tributaries, this marvelous body of water will become nothing more than an exhausted, polluted, dead natural resource laid waste by human development. 1

The day has come for man to both realize and react to his impact upon the fragile environment surrounding him. Lord Byron said it best almost two centuries ago when inspired by the "austere grandeur" of the Swiss Alps on a visit in 1816:

How beautiful is all this visible world!
How glorious in its action and itself!
But we, who name ourselves its sovereign, we,
Half dust, half deity, alike unfit
To sink or soar, with our mixed essence make
A conflict of its elements, and breath
The breath of degradation and of pride.
Contending with low wants and lofty will,
Till our mortality predominates.²

Concern has arisen recently over the complex ecosystem of our Bay. It is the largest and most productive estuary in the United States, providing food and a hub of commerce to Virginia, Maryland, and Pennsylvania since colonial times. The living resources of the bay constitute a vital part of the United States fishing industry. Unfortunately the Bay's seafood harvest has been declining steadily during the past several years due primarily to the

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¹ See Christian Science Monitor, Mar. 5, 1984, at Bl5, Col. 1; see also Marjorie Hutler, 4 VA. J. NAT. RESOURCES L. at 185, 1984-85.

² George Gordon, Lord Byron - <u>Manfred</u>: "A dramatic poem" referred to by Byron as "a drama of ideas." It is with humble intentions that we, the staff of the <u>Colonial Lawyer</u>, inspired by the great blue waters of the Chesapeake Bay, endeavor to write, that "she" may be saved - for us - and posterity.

deteriorating water quality of the Bay. The Bay and its tributaries are in the midst of the megalopolis that stretches from Boston to Richmond. It is not surprising that this carefully balanced system should be disturbed by the impact of intense and steadily increasing human activity. The Bay can be saved; however, to do so will require the prudent decisions of state legislatures and local governments across the eastern seaboard. Concerted efforts must be made at all levels to effectively inhibit the ability of pollutants to enter tributaries flowing to the Bay.

I. Problems Created by Bay Pollution

Pollutants which flow from tributaries and enter the Bay are not quickly dispersed or absorbed by its waters and flushed into the vast Atlantic Ocean. The circulation patterns in the Bay are unique, both ir flowing fresh water and in-flowing ocean water. These conditions, which make Bay ecosystems some of the most biologically productive on earth, also act to hold within the estuary the pollutants that reach the Bay by tributaries. These pollutants have accumulated over the years and now are acting to gradually destroy the productive nature of the waters. Overenrichment with nutrients (phosphorus and nitrogen), contamination by toxics, and a rapid decline in the amount of submerged aquatic vegetation (SAV) in the Bay are all a result of the pollution. 6 Another problem involves the large areas of the Chesapeake Bay which have low or no dissolved oxygen (DO). Between 1950 and 1980, the size of these areas increased by a multiple of fifteen. The extent of the DO problem is evidenced by the fact that "from May through September [1983] in an area reaching from the Annapolis Bay Bridge to the Rappahannock River, much of the water deeper than 40 feet has no oxygen and, therefore, is devoid of life."7

Can we as Virginians comprehend the magnitude of a Bay devoid of life? If this continues, if this trend is not immediately put to a halt, we could be faced with this devastating reality, and in our lifetime. The famed seaman Jacques Cousteau has warned such and pointed to the example of the Mediterranean Sea. This cannot be allowed to occur. If we fail to take both preventive and corrective (rehabilitative action); we may soon only remember those world renowned Chesapeake Bay Blue Point Oysters or the succulent blue and soft shell crabs, or Bay scallops. Already we have seen the striped bass population, the fish that at one time was the Bay's mainstay, eroded to levels such that the species now requires govern-

Warren and Kindt, <u>Land-Based Pollution and the Chesapeak Bay</u>, 42 WASH. & LEE L. REV. 1099, 1100 (1985).

⁴ Eichbaum, <u>Cleaning Up the Chesapeake Bay</u>, 14 ENVIL. L. REP. 10237, 10238 (1984).

⁵ U.S. Environmental Protection Agency, CHESAPEAKE BAY PROGRAM: FINDINGS AND RECOMMENDATIONS 19 (1983).

⁶ Eichbaum, supra note 4, at 10239.

Warner & Kindt, <u>supra</u> note 3, at 1111, <u>citing</u> EPA Chesapeake Bay Findings, supra note 5, at 22.

mental protection. The loss of these species will mean more than the mere loss of dietary delicacies. The pollution of the Bay and the decline in submerged aquatic vegetation (SAV) may have even more devastating effects on the nation's ecology.

Twenty species of SAV occur in the Bay, in water less than three meters deep. SAV stabilizes sediments, baffles current, reduces shore erosion, buffers against nutrient runoff, and serves as food for aquatic species and waterfowl. SAV zones provide some of the most favorable habitat in the Bay. The Bay is one of the flyway routes for Canada Geese, ducks and many other northern waterfowl. Quite possibly, this complex ecosystem could become so polluted that these transient birds will no longer survive the southern flight because of Bay pollution. These beautiful creatures could be forced to reroute natural flyways because of lack of food and clean water in the Bay region. The ramifications of a dead Bay are too astounding to calculate. Our only choice is to band together as a state and as a nation and save this resource from destruction.

II. Pollution Control Proposals

In 1976 the EPA began a five year project to research, study and identify the ecological problems threatening the fragile ecosystem of the Bay. Completed in 1981, the studies resulted in a practical set of recommendations. The final product of research and recommendations were five written essays, and they form the basis of most of the knowledge we have today about pollution of the Bay, the sources of that pollution, and its effects upon the Bay. 9

In the efforts to save the Chesapeake Bay, pollution controls must be implemented in several specific areas: 1) sewage treatment, 2) industrial pollution/waste product discharges, 3) reduction of non-point source agriculture pollution and 4) pollution limitation of industrial toxic waste disposal. 10 If measures in these areas are not successfully undertaken, the environmental threshold could be crossed. Crossing this threshold - where

⁸ Hutter, supra note 1, at 223 n. 27, citing Citizens Program for Chesapeake Bay, CHOICES FOR THE CHESAPEAKE: AN ACTION AGENDA 60 (October 1983) (workshop recommendations to the December 1983 conference) at 6.

⁹ See supra note 5, U.S. Environmental Protection Agency, CHESAPEAKE BAY PROGRAM TECHNICAL STUDIES: A SYNTHESIS (1982) (a summary of the technical knowledge gained from numerous research projects concerning particular problems). U.S. Environmental Protection Agency, CHESAPEAKE BAY: INTRODUCTION TO AN ECOSYSTEM (1982) (a description of the ecological systems of the Bay and the components which make up its complex ecosystem and the relationship of those components.) [hereinafter CHESAPEAKE BAY ECOSYSTEM]. U.S. Environmental Protection Agency, CHESAPEAKE BAY: A FRAMEWORK FOR ACTION (1983) (a description of current conditions in the Bay and recommendations for the future restoration of the estuary) [hereinafter A FRAMEWORK FOR ACTION]. U.S. Environmental Protection Agency, CHESAPEAKE BAY: A PROFILE OF ENVIRONMENTAL CHANGE (1983) (summarizing the past and present character of the Bay) [hereinafter A PROFILE OF CHANGE].

¹⁰ Eichbaum, <u>supra</u> note 4, at 10241. Efforts to rehabilitate the bay are not restricted to these areas. These are the areas of greatest concern however because these several areas constitute the major portion of the current threat to the Chesapeake Bay.

water quality moves just below that point which allows the survival of basic species - would bring death to most living organisms in the Bay. Because of the unique circulation of the Bay's waters - once this threshold is reached - the Bay will not quickly flush itself. Because of this severely limited assimilative capacity and "irreversible despoilation as the probable result" 11 of crossing the environmental threshold, we as Virginians must work now to cleanse our waters, our life's blood.

A. Sewage Treatment

It is essential that states whose municipal sewage treatment plants drain into the tributaries flowing to the Bay impose more stringent regulations on those municipal treatment plants to remove excess nutrients. Wastewater treatment techniques currently employed by many municipalities across the east coast, but especially in Virginia, Maryland, and the District of Columbia, fail to remove many pollutants, particularlyphosphorus. These pollutants are discharged in massive quantities into the upper Bay. 12

The magnitude and impact of sewage waste water on the Bay is illustrated by the fact that "[o]ver 1,000 sewage treatment plants are located on the Chesapeake Bay and its tributaries.*13 Each day they contribute more than one and a half billion gallons of treated wastewater to our rivers and streams and [ultimately] to the Bay. 14 As large as the Bay is, these numbers are astounding. They are astounding even if we assume that all of the wastewater reaching the Bay has been properly treated, but this is not always the case. Wastewater pumped into rivers and streams "frequently does not meet the requirements established by the government, even when those requirements are lax, as they often are." This is unacceptable! resolve the crisis facing the Bay, much more must be done. If the Bay is inadequately assimilating the pollutants reaching it today - what will occur with development and increased sewage demands? If we know that the future will require greater amounts of wastewater to be dumped into the Bay and its tributaries, logic requires us to demand now treatment that will greatly reduce the amount of pollutants present in the dischargeable wastewater.

For years, many people believed that the Bay had an unlimited capacity to assimilate human wastes." Now we know this is not true. States have begun to take action, but we, as concerned citizens, must insure that legislation equates to compliance, which is often not the case with regard to environmental protection legislation. Our government has been far to lax in punishment and enforcement efforts. Penalties must be established that

¹¹ Warner & Kindt, supra note 3, at 1102.

¹² See Eichbaum, supra note 4, at 10241.

¹³ A. Powers, ENVIRONMENTAL DEFENSE: KEY PROBLEMS 12 (1985).

¹⁴ Id.

¹⁵ Id.

¹⁶ See supra note 5, at 19.

will convey to polluters the severity and consequences of continued misuses of the environment.

Maryland, Virginia, Pennsylvania, and the District of Columbia have begun unified action, ¹⁷ but citizens must press for further Bay relief programs. With regard to the Chesapeake Bay, there is no room for mistake, there is no place for mismanagement, and there is no time for delay. It is clear that much of what will occur to end the pollution of our rivers and streams will occur at the local and state level. ¹⁸ Thus, small groups of concerned citizens can have a real impact on how local governments and city planning commissions approach and manage the problem of sewage treatment in their respective communities. Federal and state standards exist, but these are the minimal requirements. Communities should push themselves not to meet the standards, but to exceed these standards and by as much as possible. When we as a people begin to confront problems with this attitude, maybe, just maybe, immediate and substantial progress can be made.

There has been proposed federal legislation that could greatly enhance the ability of state and local government to <u>fund</u> intensified pollution control measures. On January 3, 1985, Maryland Representative Ray Dyson introduced Chesapeake Bay Legislation. This bill would amend the Clean Water Act to authorize EPA to disburse ten million dollars a year in matching grants to states, through fiscal year 1989, to implement the interstate management plans developed pursuant to the "Chesapeake Bay Agreement." The amendments would also authorize three million dollars annually for the states to study point source and nonpoint source discharges into the Bay. Funding for virtually any project is a source of

The District of Columbia has established a policy that will control urban runoff as well as concomitant sewer overflows by 1989. Maryland allocated over \$70 million to the cleanup effort by authorizing: (1) the establishment of a comprehensive storm water mangement program, (2) an improved and upgraded system of treatment plants, and (3) a program to preserve land adjacent to tributaries. Virginia's 2 year contribution towards cleaning up the Bay was 13.3 million. the plan was directed at controlling point source pollution, identifyin conconcentrations of orgamicides and toxic metals, and providing controls on nonpoint source pollution caused by botha griculture and urban runoff. Pennsylvania established a plan for the susquehanna River to curb the entrance of phosphates, from treated sewage discharges, and reduce the level of nutrients in washwater after treatment. These controls to limit pollutants in the Susquehanna are important because the river cosntitutes the larges source of freshwater entering the Bay. Warner, supra note 3, at 1122, 23.

¹⁸ See Flynn, The Critical Role of the States, 55 J. WATER POLLUTION CONTROL FED'N 1224 (1983); and J. CAPPER, G. POWER & F.R. SHIVERS, JR. CHES-APEAKE WATERS 12 (1983).

¹⁹ H.R. 9, 99th Cong. 1st Sess. (1985).

The Chesapeake Bay Agreement of 1983 was a result of a conference of the Governors of Virginia, Maryland and Pennsylvania, the Mayor of Washington D.C., and the Administrator of the EPA. Each member proposed an "action agenda" which was to be implemented in a "joint initiative" to save the Chesapeak Bay. The text of the agreements is printed in, Citizens Program for the Chesapeake Bay, CHOICES FOR THE CHESAPEAKE: AN ACTION AGENDA 6, 17 (1984).

Hutter, supra note 8, at 194.

great debate in the American political process, especially at the local level where even small projects have the potential to strain the budget. Therefore any federal assistance, such as matching funds, would surely help to alleviate some of the burden facing local planners when attempting to decide whether the implementation of heightened pollution control measures is possible.

If multistate cooperation is to succeed in controlling point source pollution of the Bay and its tributaries, local authorities must exercise their enforcement authority. No longer can violators be tolerated. Ironically, those communities in Virginia most concerned with the continued health and survival of the Chesapeake Bay are the communities whose sewer systems and inadequate sewage treatment plants are major Bay polluters. 22 The inflow of urban rainwater runoff into sewer lines causes the capacity of sewage treatment plants located on the James River near Newport News, Hampton Roads, and Cape Charles, Virginia to often be exceeded. plants are then forced to discharge wastewater containing high levels of nutrients, bacteria, and sewage solids <u>directly</u> into the James.²³ In the entire Bay region, this sewage problem is most serious in communities on the lower James in Virginia. Something must be done. Virginians must help themselves before seeking assistance from others. We must lead this charge by example. The battle has begun and the intolerable discharge of pollutant filled wastewater into the Chesapeake Bay and its tributaries must end. It must end in New York. It must end in Pennsylvania. It must end in the District of Columbia. It must end in Maryland, and certainly it must end in our own backyard. America is a nation founded with citizen action led by Virginians, and it would be a grave mistake to tarnish that heritage by the failure of Virginians to fulfill their obligation to state and country today.

B. Industrial Compliance

Our government must insure that industrial compliance with the Clean Water Act²⁴ is fact rather than fiction. We as citizens of this Commonwealth have the legal right to protect our environment; with respect to industrial polluters, it is imperative that we exercise these rights. In a recent decision in Virginia, Gwaltney of Smithfield, Virginia was sued by the Chesapeake Bay Foundation, a citizens environmental organization.²⁵

See Commonwealth of Virginia Council on Environment, Water Control Bd., Soi & Water Conservation Comm'n and Dep't of Marine Resources, Virginia Chesapeak Bay Initiatives, 1984-86 (Apr. 30, 1984) (a table of Virginia General Assembly Appropriations).

Hutter, <u>supra</u> note 8, at 203 n. 128, <u>citing</u> Virginia Bay Initiatives, <u>supra</u> note 22, at C-2 (emphasis added).

²⁴ 33 U.S.C. §§1251 (1982).

^{25 611} F.Supp. 1542 (E.D. Va. 1985) The suit was authorized by Section 505 of the Clean Water Act, 33 U.S.C. §1365, as a "Citizen Suit" to enforce compliance with federal law.

A federal judge fined Gwaltney a total of \$1,285,322.26 This award was affirmed by the United States Court of Appeals for the Fourth Circuit.27 This decision illustrates that private citizens and citizen organizations can play a major role in the protection of our precious environment. In Maryland, Chesapeake Bay Foundation suits have spurred the state officials to double the number of personnel assigned to industrial compliance. Actions filed by the state have increased dramatically.28 If anything, citizen awareness has spurred the state to take important action.

C. Reduction of Non-Point Source Agriculture Pollution

For years, the farming community failed to comprehend the devastating effects its land use practices had on Virginia's waters. The practice of cultivation of highly erodable soils dramatically increases the amount of sediment that reaches the Bay. The improvident use of fertilizers and pesticides also pollute our waterways with excessive amounts of nutrients, especially nitrogen, and toxics. Agricultural practices have significantly contributed to the decline of the Bay.²⁹ The increase in nutrients stimulates growth of algae and phytoplankton and prevents the dissolution of oxygen.³⁰ The lack of oxygen affects the survival of fish indigenous to the estuary, and will if not controlled, prevent the populations from ever returning.

For successful changes to be undertaken, state agriculture and conservationists must convince farmers that the containment of erosion problems are in the best interest of both the community and the farmer. The first problem with this approach is that the technical resources for advising farmers as to how to reduce runoff pollution and erosion have not been available at the soil conservation district level. The major problem however is that too little financial assistance has been made available to farmers to induce them to correct certain agricultural practices. Their livelihood is farming, and it is understandable that they irrigate wherever practicable and fertilize to get the most from each crop. The solution lies with more money and technical advice. We as a society should fund these projects because we are not blameless with respect to agricultural pollution. We cannot expect farmers to bear the burden of the cost of Bay cleanup. Incentive payments and matching grants to help farmers control erosion and runoff could benefit everyone. The Bay study, A Framework For

^{26 &}lt;u>Id</u>., at 1565 (Merhige, D.J.).

Chesapeake Bay Foundation v. Gwaltney of Smithfield, 791 F.2d 304 (4th Cir. 1986).

A. POWERS, supra note 13, at 13.

Lindon & Gergen, <u>Interagency Disputes Over Dry Fields or Clean Water:</u> A Case Study of the Conflict Between Agricultural Drainage Programs and the Chesapeake Bay Cleanup, 4 VA. J. OF NAT. RESOURCES L.219, 221 (1985)

³⁰ Id.

³¹ Eichbaum, supra note 4, at 10243.

Action, found that runoff from cropland and other non-point sources is the major source of nitrogen to the nutrient enriched areas of the Bay.³² The evidence clearly establishes that these farming practices must be eliminated, and they can. They cannot be eliminated, however, if we choose not to spend the money necessary to bring about meaningful change.

D. Limitation of Industrial Toxic Waste Disposal

Throughout the industrial revolution, America permitted industrial growth and advancement at both the expense of human and environmental health. With the New Deal in the 1930s our government began taking specific steps to restrict industrial exploitation of the work force. It was not until years later that substantive steps were taken to attempt to restrict industrial exploitation of our environment.

The Federal Water Pollution Control Act Amendments of 197233 announced a federal presence in efforts to restore and maintain the "biological integrity of the nations waters" by developing technology necessary to eliminate the discharge of pollutants into those waters. The 1977 Clean Water Act 35 significantly amended the Federal Water Pollution Control Amendments of 1972. The Clean Water Act implemented an entirely new federal strategy for the control of toxics and the discharge of these materials into the nations waters, EPA "Best Available Technology Toxics", to be regulated by permits. 36 The state of Virginia under the authority of the National Pollutant Discharge Elimination System (NPDES) permit program³⁷ assumed control of the permit system in 1975 after the State Water Control law³⁸ was amended to give authority to the State Water Control Board to enforce the federal and state regulations. Under the Act, States have the authority to establish standards more stringent than EPA limitations. 39 Virginia has been reluctant to develop new and independent limitations regarding the discharge of toxic wastes into industrial waste streams and has been lax in enforcing existing standards.

Joindon & Gergen, <u>supra</u> note 29, at 221, <u>citing</u> A FRAMEWORK FOR ACTION, <u>supra</u> note 9, at 61. Non-point source pollutsants contribute 67% of the total nitrogen load to the Bay in a year of average rainfall. Farmland contributes 60-75 percent of that total figure.

³³ U.S.C. §§1251-1376 (1982).

³⁴ Watson, Point Source Water Quality Control in Virginia: Choices for the Chesapeake, 4 VA. J. OF NAT. RESOURCES L. 263, 275 (1985).

³⁵ Pub. L. No. 95-217, 91 Stat. 1566.

^{36 &}lt;u>Id.</u> at 53, 91 Stat. at 1589 (codified at 33 U.S.C. §1317 (1982)). Best Available Technology (BAT) apply to entities discharging "priority toxic pollutants" of which there are 126. These pollutants are defined in NRDC v. Train, 510 F.2d 692 (D.DC 1976). See Watson, <u>supra</u> note 34, at 277 n. 88.

Federal Water Pollution Control Amendments (1972), 33 U.S.C. §1342 (1982).

³⁸ VA. CODE ANN. §62.1-44.15(5) (1982).

³⁹ Watson, supra note 34, at 282.

The Environmental Defense Fund petitioned the EPA in 1984 to review the Virginia NPDES program charging that the Water Control Board was administratively continuing industrial and municipal permits. The State Water Control Board must strictly monitor all recipients of permits if the Bay is to be saved. Dilatorious administrative continuance of permits defies the entire process and minimizes the effect of legislation which is already years late. This intolerable defiance cannot be permitted, even if it means federal overseers doing spotchecks at permit sites on a daily basis. Virginia cannot permit the few offenders to spoil the Chesapeake Bay for us all.

III. Current Crisis

On Thursday, November 6, 1986, President Reagan vetoed an \$18 billion extension of the clean water act. This veto if not overridden by Congress, could have placed a padlock on that treasure chest of natures bounty we call the Chesapeak Bay.

Without adequate funding, adequate protection programs will not exist. Without these programs, the timeless beauty of the seven hundred miles of shoreline along the bay could cease to be timeless. Congress must address the actions of the President and Virginias must assert the necessity of saving the Bay. An \$18 billion dollar expenditure to save the nations waters is long overdue. Local governments accross the United States are dependant upon those federal dollars to improve sewer systems that are in need of repair and rehabilitation.

Every American should realize just how much this money means to our health and future. The extension of the 1972 Clean Water Act will most likely be reintroduced in January of 1987 by Senator Daniel P. Moynihan, a Democrat from New York, who is in line to become the Chairman of the Environment Subcommittee on water resources in the new Congress. With public support, this time the legislation could be successful. We as Virginians must act to provide that necessary support.

Conclusion

If we as a society are to continue to enjoy the fruits of this precious earth on which we live, it is imperative that we act in concert to preserve and repair the elements that our lives wreak havock upon. The problems which face our state in preserving the Chesapeake Bay, though national in character, can and must be addressed at the state and local level. This means that the private citizen or groups of concerned citizens can and must make their feelings known. They must utilize their voices and their votes to force state and local political leaders to address this important environmental issue. The preservation of the Chesapeake Bay is not a political issue nor a party issue. The magnitude and importance of the Chesapeake Bay to Virginia and the world transcends political bounds. Each and every living being on this planet today and those which will reside on the earth in the future are concerned parties. The problems can be solved,

but they will only be solved if states and localities begin to implement pollution control standards that exceed minimal requirements. Each state, each locality, bears the burden of doing everything within the bounds of reason to reduce the level of pollutants that enter the rivers and streams of this great state. When we reach this level of social awareness, we will have reached the point at which the Chesapeake Bay can begin a rebirth.