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OF THE VIRGINIA GENERAL ASSEMBLY

Review of the Department of Environmental Quality

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Preface

House Joint Resolution 531, approved by the 1995 General Assembly, directed JLARC to examine the "organization, operation, and performance" of the Department of Environmental Quality (DEQ) as well as "the Commonwealth's water quality and air quality programs." This report is the final one in a series of three JLARC reviews of DEQ. In January 1995, JLARC staff completed *Solid Waste Facility Management in Virginia: Impact on Minority Communities.* In January 1996, an interim report focusing on the agency's reorganization was completed. This report presents final staff findings and recommendations on the organization, operation, and performance of DEQ, focusing on air and water quality programs.

DEQ has existed for less than four years. During this time, the agency has undergone a merger of four agencies to create the new department in 1993, a significant change in organization to accommodate regionalization of the agency's operations in 1994, and a significant downsizing of the agency's staff in 1995. DEQ has also had three directors during the first three years of its existence.

Both the *Constitution of Virginia* and the *Code of Virginia* direct the department to protect the Commonwealth's "atmosphere, lands, and waters from pollution or impairment." However, due to weaknesses in inspections, monitoring, enforcement, and planning, DEQ is not currently meeting its constitutional and statutory mandates to protect State waters. While some concerns were identified regarding the department's air program, the department appears to be meeting its mandate to protect the State's atmosphere from impairment.

In addition, internal management problems have diminished DEQ's organizational capability. These problems include low employee morale and trust in agency management, problematic internal communication, and poor resource planning. The poor resource planning has resulted in inappropriate expenditures and excessive top management staff, while the agency is experiencing critical shortages of front-line staff such as inspectors and enforcement specialists.

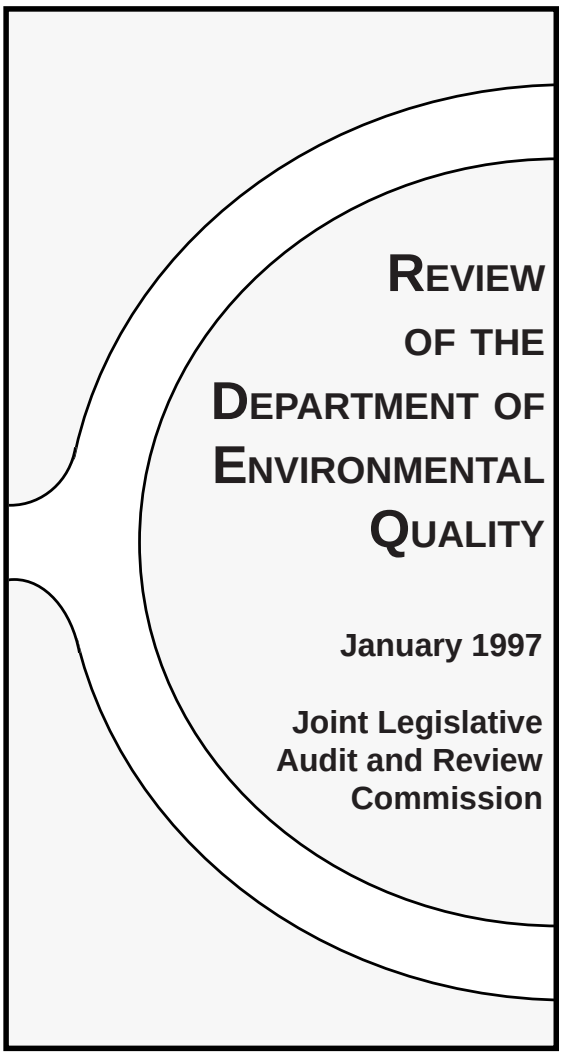
This report makes 56 recommendations to help improve DEQ's operation and performance as well as the Commonwealth's ability to protect its atmosphere and waters from pollution or impairment.

On behalf of the Commission and JLARC staff, I would like to thank the Director of the Department of Environmental Quality and his staff for their assistance during this review.

Philip A. Leone
Director

January 15, 1997

JLARC Report Summary



HJR 531, approved by the 1995 General Assembly, directs JLARC to examine "the organization, operation, and performance" of the Department of Environmental Quality (DEQ). JLARC staff completed an interim report on DEQ's reorganization in December 1995. This report, which completes JLARC's review of the agency, focuses on DEQ's operation and performance as it relates to the air and water programs.

DEQ has existed for less than four years. During this time, the agency has undergone a merger of four agencies to create the new department in 1993, a significant change in organization to accommodate regionalization of the agency's operations in 1994, and a significant downsizing of the agency's staff in 1995. DEQ has also had three directors during the first three years of its existence.

At present, DEQ is not fulfilling many of the goals that the General Assembly established for it when the agency was created in 1993. Indeed, DEQ's current focus appears to lack commitment to the agency's core statutory goals of protecting the State's environment from impairment. Most significantly, DEQ is not meeting its statutory and constitutional mandate to protect State waters from impairment. The "report card" graphic below provides an assessment of DEQ's efforts to meet the major aspects of its statutory mandate.

There are five major conclusions of this study. These conclusions are summarized on the next page, and then each is discussed further in this report summary.

DEQ Report Card: Major Agency Functions

✔ Satisfactory
✓ Satisfactory with Improvement Needed
✘ Unsatisfactory

Protecting the State's air quality	✓
Protecting the State's waters from impairment	✘
Permitting	✓
Monitoring	✓
Inspections	✘
Air enforcement	✔
Water enforcement	✘
Environmental planning/analysis	✘
Internal management	✘

- Significant weaknesses in water inspections, monitoring, enforcement, and planning have undermined DEQ's ability to protect State waters from impairment.

- The air program does not exhibit the same degree of weakness as the water program, but needs to implement the Title V permitting program, address a serious decrease in inspections, and plan for proposed new federal standards.

- The State's air quality has continued a long-term trend of improvement, but water quality indicators are at best mixed, and DEQ data does not support the contention that water quality is improving. In fact, monitoring results for fecal coliform bacteria suggest cause for concern that water quality may be worsening in some river basins.

- DEQ has failed to assess penalties, or has assessed minimal penalties, in instances of direct impairment of State waters.

- Poor leadership has resulted in low employee morale and trust in agency management, poor communication, excessive top management positions, and poor resource planning, and has severely limited DEQ's institutional capability to meet its statutory mandate.

DEQ Water Program Has Serious Deficiencies

JLARC staff's review identified significant weaknesses in DEQ's water program that have undermined the agency's ability to protect State waters from impairment:

- Water monitoring lacks sufficient biological monitoring, is inconsistent among regions (for example, Northern Virginia staff unilaterally decided not to monitor streams in Fairfax County they believe to be impaired), and lacks central office oversight.

- DEQ water compliance inspections have decreased 49 percent since DEQ's reorganization in fiscal year 1995; and all water inspections have decreased 31 percent since DEQ's reorganization, placing Virginia next to last in EPA Region III in the percentage of major sources inspected (Region III consists of the states of Delaware, Maryland, Pennsylvania, West Virginia, Virginia, and the District of Columbia).

- Virginia lacks both a laboratory certification program and a mobile laboratory, limiting the State's ability to verify the self-reported data on which DEQ's main water permitting program is based.

- DEQ water enforcement has decreased drastically, particularly with regard to formal enforcement actions. Civil penalties collected for water permit violations decreased from $327,286 in FY 1992 to $4,000 in FY 1996, and Virginia lagged behind the other 11 states surveyed by JLARC staff in the amount of water penalties collected for FY 1996 (the next lowest state collected more than eight times the amount of Virginia's water penalties).

- DEQ does not conduct adequate water resources planning and has not submitted a statutorily mandated annual water resources report for the past ten years.

- DEQ has not met its grant commitments for the water program, lead-

Water Penalties Assessed in Other States

State	1992	1993	1994	1995	1996
Georgia	$1,000,000	$1,500,000	$5,660,000	$4,300,000	$4,000,000
Pennsylvania	$2,779,908	$3,302,539	$3,470,196	$2,093,028	$ 893,292
South Carolina	$ 785,000	$ 426,800	$1,036,450	$ 344,710	$ 858,320
Florida	$ 978,585	$ 740,302	$1,453,302	$ 620,038	$ 734,391
Tennessee	$ 944,750	$ 554,575	$1,069,750	$ 873,125	$ 499,400
Alabama	$ 151,250	$ 349,400	$ 212,758	$ 165,850	$ 174,900
North Carolina	$ 407,916	$ 382,344	$ 501,193	$ 288,444	$ 138,432
Kentucky	$1,747,075	$ 538,238	$1,083,080	$ 773,235	$ 136,610
West Virginia	$ 450,000	$ 340,000	$ 450,000	$ 400,000	$ 60,000
Maryland	$ 250,000	$ 380,000	$ 184,000	$ 104,000	$ 55,967
Mississippi	$ 154,000	$ 325,542	$ 245,749	$ 34,273	$ 33,100
Virginia	**$ 327,286**	**$ 82,134**	**$ 143,666**	**$ 39,826**	**$ 4,000**

ing EPA to withhold $1.6 million in grant funds from the Commonwealth.

Some Cause for Concern with DEQ's Air Program

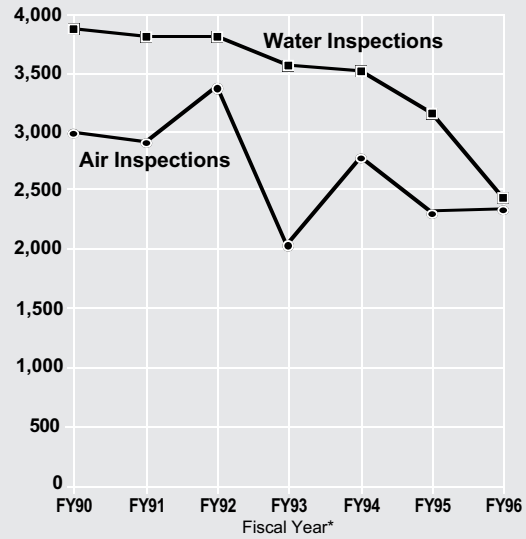
At present, DEQ appears to meet its mandate to protect the State's atmosphere from impairment. However, this review identifies several concerns regarding the air program that need to be addressed.

- Air inspections have decreased by 30 percent since 1992. Virginia is now last in EPA Region III in the percentage of major air sources inspected.

- Virginia is the only one of the 50 states whose Title V permit program has been disapproved by the EPA, and DEQ continues to delay planning and hiring staff for this program.

- DEQ's planning for improved air quality in Hampton Roads and Richmond has focused on stop-gap measures and needs to incorporate longer-term, systematic approaches for improvement, particularly if proposed new federal standards for ozone and particulate matter are adopted.

DEQ Yearly Water and Air Inspections, 1990-1996



*Fiscal years are federal for air, State for water.

Air Quality Shows Continuing Trend Towards Improvement; Water Quality Trends Are, at Best, Mixed

Since the creation of DEQ in 1993, air quality has continued to improve, part of a long-term trend set in motion by the adoption of the Clean Air Act in 1972. Two of the

Commonwealth's three remaining non-attainment areas for National Ambient Air Quality Standards (NAAQS) are now eligible for redesignation. However, to maintain the favorable trends in air quality, DEQ needs to plan for meeting proposed new federal standards for ozone and particulate matter, and for implementing the Title V operating permit program.

On the other hand, neither DEQ's own analysis nor JLARC staff's analysis of the agency's monitoring data supports the assertion that the State's water quality has improved since the creation of DEQ in 1993. There has probably been a long-term improvement in the State's surface water quality since the passage of the federal Clean Water Act in 1972. A combined State, federal, and local investment of approximately $2.1 billion dollars during this time in sewage treatment plant upgrades has helped account for much of this improvement. However, DEQ is not meeting the current challenges of the water quality program. These include the following:

- identifying the impaired waterways in the Commonwealth;
- dealing with long-term cases of non-compliance and enforcing the water pollution laws in a certain, timely, and consistent manner to ensure compliance by the regulated community;
- implementing an effective regulatory program in the State's groundwater management areas; and
- conducting water supply planning to ensure an adequate supply of drinking water as the Commonwealth continues to experience rapid population growth.

The State continues to experience difficulty in addressing long-term noncompliance and does not have a consistent, credible enforcement program, even in cases where point sources of pollution are causing impairment of waterways. In the face of significant opposition from the regulated community, DEQ continues to grapple with the role of metals and other toxic pollutants in water quality. DEQ has yet to expand its biological monitoring program sufficiently, and the agency has yet to establish a credible groundwater regulatory program. Finally, DEQ has neglected water supply planning, leaving a critical gap in the Commonwealth's environmental programs. DEQ's lack of leadership in these areas puts the State's future water quality at risk.

DEQ data and other water quality data do not support the contention that water quality has been improving statewide since the creation of DEQ in 1993. JLARC staff examined DEQ monitoring data as reported in the 305(b) report, monitoring data from the U.S. Geological Survey (USGS), DEQ's 303(d) impaired waterways list, as well as monitoring data and modeling for the Chesapeake Bay Program. Both DEQ and USGS data show mixed results for water quality in recent years, with a trend towards an increase in fecal coliform violations.

Chapter IV of this report identifies several shortcomings in DEQ's 303(d) list, which is frequently cited by DEQ management as evidence of improving water quality. These shortcomings include: inconsistency in monitoring among regional offices and lack of central office oversight of regional monitoring, failure to monitor certain streams in Northern Virginia believed by DEQ staff to be impaired, lack of metals data, and insufficient biological monitoring. In addition to the shortcomings noted by JLARC staff regarding the 303(d) list, the percentage of impaired waters identified in the 1996 version of this list has actually increased to approximately five percent from about three percent in the 1994 list. This increase in impaired waters between the 1994 and the

1996 303(d) lists is inconsistent with the assertion of improved water quality.

Poor Leadership Has Diminished DEQ's Institutional Capability

The merger of four predecessor agencies into DEQ was intended to enhance the institutional capability of the State's environmental regulatory agencies to address environmental problems. Instead, management problems at DEQ have diminished the institutional capability of the agency to meet its statutory mandate. Management weaknesses at DEQ are manifested in a number of ways, including:

- low employee morale and trust in agency management;
- poor internal communication and problematic relationships with the Office of the Attorney General and the Environmental Protection Agency;
- employee fear of retaliation for upsetting members of the regulated community;
- excess top management and management support staff;
- poor resource planning, including shortsighted space planning and shortages of staff in key areas such as enforcement and compliance staff; and
- unnecessary expenditures, such as purchase of satellite television service for four top managers, and a questionable relationship with a management consultant that was initiated on a sole source basis because the consultant understood "the ideology and tenants [sic] of the Governor's Office and the Secretary of Natural Resources."

DEQ Needs to Focus on Its Statutory Mission

DEQ needs to refocus its efforts on meeting the agency's constitutional and statutory mission. In particular, DEQ needs to improve its commitment to protecting State waters. This will require a greater commitment to conducting inspections and water resources planning. In addition, DEQ needs to improve its water enforcement program to prevent impairment of State waters, remove the economic benefit of noncompliance, and deter future violations.

DEQ also needs to focus its internal management on its statutory mandate. Rather than allocating scarce resources to excessive top management positions and other unnecessary expenditures, DEQ needs to allocate increased resources to its core statutory responsibilities of protecting the State's environment. DEQ management also needs to communicate clearly to its employees that the primary mission of the agency is to protect the environment. At present, nearly half of DEQ's employees fear for their jobs if they make a decision consistent with law or regulation that upsets a member of the regulated community. DEQ management needs to emphasize to its employees that enforcing environmental laws and regulations is the mission of the department — not a reason to fear retaliation.

Table of Contents

I. Introduction

The Department of Environmental Quality (DEQ) was created by the 1992 General Assembly, merging four existing State environmental agencies: the Department of Air Pollution Control, the Department of Waste Management, the State Water Control Board, and the Council on the Environment. The DEQ authorizing legislation was re-enacted by the 1993 General Assembly, and DEQ began operation April 1, 1993.

House Joint Resolution 531, approved by the 1995 General Assembly, mandated that JLARC review the Department of Environmental Quality (DEQ). As part of this review, JLARC was requested to study the effectiveness of the organization, operation, and performance of DEQ, with particular emphasis on DEQ's permitting, compliance, and enforcement programs and the Commonwealth's water quality and air quality programs (Appendix A). JLARC staff completed an interim report in January 1996, which focused on DEQ's reorganization. This final report focuses on the operation and performance of DEQ in meeting its constitutional and statutory mandate. Figure 1 shows the current organization of DEQ.

DEQ'S CONSTITUTIONAL AND STATUTORY MANDATE

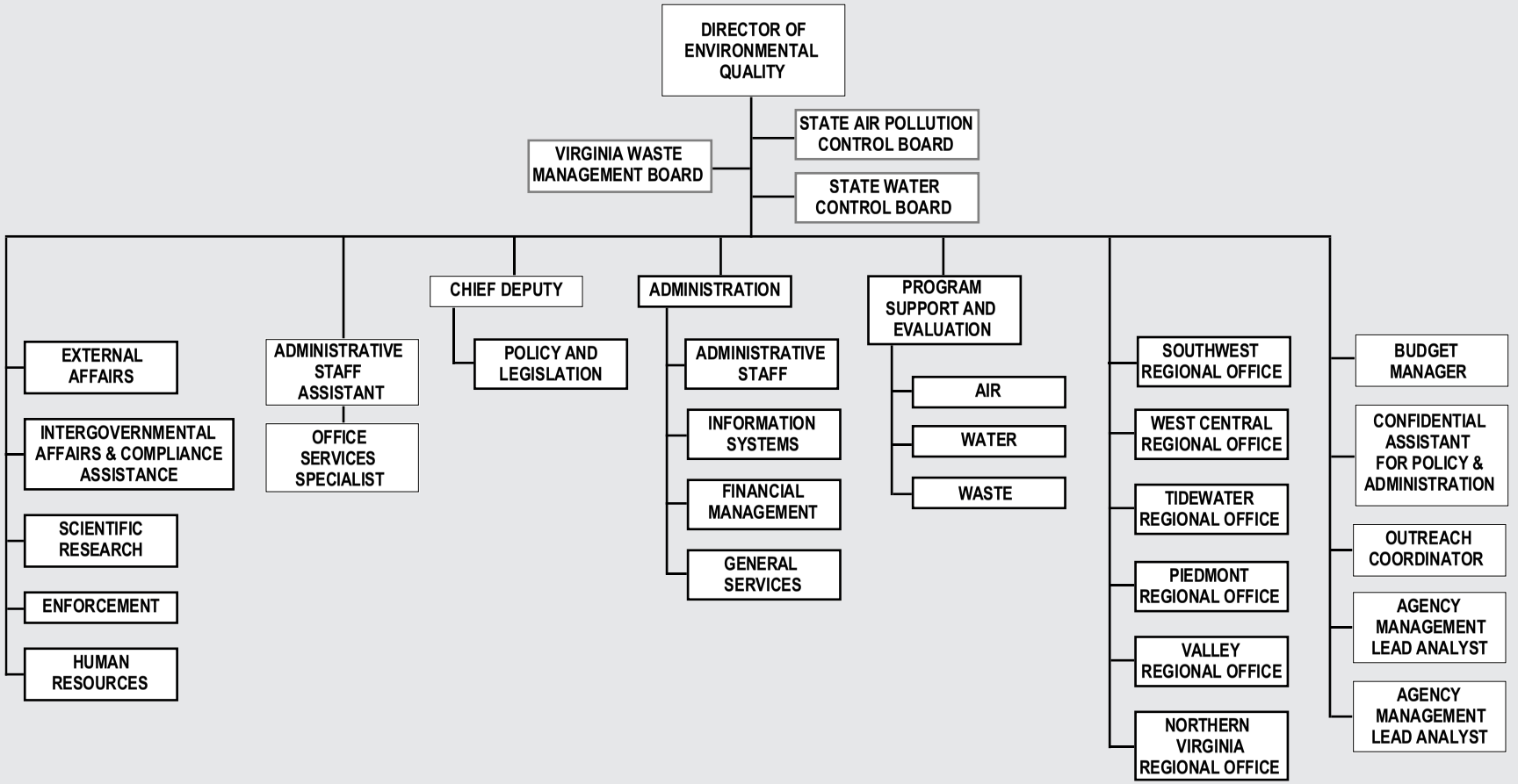
Article XI of the *Constitution of Virginia*, commonly referred to as the conservation article, sets forth a mandate to the Commonwealth's policymakers to "protect its atmosphere, land, and waters from pollution, impairment, or destruction." The 1969 Commission on Constitutional Revision, the basis for Virginia's modern Constitution, recommended adding a conservation article to the *Constitution of Virginia*, stating:

> Virginia's Constitution presently has no conservation article. The Commission proposes that such an article be added, in recognition of the growing awareness that among the fundamental problems which will confront the Commonwealth in coming years will be those of the environment.
>
> In the early days of the Republic, it was easy to take natural resources for granted. In the latter half of the Twentieth Century, it is not so easy. Growing population, urbanization, industrial uses, recreational needs, and other forces have given rise to the necessity for some hard thinking about the adequacy and quality of the environment and resources of the Commonwealth.

Among State agencies, DEQ is the principal agency charged with meeting this constitutional responsibility. DEQ's statutory mandate echoes the constitutional mandate, stating in §10.1-1183 that DEQ is "to assist in the effective implementation of the Constitution of Virginia by carrying out State policies aimed at conserving the

Figure 1

Organization of the Department of Environmental Quality



Source: JLARC staff graphic based on DEQ organizational charts.

Commonwealth's natural resources and protecting its atmosphere, land, and waters from pollution."

Article XI of the *Constitution of Virginia*

This article was adopted as part of the Virginia Constitution of 1971. The article has three sections. The first two sections were added in 1971. The third section was a provision in the Virginia Constitution prior to 1971. Sections I and II apply broadly to the protection of the environment while Section III applies specifically to the protection of natural oyster beds. Section III is within the purview of the Virginia Marine Resources Commission, not DEQ, so it is not discussed in this review.

Section I of Article XI. Section I is the core of Article XI. It provides a formal statement of public policy regarding the protection of the State's environment and natural resources. The first section states:

> To the end that the people have clean air, pure water, and the use and enjoyment for recreation of adequate public lands, waters, and other natural resources, it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources, its public lands, and its historical sites and buildings. Further, it shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth.

Section II of Article XI. Section II of Article XI establishes the authority for the General Assembly to give legislative effect to the environmental policies established by Section I. This provision states:

> In the furtherance of such policy, the General Assembly may undertake the conservation, development, or utilization of lands or natural resources of the Commonwealth, the acquisition and protection of historical sites and buildings, and the protection of its atmosphere, lands, and waters from pollution, impairment, or destruction, by agencies of the Commonwealth or by the creation of public authorities, or by leases or other contracts with agencies of the United States, with other states, with units of government in the Commonwealth, or with private persons or corporations. Notwithstanding the time limitations of the provisions of Article X, Section 7, of this Constitution, the Commonwealth may participate for any period of years in the cost of projects which shall be the subject of a joint undertaking between the Commonwealth and any agency of the United States or of other states.

This section gives the General Assembly broad authority to enact legislation in furtherance of the policies established by Section I of the article. The second sentence of the section gives the General Assembly the authority to enter into long-term agreements

that might require a financial commitment beyond the biennium in which the agreement is entered.

DEQ Statutory Mandate

The *Constitution of Virginia's* language regarding the State's duty to protect the environment is explicitly referenced in DEQ's statutory mandate. Section 10.1-1183 of the *Code of Virginia* created DEQ and established 11 purposes of the agency:

1. To assist in the effective implementation of the *Constitution of Virginia* by carrying out State policies aimed at conserving the Commonwealth's natural resources and protecting its atmosphere, land, and waters from pollution.

2. To coordinate permit review and issuance procedures to protect all aspects of Virginia's environment.

3. To enhance public participation in the regulatory and permitting processes.

4. To establish and effectively implement a pollution prevention program to reduce the impact of pollutants on Virginia's natural resources.

5. To establish procedures for, and undertake, long-range environmental program planning and policy analysis.

6. To conduct comprehensive evaluations of the Commonwealth's environmental protection programs.

7. To provide increased opportunities for public education programs on environmental issues.

8. To develop uniform administrative systems to ensure coherent environmental policies.

9. To coordinate State reviews with federal agencies on environmental issues, such as environmental impact statements.

10. To promote environmental quality through public hearings and expeditious and comprehensive permitting, inspections, monitoring, and enforcement programs, and provide effective service delivery to the regulated community.

11. To advise the Governor and General Assembly, and, on request, assist other officers, employees, and public bodies of the Commonwealth, on matters

related to environmental quality and the effectiveness of actions and programs designed to enhance that quality.

In addition to the statutory mandate in §10.1-1183 of the *Code of Virginia*, DEQ also retains the powers and duties assigned to its predecessor agencies. The two main purposes of the agency can be broadly summarized as:

- regulating point sources of air and water pollution as well as regulating solid and hazardous waste; and

- coordinating long-range environmental planning for the Commonwealth.

DEQ Operationalization of Its Statutory Mandate

There are two documents that have impacted the way that DEQ has been led, and both have a different focus of the agency's mission than the statutory mandate. The first document is the five principles of the Secretary of Natural Resources. The second document is the agency's mission statement.

Secretary of Natural Resources' Five Principles. The position of Secretary of Natural Resources was created by the General Assembly in 1986. Previously, Virginia's economic development and natural resources agencies had jointly reported to the Secretary of Commerce and Resources. The current Secretary of Natural Resources has developed five "guiding principles" to articulate the Secretary's philosophy of environmental management and natural resources policy. The Secretary of Natural Resources' five principles are:

- People are our most important natural resource.

- Personnel is policy.

- A growing economy and a healthy environment are mutually dependent.

- Renewable natural resources are inherently dynamic, resilient, and responsive to conservation management.

- Excessive federal mandates and regulations are injurious to the environment.

DEQ Mission Statement. DEQ articulates its own conception of its statutory mission in its mission statement. The agency's mission statement, as of the preparation of this report, was:

> Under the direction of the Secretary of Natural Resources, DEQ strives to provide efficient, cost-effective services in the Commonwealth of Virginia that promote a proper balance between environmental improvement and economic vitality.

This statement appears to establish a dichotomy between economic development and environmental improvement that is at odds with the Secretary of Natural Resources' guiding principle that "a growing economy and a healthy environment are mutually dependent." A DEQ responsibility for services promoting economic vitality is not in DEQ's statutory mandate or in the statutory authority for the Secretary of Natural Resources. It is noted that DEQ's current strategic plan has proposed a revised mission statement in draft form. This is discussed further in Chapter VI.

ORGANIZATIONAL CHANGES AT DEQ

DEQ has gone through five major organizational phases since its creation in April 1993. The first phase lasted from the agency's creation in April 1993 until the appointment of a new agency head by the Governor in June 1994. The second phase began with the second DEQ director's appointment and lasted until September 1, 1994 when regional directors were appointed for each of DEQ's six newly created regions. The third phase ran from September 1994 until April 1995, when a major reorganization of central office staff, including 17 layoffs, was announced. As part of this reorganization, significant responsibilities and authority were decentralized to DEQ's six regional offices. DEQ entered the fourth phase of its organizational evolution in May 1995. The fourth phase was characterized by further decentralization of programs and responsibilities to the regional offices as well as plans to privatize and out-source some functions now performed by State employees. The fifth and current phase began with the appointment of the current DEQ director in June 1996 and has included collocation of all of the agency's regional offices and efforts to develop a strategic plan. Exhibit 1 shows a time-line of major organizational changes at DEQ since June 1994.

PRIOR JLARC REVIEWS

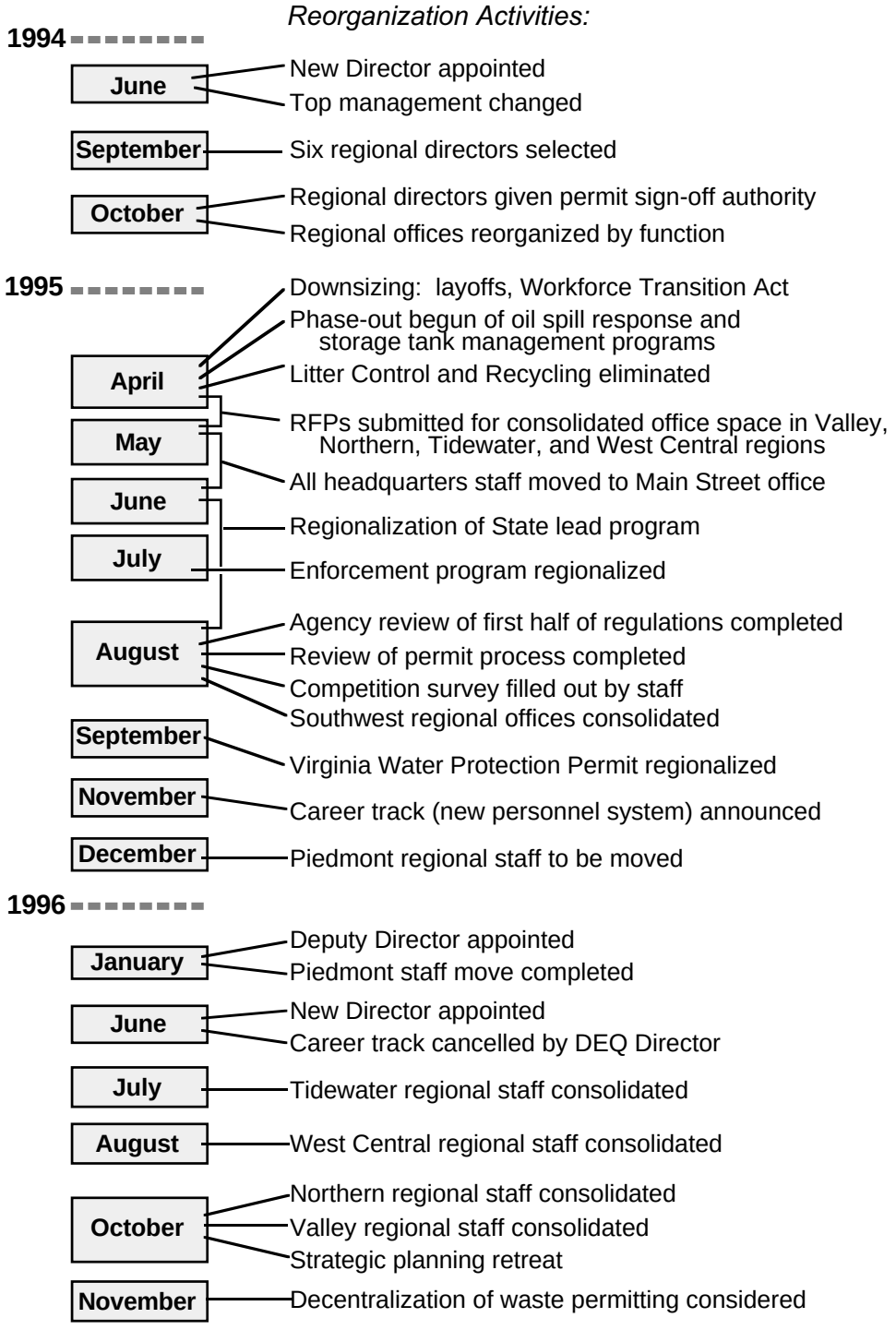
State environmental agencies and programs have been reviewed in various levels of detail several times during the past twenty-five years. These studies are summarized in Chapter I of JLARC's 1996 interim report on DEQ. The two most recent JLARC reports regarding DEQ are discussed below.

1995 JLARC Study: *Solid Waste Facility Management in Virginia*

In 1993, the General Assembly approved House Joint Resolution 529 directing JLARC to study practices related to the siting, monitoring, and clean-up of both hazardous and non-hazardous solid waste facilities. While the specific focus of this study was these activities' impact on minority communities, JLARC also examined the role of DEQ in the oversight of solid waste disposal facilities.

Exhibit 1

Timeline of DEQ's Organizational Changes



Note: Many of the activities shown were concurrent. Accuracy of chart is limited to the month activity was begun or completed.

Source: JLARC staff interviews with DEQ employees; JLARC review of DEQ correspondence.

The JLARC report found significant gaps in DEQ's central office oversight, as well as problems in the solid waste inspection program administered by regional staff. Among the causes of these problems, the JLARC report cited shortages among inspectors, lack of central office guidance, and an inefficient and weak enforcement process for solid waste issues. JLARC recommendations included substantially improving DEQ's oversight program concerning these areas, a greater attempt at involving the public in the siting process, and the development by DEQ managers in the enforcement and compliance units of a plan to identify all inactive landfills which are out of compliance with State closure regulations so those sites could be officially closed and properly monitored.

1996 JLARC Interim Report: *Review of the Department of Environmental Quality*

The focus of the JLARC interim report on DEQ was the then on-going reorganization within the department. The interim report enumerated several areas of concern with DEQ procedures and policies. JLARC noted a lack of strategic planning regarding the DEQ reorganization. The report also cited problems arising from DEQ's personnel management practices. Employee morale and trust in DEQ agency management were low and concerns were raised over agency hiring practices. Finally, employees had mixed views about the effectiveness of the DEQ reorganization.

JLARC REVIEW

HJR 531 mandated a review of the permitting, compliance, inspection, and enforcement programs of the department, as well as the functions mentioned earlier. The 1996 JLARC interim report analyzed the efficacy of DEQ's reorganization. This report focuses on the operation and performance of DEQ in accomplishing its statutory mandate. This section provides an overview of the study issues and research activities used in this report.

Study Issues

In examining DEQ's performance, JLARC staff identified several issues for examination. These include:

- What is the status of DEQ's regulatory review, what changes in DEQ regulations have been proposed, and what will be the potential effect of these changes?

- Are DEQ's permitting programs efficient and effective in protecting the environment?

- Are DEQ's inspection and monitoring programs adequate to ensure that permitted sources comply with the provisions of their permits and that air and water quality standards are maintained?

- Is DEQ's enforcement program appropriately designed and implemented to address non-compliance on the part of permit holders and other potential polluters?

- Is DEQ appropriately organized, staffed, and managed to fulfill its statutory mandate?

- What is the current status of Virginia's air and water quality, and how have air and water quality changed over time?

Research Activities

Several types of research activities were conducted as part of this report. This research was completed between January and October 1996. These activities include: (1) structured in-person interviews, (2) surveys, and (3) data and file reviews.

Structured Interviews. Approximately 260 structured interviews were conducted with DEQ staff and other persons involved in environmental regulation during the two phases of the JLARC study. Current DEQ central office staff and regional technical staff were interviewed, including permit writers, inspectors, and enforcement officials. JLARC also spoke with staff from the Office of the Attorney General, the Virginia Department of Transportation, the Department of Mental Health, Mental Retardation, and Substance Abuse Services, and the Department of Health. Several staff from the U.S. Environmental Protection Agency (EPA) Region III were interviewed concerning DEQ. In addition, members of Virginia's industrial and business communities, local government representatives, and environmental citizen groups were interviewed by JLARC staff. The current and previous Secretaries of Natural Resources, the current and previous directors of the Department of Environmental Quality, current and former members of the citizen boards, and all six regional directors were also interviewed.

Surveys. JLARC staff utilized three types of surveys in researching this report. JLARC staff utilized a mail survey of DEQ employees and a telephone survey of environmental quality departments in other states. In addition, the results were considered from a survey done for a concurrent JLARC study on the satisfaction levels of the constituents of various natural resources agencies in Virginia, including DEQ.

Employee surveys have been used in previous JLARC management studies of the Department of Education (1991), the Department of Taxation (1992), and the Department of Personnel Training (1993). In the fall of 1995, a DEQ employee survey was conducted for the interim report on the DEQ reorganization. For this final report,

a second DEQ employee survey was administered. The survey re-examined several of the previously identified issues from the interim report, to assess the status of these issues a year after the substantial completion of DEQ's reorganization.

The employee survey utilized in this final report was sent to 301 staff selected from the six regions and central office, as identified from organizational charts provided to JLARC by DEQ dated June 1, 1996. The sampling procedures for this report were built upon those in the 1996 interim report. The sample size of those receiving questionnaires was increased for this report. All DEQ employees who received a questionnaire previously were re-sampled. In addition, certain major occupational groups of DEQ were over-sampled: permit writers, inspectors, and enforcement specialists. Over-sampling was performed so JLARC staff could make separate comparisons among the various occupation groups. However, all responses were weighted so DEQ occupation groups had the appropriate influence on calculations of agency-wide percentage results. As a whole, the sample represented approximately 61 percent of all grade 13 or below DEQ employees, according to the organizational chart provided by DEQ. A total of 255 of the 301 surveys administered were returned for a response rate of almost 85 percent. (Appendix B presents a full discussion of the survey methodology.)

An informational survey of other states was used to examine how different environmental quality programs administer their permitting, compliance, monitoring, and enforcement duties. The sample consists of the 11 states in addition to Virginia which comprise EPA's Regions III and IV, in general the Southeast and mid-Atlantic portions of the United States. State environmental programs were divided into air, water, hazardous waste, and Superfund sections, and each section was faxed an information request. The surveys were administered to the director of the given section. Responses were received from all 11 other states in addition to data gathered on Virginia.

Data and File Review. JLARC staff reviewed all available major air permits, Prevention of Significant Deterioration (PSD), and state operating permit files and all available major Virginia Pollution Discharge Elimination System (VPDES) files. In addition, JLARC staff also examined two percent of all minor air and water permit files. Permit files were reviewed in order to examine DEQ permitting, inspection, and enforcement practices (all documentation related to these activities are contained within the permit file). Databases used by DEQ to track permits and other materials were also examined. In addition, a major review was conducted of air and water quality indicators for various time periods between 1976 and 1995, depending on data availability. The data analysis involved comparisons of DEQ air and water quality monitoring data over time. Finally, general literature on environmental programs was reviewed for background purposes as was literature on organizational structures and management.

REPORT ORGANIZATION

This report is organized into seven chapters, including this introduction. Chapters II through V follow the general process by which regulations become effective

and then are to be implemented by DEQ. Chapter II evaluates the changes and proposed changes by DEQ to the statutory and regulatory requirements regarding environmental protection. Chapter III reviews DEQ's permitting programs, which are used to set specific conditions, derived from regulations, on potential polluters. Chapter IV examines the role and adequacy of the monitoring and inspection programs of DEQ, which are conducted to assess whether there is compliance with the regulations and the terms of the permits. Chapter V discusses DEQ's enforcement program, which is supposed to ensure that there is compliance. Chapter VI examines management and organizational issues within DEQ. Chapter VII concludes the report with a review of the status of Virginia's air and water quality challenges and DEQ's performance in meeting these challenges.

II. Regulation Development

As a regulatory agency, the development of regulations is an important part of the work of the Department of Environmental Quality (DEQ). JLARC staff's review identified two concerns regarding DEQ's regulation development: (1) problematic draft regulations, and (2) insufficient interaction between DEQ staff and the three citizen boards that promulgate the agency's regulations, and inconsistent authority, policies, and procedures among the citizen boards.

TWO DRAFT DEQ REGULATIONS ARE PROBLEMATIC

Two draft regulations being developed by DEQ staff appear problematic. The state operating permit regulation is being written to remove a requirement that the permit be renewed periodically, potentially lessening the permit's effectiveness as a substitute for Title V of the Clean Air Act Amendments of 1990. The voluntary remediation program is being used to accommodate National Priorities List sites, which may not have been contemplated by the General Assembly in adopting the statute.

State Operating Permit Regulation is Being Revised to Not Require Renewal

The state operating permit regulation is a permit alternative for relatively small sources of air pollution (those emitting less than one hundred tons annually of any criteria pollutant and less than ten tons annually of any toxic pollutant). This alternative enables smaller sources of air pollution to avoid having to obtain a permit as outlined in Title V of the Clean Air Act Amendments of 1990. Title V assumes a maximum potential to emit for a source of air pollution that is based on maximum production of 8,760 hours per year. A state operating permit (§120-08-04 of the *Regulations for the Control and Abatement of Air Pollution*) sets a federally enforceable limit on the emissions for a source of air pollution, therefore the Title V threshold is not triggered.

Title V permits are meant to consolidate all of the various permits that an owner may have obtained over time for new or modified sources of air pollution. Title V permits are also renewable every five years, a new concept for the air pollution control program, although most types of water permits must be renewed every five years. The current state operating permit regulation requires that state operating permits be renewed every five years, just like Title V permits. Renewing permits periodically allows for the incorporation into a permit of new regulatory and legal requirements, as well as new technology.

However, DEQ's draft revisions to the state operating permit regulation would remove the requirement that state operating permits be renewed. This would remove the

opportunity for systematically reviewing the state operating permits to incorporate legal and regulatory changes as well as new technology. DEQ's position appears to be that its staff could determine when, if ever, a state operating permit needs to be renewed. However, the mandatory periodic review now contained within the state operating permit regulation appears to be the best mechanism for insuring systematic, regular review of permits. The State Air Pollution Control Board should retain the concept of regularly renewing state operating permits.

Recommendation (1). **The General Assembly may wish to revise the *Code of Virginia* to require that state operating permits be renewed every five years.**

Voluntary Remediation Regulation

In 1995, at the request of the administration, the General Assembly approved HB 1847 and SB 796, establishing a voluntary remediation program for the Commonwealth. The statute directs the Virginia Waste Management Board to "promulgate regulations to allow persons who own, operate, have a security interest in, or enter into a contract for the purchase of contaminated property to voluntarily remediate releases of hazardous substances, hazardous waste, solid wastes or petroleum." The statute states that only property not "clearly mandated" by a federal or state law to conduct remediation are eligible for the voluntary remediation program. Facilities completing the voluntary remediation program are exempt from any State enforcement action related to contamination on the site.

During the same time that the voluntary remediation program was being considered by the General Assembly, Congress approved the 1995 Recissions Bill which contained a provision requiring concurrence of the relevant state governor to list a contaminated site on the National Priorities List (NPL) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or as it is commonly known, Superfund). The NPL is the list of Superfund sites, commonly viewed as the nation's most contaminated hazardous waste sites. In November 1995, acting on behalf of the Governor, the Secretary of Natural Resources objected to the listing of six sites on the National Priorities List: Beverly Exxon, Norfolk Intercoastal Steel, Tidewater Community College (formerly Nansemond Ordnance Depot), U.S. Army Vint Hill Farms Station, and U.S. Army Woodbridge Research Facility. The Secretary of Natural Resources later objected to the listing of the Radford Army Ammunition Plant.

In interviews with JLARC staff, DEQ waste division staff and the Secretary of Natural Resources stated that the sites not listed on the NPL will be addressed through the voluntary remediation program. It is not clear, however, that this program is adequate to address sites that are eligible for the NPL. The statute and subsequent draft regulations creating the voluntary remediation program place several limits on the program that make it of questionable efficacy for addressing severely contaminated sites such as those proposed for listing on the NPL. These limitations include:

- a limit of the lesser of $5,000 or one percent of cleanup costs on registration fees for the program (the program's only source of funding),

- correspondingly limited DEQ oversight of cleanup (DEQ staff estimate that no more than 185 hours of staff time are available per site in the program),

- the program is entirely voluntary, not regulatory, and cleanup standards are determined by the site owner, with minimal input from DEQ staff.

It is not clear whether or not the General Assembly contemplated including NPL-caliber sites when it adopted the voluntary remediation statute, as the State did not then have discretion to prevent sites from being listed on the NPL. The General Assembly may wish to clarify its intent in this regard.

Recommendation (2). **The General Assembly may wish to consider amending §10.1-1429.1 of the *Code of Virginia* to clarify its intent regarding the applicability of the voluntary remediation program to hazardous waste sites pre-scored for the National Priorities List.**

DEQ CITIZEN BOARD PROCESS NEEDS IMPROVEMENT

DEQ's citizen boards, whose members are appointed by the Governor, promulgate the agency's regulations. JLARC staff identified two broad areas for potential improvement with regard to DEQ's citizen boards. The first is in improving DEQ staff interaction with the citizen boards. The second is in providing for more consistency of authority and procedure among DEQ's three citizen boards.

DEQ Staff/Board Interaction Needs Improvement

JLARC staff interviewed two members of each of the citizen boards, as well as DEQ staff involved in regulation development. Based on these interviews and JLARC staff's observation of board meetings, it appears that DEQ staff's interaction with the citizen boards needs improvement. In particular, board members expressed a concern about limited interaction with the staff and limited opportunity to gain needed information. DEQ staff expressed a belief that board members need additional training.

Board members interviewed indicated that, prior to the creation of DEQ, they had significantly more interaction with agency staff than is the case now. In particular, board members indicated that they had a greater opportunity to ask questions of agency staff about the voluminous briefing materials that they receive for each meeting.

Board members also expressed interest in providing feedback to DEQ staff on relevant portions of the agency's strategic plan currently under development by DEQ

staff. One board member commented that this would provide a useful forum for public involvement in DEQ's long-range planning, consistent with DEQ's statutory charge "to enhance public participation in the regulatory and permitting processes." Board members also expressed frustration about not being consulted regarding major agency decisions. For example:

> *The chairman of the State Water Control Board commented that the board was not notified of the State's intent to file suit against an alleged violator, even though there was a board meeting within a week of the date the suit was filed. The chairman commented that this was the first time in the member's twelve years on the board that such action was taken without first notifying the board.*
>
> *** * ***
>
> *One member of the State Air Pollution Control Board expressed concern that the board was not consulted regarding the State's lawsuit against the federal government, seeking to overturn portions of the Clean Air Act Amendments of 1990.*
>
> *** * ***
>
> *The chairman of one of DEQ's citizen boards commented that, during his time as chairman, he had almost no interaction with either the DEQ director or the Secretary of Natural Resources.*

Board members also commented that the annual joint meetings, mandated by statute, of the three citizen boards are not particularly helpful, as nothing of substance is addressed at these meetings. The chairman of one of the citizen boards suggested that reviving the concept of the now defunct Council on the Environment might be useful for providing interaction between agency staff, the Secretary of Natural Resources, and board members. This concept involved regular public meetings between the chairpersons of each citizen board, the agency head, and the Secretary to discuss policy issues. These types of meetings could provide a useful forum for public participation, an opportunity for multimedia concerns to be addressed, and a mechanism for exchange of information between DEQ staff and the citizen boards. In addition, these meetings could provide a public forum for DEQ to address its statutory mandate to conduct long-range environmental planning.

Recommendation (3). **DEQ should seek to improve its interaction with the citizen boards. DEQ should: (1) arrange regular meetings between the chairmen of the citizen boards and the agency head and senior staff, (2) develop a mechanism for board members to pursue questions regarding board agenda items prior to the meeting, and (3) present relevant portions of its strategic plan to the citizen boards for review and comment.**

Recommendation (4). **DEQ should consider holding semiannual public meetings between the chairman of the State Water Control Board, State Air Pollution Control Board, Virginia Waste Management Board, DEQ director, and the Secretary of Natural Resources. These meetings should include, but not be limited to, discussions of multi-media environmental issues and long-range environmental planning.**

Authority of DEQ's Citizen Boards Is Inconsistent

When DEQ was created by the General Assembly in 1992, there were no significant revisions made to the statutes creating the State Air Pollution Control Board (SAPCB), the State Water Control Board (SWCB), and the Virginia Waste Management Board (VWMB). Similarly, the boards' operating procedures were not significantly revised as a result of the consolidation of DEQ's predecessor agencies. Consequently, DEQ's three citizen boards function quite differently in terms of authority and procedure.

Authority of DEQ's Citizen Boards Varies. There are two principal areas of inconsistency in the authority of DEQ's citizen boards. The SWCB approves all water administrative enforcement actions taken by DEQ. On the other hand, neither the SAPCB nor the VWMB has any involvement in enforcement issues. Both the SWCB and the SAPCB issue permits in some circumstances, but the VWMB is not involved in permitting.

The SWCB's involvement in enforcement actions has the advantage of offering a more public forum for enforcement actions. However, there are two disadvantages to the SWCB's involvement in enforcement. The first is that administrative enforcement actions taken by DEQ against violators of water pollution control laws and regulations must wait for the next meeting of the SWCB (the board meets quarterly) before they can be finalized. In contrast, administrative enforcement actions against air or waste violators can be finalized more quickly. As a result, DEQ's water staff cannot move as quickly to bring a violator into compliance, one of DEQ's principal goals.

The second disadvantage of the SWCB's involvement in enforcement actions is that a citizen board, by its nature, is composed of persons who may not be familiar with the laws and regulations applicable to a given enforcement action. This can lead to the board acting inappropriately in some instances. For example:

> *At the May 1996 meeting of the State Water Control Board, an attorney for a large company that had signed 1991 and 1994 administrative consent orders persuaded the Board to defer staff enforcement of these consent orders. These consent orders were not on the board's agenda and were not properly before the board for consideration. The discussion of the 1991 and 1994 consent orders arose when the attorney for the company objected to a consent order for a local sewage treatment plant to which the company's consent order required it to connect. Despite the*

> *objections of DEQ staff, the board acted on the company's request, deferring action for a month and allowing the company a delay in connecting to the local sewage treatment authority. The matter was resolved at a special board meeting the next month that had to be called to resolve the situation. The board essentially acted on a matter not properly before it, temporarily undercut the enforcement authority of its staff, and allowed itself to be manipulated by a permit holder's attorney.*

One means of preserving the benefit of the SWCB's public forum for enforcement actions, while addressing the concerns about its role in enforcement, would be for the General Assembly to amend the *Code of Virginia* to require that all administrative enforcement actions taken by DEQ staff be reported as information only items to the applicable citizen board. DEQ staff could also be required to place a public notice for all administrative enforcement actions in the *Virginia Register* and an applicable local newspaper.

Permitting Role of DEQ's Citizen Boards Is Inconsistent. The SWCB and the SAPCB have authority to issue permits. This authority to issue permits is delegated to the director in certain instances. All authority for waste permit decisions is vested in the director. The exact circumstances of when water and air permits must be issued by the respective boards also varies according to the specific delegation of authority to the director. For example, the SWCB issues all permits where a public hearing is held, while the SAPCB issues all permits deemed controversial according to the Board's procedure.

While the practices of the SWCB and SAPCB are inconsistent regarding permit issuance, both offer the opportunity for citizens to bring their concerns about controversial permits to a citizen board. Thus, the boards provide a useful forum for public participation in the permitting process, one of the statutory requirements for DEQ. The General Assembly may wish to standardize this process for all three boards.

Recommendation (5). **The General Assembly may wish to amend §62.1-44.15 of the *Code of Virginia* to remove the requirement that the State Water Control Board approve all administrative water enforcement actions and to delegate final authority for such actions to the director of DEQ. The General Assembly may also wish to amend the *Code of Virginia* to require that for each administrative enforcement action taken, DEQ staff should: (1) place a notice of the administrative enforcement action in the *Virginia Register,* (2) place a notice of the administrative enforcement action in a newspaper of general circulation in the community where the violation occurred, and (3) inform the applicable citizen board of the administrative enforcement action at its next regularly scheduled meeting.**

Recommendation (6). **The General Assembly may wish to revise the *Code of Virginia* to adopt a standardized process for when environmental permits must be issued by the applicable citizen board and when permit issuance can be delegated to the director of DEQ. The General Assembly may**

wish to adopt the State Water Control Board's approach of having the board issue permits in all cases where a public hearing is conducted.

Procedures of DEQ's Citizen Boards Are Inconsistent

During this review, JLARC staff noted that a number of the procedures employed by DEQ's citizen boards are inconsistent. Most of these inconsistencies stem from statutory requirements unique to one of the boards. For example:

> *In the case of a public hearing on a water pollution issue, a member of the SWCB acts as hearing officer. This practice is not followed by the other two citizen boards.*
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> * * *
>
> *By statute, a permit issued by the SWCB (or DEQ staff on its behalf) must be sent by certified mail. Air and waste permits are sent in the regular mail. DEQ has not reported any difficulty from using regular mail for air and waste permits.*
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> * * *
>
> *DEQ's three citizen boards each have different requirements for board size and frequency and timing of meetings. For example, the SAPCB must meet quarterly, the SWCB must meet four times per year (all four meetings could theoretically be in the same month), and the VWMB meets upon the request of the chairman. According to a DEQ internal memo on board inconsistencies "the specific meeting requirements of the Air and Waste Boards have resulted in meetings being scheduled solely to satisfy the meeting requirements with a less than full agenda and in holding more meetings than would otherwise be required in order to meet both scheduling requirements and rule-making needs."*
>
> * * *
>
> *The State Water Control Law (§62.1-44.26) requires a "verbatim" record of all proceedings and hearings before the SWCB. Section 10-1.1305 of the* Code of Virginia *requires that an accurate record of the proceedings of the SAPCB be maintained (the agency's practice has been to prepare minutes). There is no statutory record keeping requirement for the VWMB.*
>
> * * *
>
> *Section 10.1-1313 of the* Code of Virginia *authorizes the creation of the State Advisory Board on Air Pollution, to act as an advisor to the State*

Air Pollution Control Board. There is no similar entity for the SWCB or VWMB. According to an internal DEQ issue paper, in the past ten years, only two of the recommendations of the State Advisory Board have been utilized by the agency. The annual cost of the State Advisory Board is estimated at $15,000.

While any given instance of inconsistency is not necessarily a large problem for DEQ staff, the totality of inconsistency among the three citizen boards potentially frustrates DEQ's efforts to develop as a unified agency. All six of DEQ's regional directors agreed, in interviews with JLARC staff, that consistency among the citizen boards needs to be improved. The agency director agreed in principle, but stated that he had not had time to focus on this issue yet, and he observed that legislative changes may be required. The General Assembly may wish to consider revising the *Code of Virginia* to provide, to the degree practical, for consistency among the DEQ citizen boards.

Recommendation (7). **The General Assembly may wish to consider revising the *Code of Virginia* to provide, to the degree practicable, for consistency in procedure among the Department of Environmental Quality's three citizen boards. The General Assembly may wish to consider: (1) allowing all DEQ permits to be sent by regular mail, (2) allowing all DEQ citizen boards to meet on the call of the chairman, (3) standardizing record keeping requirements for the citizen boards to require that an accurate account be kept of all proceedings, and (4) eliminating the State Advisory Board for Air Pollution and creating a DEQ-wide advisory board to examine multi-media pollution issues.**

III. Permitting

One of DEQ's major responsibilities is to review and issue permits that are required under federal and State law (a brief summary of DEQ's permit programs can be found in Appendix C). A permit is an enforceable contract between the pollution discharger and the Commonwealth which summarizes how the laws and regulations of the State and federal government apply to the particular facility for which a permit is being attained. In terms of protecting environmental quality, a permit is effective only to the extent that a permittee is in compliance with the terms of the permit. Therefore, the effectiveness of DEQ's permitting program cannot be fully determined without considering DEQ's compliance, monitoring and enforcement activities, as are assessed in Chapters IV and V of this report.

The air and water permitting programs at DEQ were reviewed for this study. JLARC staff conducted an analysis of DEQ's permit processing times for air and water permits, and the number of expired water permits. Permit processing times vary considerably. In recent years, permit processing times have decreased overall in the water permit program and increased overall in the air permit program. Variance in average permit processing times is primarily attributable to the following factors: staffing, negotiations with the permittee, public participation, the volume of permit applications, use of general permits, and changes in regulatory requirements.

Although permit processing times appear to be mixed, representatives of the regulatory community surveyed for this study expressed general satisfaction with the services provided to them by the reorganized DEQ. However, some of their comments are a source of concern with regard to DEQ's definition of improved customer service. Specifically, there is a concern that improved customer service is being defined as not upsetting the regulated community and not being as firm in negotiations. This approach risks moving DEQ too far in the direction of being a "service" rather than a regulatory agency, thereby compromising its constitutional responsibility to the ultimate customers — the citizens of Virginia and the environment.

As noted in JLARC's 1996 interim report on DEQ, the agency's 1995 reorganization substantially impacted the air and water permit programs. A major component of the reorganization focused on empowering regional staff to make permit decisions with less oversight from the central office, and making DEQ more of a "service" agency. Providing permits in a timely fashion could be considered a service of the agency, and DEQ sought to improve permit processing times. DEQ's central office did not, however, put the proper mechanisms in place to ensure that permits are written and issued consistently across the State. DEQ management needs to develop a strong air and water audit program in the central office to ensure consistency.

The regional offices received new program responsibilities as part of the reorganization. The Virginia Water Protection (VWP) permit program was transferred to the regions from the central office. Regional staff were also put in charge of some

permit support functions like air quality modeling which had previously been performed by the central office staff. According to survey responses and interviews with DEQ permit writers, it appears that the regions were given these new responsibilities without appropriate preparation and training. The lack of training has contributed to the problem of inconsistency among the regions; and in at least one instance has led to an inappropriate application of the VWP permit program.

Virginia meets EPA standards for the number of water permits allowed to expire and achieves prompt reissuance of permits more effectively than other states in the same EPA region. As of June 1996 only 11 major Virginia Pollutant Discharge Elimination System (VPDES) permits and 19 minor VPDES permits were expired. Permit expirations are not yet an issue for the air division at DEQ because the air permits now in place do not expire. This will change with the implementation of the Title V operating permit program. Title V of the 1990 Clean Air Act amendments requires the issuance of operating permits to all major sources of air pollution. These permits will have to be re-issued or updated every five years.

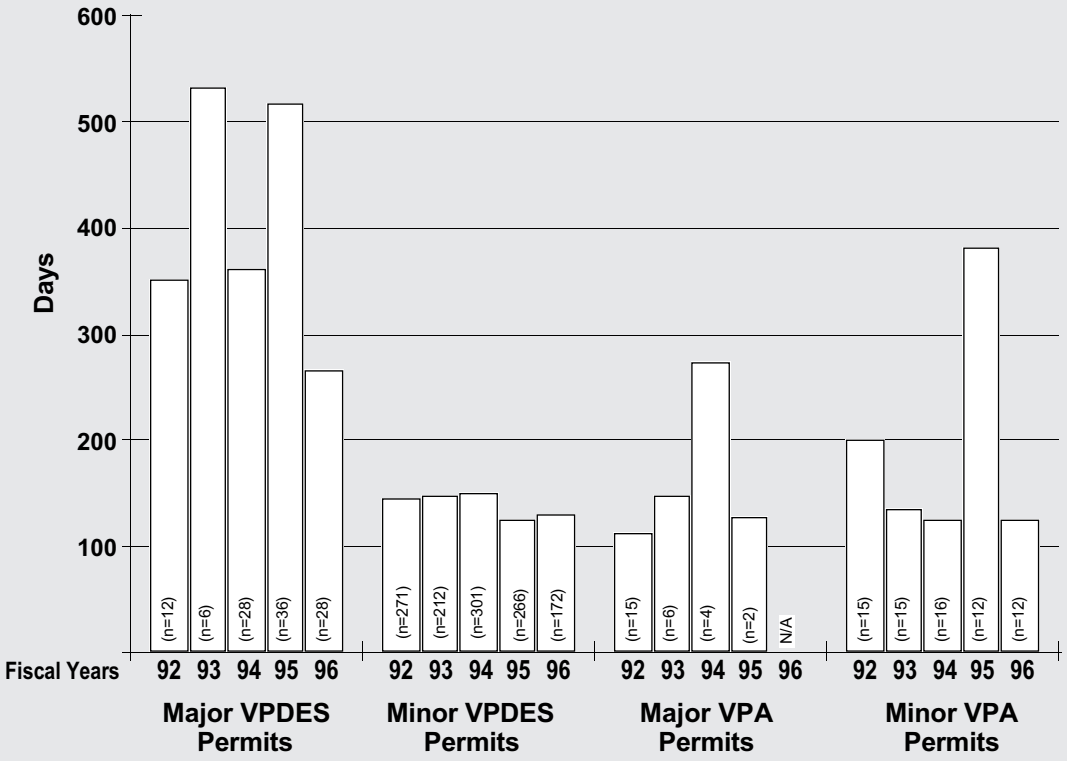
Like other states, Virginia has been in the process of developing a Title V operating permit program which is acceptable to EPA. This process has been hampered in Virginia because the Commonwealth has challenged the legality of the Clean Air Act's requirement that states give citizens legal standing to challenge the issuance of Title V permits. The State currently limits legal standing for the purpose of challenging permits to those citizens with a vested economic interest in a permit. Although EPA will not grant full approval of Virginia's Title V operating permit program until the court action is resolved, it appears that Virginia will have to issue the first group of Title V permits by July 1997. However, DEQ has not taken the necessary steps in terms of hiring and training staff to prepare to issue Title V permits.

DEQ PERMIT PROCESSING TIMES ARE VARIED

While reducing permit processing time has been one of the chief goals of DEQ since its creation, reductions in permit processing averages have not been consistently achieved. Many decision makers have stated goals to reduce processing times, and many of the changes at DEQ have been initiated to reduce processing times. However, as Figures 2 and 3 show, permit processing times have fluctuated each year displaying no uniform trend in either direction. The Secretary of Natural Resources' 1992 *Report to the General Assembly* on DEQ notes that improving permit processing should be one of the principal concerns of the new department. Similarly, one of the major goals of the 1995 reorganization was to improve permit processing time. Also, Item 496 of the 1995 Appropriation Act directed DEQ to establish a reference or average time for permit processing and to develop a performance measurement standard of 75 percent of the reference or average time. This provision of the Appropriation Act, however, expired with the provisions of the 1994 - 1996 Appropriation Act of June 30, 1996.

Figure 2

Average Permit Processing Times for Issuance and Re-Issuance of Water Permits



Notes: n = total number of permits issued during given fiscal year according to database. For fiscal year 1996, no permits were issued in the "Major VPA" category.

Source: JLARC staff analysis of DEQ's Permit Tracking System database.

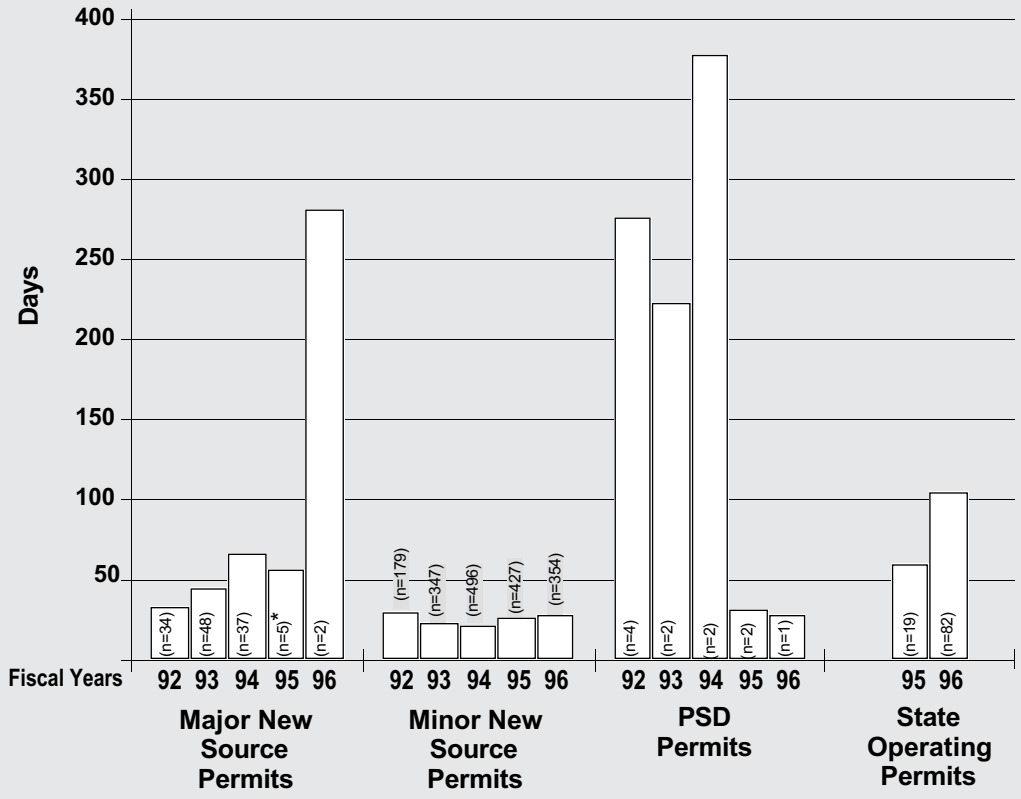
One component of a permit writer's yearly performance evaluation examines how effective permit writers are at meeting permit processing time goals. DEQ management recently contracted with a consultant to examine ways to further reduce permit processing times, and the Department of Planning and Budget is currently examining this issue.

As mentioned, one of the central objectives of DEQ's re-organization was to streamline the permit process. The most time-intensive component of the permitting process DEQ management found to streamline was central office's review of major air and water permits before they were issued. This review, which was already limited to a maximum of 14 days, was eliminated by DEQ management in September 1994.

However, despite the possible efficiencies from the elimination of this 14-day review, changes in permit processing times do not appear to be highly related to the

Figure 3

Average Permit Processing Times for Air Permits



Notes: *In FY 1995, DEQ adopted EPA's definition of a major permit, which significantly reduced the number of permits in this category.
State operating permits were first issued in FY 1995.
n = total number of permits issued during given fiscal year according to database.

Source: JLARC staff analysis of DEQ's Permit Application Tracking System database.

removal of this step in the process. For example in FY 1996, the first full fiscal year that the re-organized DEQ was in operation, the agency achieved a decrease of 48 percent for their major VPDES water permit processing times. This is a much greater reduction than can be attributed to elimination of central office's review of the draft permit. On the other hand, permit processing times for major new source air permits increased by 80 percent in FY 1996. Therefore, the agency's extensive efforts to streamline permitting did not systematically impact permit processing times. Most DEQ staff and management familiar with the permitting process admit that controlling the time it takes to issue a permit is nearly impossible because of the multitude of factors that are out of the control of permit writers.

Factors Affecting Permit Processing Time

As mentioned, there are many factors which likely influence permit processing times: staffing level, changes in policy and regulation, number of permit applications received, use of general permits, negotiation of permit conditions with permittees, and public participation requirements. Because all these factors are largely outside the control of permit writers and many are beyond the control of agency management, it will be difficult for the agency to continue to reduce permit processing averages. Most DEQ management staff agreed in interviews with JLARC staff that the current goal of issuing water permits in 120 days and air permits in 90 days (with the exception of Prevention of Significant Deterioration permits which have a 365 day goal) are reasonable standards that can usually be met. However, most permitting staff assert that issuing major permits in significantly less time than this would be nearly impossible because of the many people involved in the review of these permits outside the agency.

Staffing. One concern expressed by DEQ staff in interviews with JLARC staff is whether the agency will be able to improve its permit processing time, given the staff reductions that it has absorbed. DEQ management's perspective, as expressed by the agency director, is that reduced central office oversight of permitting will allow the regional offices to process permits more quickly, even with staff constraints. However, any efficiency in permit processing achieved by the decentralization should be minimal because under the old structure, central office staff were only allowed 14 days to comment on major permits.

Negotiations with the Permittee. DEQ staff negotiations with permittees can be lengthy, and can delay the issuance of the permit. Once a completed application is received from the permittee, DEQ staff proceed to prepare a draft permit. The draft permit is then provided to the applicant for review. In many cases, this initiates a protracted period of negotiation between the applicant and the agency regarding the permit provisions. Many people interviewed within and outside of DEQ have stated that this negotiation time has increased in recent years because of the more frequent use of attorneys representing permitted sources in the process, and DEQ's increased emphasis on economic development and customer satisfaction. Both of these changes require permit writers and management to spend more time negotiating numerous conditions with permittees. This can add considerably to permit processing time averages. For example:

> *The reissuance of a VPDES permit for a major shipyard in the State was delayed for five years because of negotiations between DEQ and the shipyard. The agency and the shipyard were debating the necessity of a TBT limit and toxics monitoring requirements in the permit. EPA and citizens groups also became involved in the negotiation of this permit.*

Public Participation. Once a draft permit has been agreed upon by the permittee and DEQ, the public is then allowed to comment on the permit conditions. The time allotted for public comment varies but is usually 30 days. As mentioned, some major

permits must also be reviewed by the U. S. Environmental Protection Agency (EPA) as well as the U.S. Park Service, U.S. Forest Service, and the Army Corps of Engineers. DEQ can, in some instances, increase the amount of time the public has to comment on permits, but the agency cannot reduce the time provided for comment because the public comment conditions are established in law and regulation.

Volume of Permit Applications. DEQ staff have noted that permit volume influences average permit processing time. Several regional directors stated that a large group of major water permit reissuances come up for renewal at the same time every few years. As a result, staff are stretched, and permits cannot be reissued as quickly as they can in years when the workload is lighter. The number of new permit applications can also vary considerably from year to year.

Use of General Permits. DEQ's increased use of general permits in the place of more traditional permits has helped ease the permit writers' workloads because they take less staff time to issue. General permits allow minor sources of pollution which operate a facility that fits a standard industry mold (for example, dry cleaners) to be covered under a boiler-plate permit. The general permit reduces considerably the time and money invested in receiving and preparing a permit because permit conditions are already established, and there is no public comment period for a specific general permit. DEQ, like environmental agencies in other states, is in the process of trying to expand the use of general permits. General permits are now primarily used by the water division, but the air division is in the process of developing general permits for dry cleaners, asphalt plants, and small printing operations.

Changes in Regulatory Requirements. Environmental protection is a field that requires continual changes to regulations based on scientific and environmental developments. The changes mean that permit writers have new conditions they must put into permits, which often result in increased research and calculations. The regulated community is also often reluctant to accept new conditions, particularly in permit reissuances, which often leads to longer and more intense negotiation between DEQ and the permittee. A recent example of this is the delay of up to five years in re-issuing nine VPDES permits for municipal sewage treatment plants in Northern Virginia due to delays in revising the Potomac Embayment regulation.

> *The Potomac Embayment regulation includes some permit limits for sources that discharge into the embayments and tributaries of the Potomac River. DEQ performed water quality modeling which suggested some of the limits established in the Potomac Embayment standards were unnecessary to protect the water quality of the Potomac River. In 1990, DEQ solicited input from the affected localities on the regulation. As a result, the localities petitioned for the revision of the regulation. In order to satisfy their constituencies, officials from some of the Northern Virginia municipalities wanted to maintain the special regulation. However, they did propose changes to the limits. It took DEQ staff six years to negotiate a compromise for these changes. The negotiation was prolonged because the representatives from each local-*

ity involved had their own ideas on the appropriate changes, and some of the changes that required more stringent limits were going to cost the localities millions of dollars. In September 1996, a new Potomac Embayment regulation was approved by the State Water Control Board. It will take at least several additional months before DEQ can re-issue these expired permits.

It is important that facilities be issued permits in an efficient manner. However, as illustrated above, there are significant limits on DEQ staff's ability to reduce the permit processing time without sacrificing the quality of the permits that are issued. DEQ appears to have already addressed those areas of the process that could be further streamlined.

DEQ HAS SOUGHT TO IMPROVE ITS SERVICES FOR PERMITTEES

When DEQ management began to reorganize the agency, the director stated that DEQ was going to place more emphasis on "customer service". The agency's new mission statement emphasized this goal, and in an October 1994 briefing to the Senate Agriculture, Conservation, and Natural Resources Committee, the director stated that the focus of DEQ would include efforts to "build good working relationships with (the) regulated community," "create a service-oriented agency," and "become (an) integral part of Virginia's economic development efforts."

JLARC staff solicited feedback from permittees and others on their level of satisfaction with DEQ since the reorganization. It appears that members of the regulated community are more satisfied with DEQ overall since the reorganization. However, representatives of conservation and environmental interests have become less satisfied with DEQ since its reorganization. In addition, a JLARC survey of DEQ staff indicates that 82 percent of staff agree that DEQ is achieving its goal of becoming more customer service oriented, but staff differ on whether the agency is emphasizing customer service at the expense of environmental protection.

The Regulated Community Is Highly Satisfied with the Service It Receives From DEQ

JLARC staff surveyed a sample of DEQ's constituent groups composed of representatives of municipal wastewater treatment facilities, agribusiness, and industry. Thirty-five individuals representing these groups responded. Overall, they indicated satisfaction with the services that DEQ is providing them. The primary service DEQ provides to the regulated community is the issuance of permits. Forty-one percent of the regulated community respondents reported being very satisfied, and 53 percent reported being somewhat satisfied with the "level of service" provided by DEQ. Most respondents (51 percent) stated that their level of satisfaction has improved since the 1995 reorganization of DEQ. Furthermore, most of those representing permittees

responding to the survey felt DEQ was providing the appropriate services. Seventy-seven percent answered "no" to the question, "are there any services your organization believes should be provided by DEQ that are not now being provided?"

Eleven interviews with individuals representing permitted sources were conducted by JLARC staff. Seven of those interviewed were more satisfied in general with their relationship with DEQ since the reorganization. Most individuals represented liked the increased authority that was given to the regions as a result of the reorganization. Permittees said they believe they have more control over the process when negotiating with the regions than they previously had with the central office. Partially due to this regionalization, permittees indicated that DEQ is now more flexible when drafting permits than they were in the past. One permittee commented that DEQ is now "kinder and gentler" in its relations with permittees. Some of those interviewed also said they like the increased use of general permits, and four individuals felt that permit processing time had improved in recent years. For example:

> *A representative from a major company during an interview with JLARC staff praised the regionalization of DEQ. He indicated that dealing with a regional office had improved the communication between DEQ and the company and had streamlined the permitting process.*
>
> * * *
>
> *During an interview with JLARC staff a representative from a trade organization said that in recent years DEQ management has been easier to negotiate with. The representative stated that DEQ management now shares his philosophy that "laws and regulations should be read to see what they allow instead of what they restrict." As a result, he has been more satisfied with the outcome of permit negotiations in recent years.*
>
> * * *
>
> *During an interview with JLARC staff a representative from a company stated that he is very pleased with the customer service orientation of DEQ since the re-organization. The representative mentioned that a member of central office management visited the company's facility recently and told him that the company "was the customer and DEQ was there to help with the company's problems."*

Environmental and Conservation Groups Are Not as Satisfied with DEQ

Environmental and conservation groups believe that DEQ management has gone too far in trying to serve permittees. Sixty-two percent of the respondents to a

JLARC survey representing conservation and environmental interests said that they are less satisfied with the "quality of services" provided by DEQ since the 1995 reorganization. None of these respondents were "very satisfied" with DEQ's efforts to protect Virginia's environment, and only 27 percent were "somewhat satisfied" with these efforts. In interviews with JLARC staff, representatives of environmental groups also expressed general dissatisfaction with the responsiveness of DEQ to their concerns.

Comparison of Regulatory and Environmental Community Satisfaction with DEQ

All of the environmental group representatives interviewed by JLARC staff believe that since the reorganization, DEQ management is more willing to sacrifice environmental quality to please the regulated community. Responses by environmental and conservation groups to a JLARC survey also indicate that most of these groups believe DEQ is doing an inadequate job of "balancing environmental protection and economic development." None of the respondents indicated that they were "very satisfied" with this effort, and only 21 percent of the respondents stated that they were "somewhat satisfied."

All of those responding from this group made written statements asserting that DEQ works harder to protect economic interests than it does to protect the environment. The following comments are reflective of the comments made on this subject by environmental interest groups.

> [DEQ] bends over backwards to enable industry to short-circuit environmental reviews and permits; [DEQ] does not see protecting the environment as its primary mission.

* * *

> No balance. [DEQ] is all for economic development, regardless of the cost to the environment.

In contrast, only one member (three percent) of the regulated community who responded to the survey indicated dissatisfaction with the "balance" DEQ has tried to achieve between environmental protection and economic development. Two respondents provided written comments suggesting that DEQ is still more concerned about protecting the environment than economic development.

> [DEQ] is more focused on environmental issues, not on industry.

* * *

> [DEQ] is too environmental [sic] oriented.

DEQ Staff Perceptions of the Agency's Services

Eighty-two percent of DEQ staff surveyed agree that DEQ is achieving its goal of becoming more customer service oriented (Table 1). However, staff expressed a concern that economic development is taking precedence over environmental protection at DEQ. Many of the comments written by respondents to the JLARC survey of DEQ employees reflect this concern. For example:

> Few of my colleagues believe the agency is being steered toward environmental protection. Too many times we have been instructed to back down from a protective stance so that permittees will not be upset. I have been excluded from regional meetings during permit negotiations so that the protective view will not be heard. Agency procedures have been tossed out when a permittee challenges them, simply to keep the permittee happy. There is no spine. So long as I do as I am instructed, I do not think my job is at risk.

* * *

> There seems to be minor improvement over the past few months, probably due to JLARC scrutiny. Intimidation of staff by upper management and the Secretary's office is not as overt as before. However, satisfying industry and economic concerns still remains dominant over protecting the environment in the agency's current role.

Forty-four percent of DEQ staff responding to the JLARC survey agreed with the comment that the reorganized DEQ is "less effective in protecting the environment." DEQ staff also expressed these concerns during structured interviews with JLARC staff. Many staff believe DEQ management's mission is to serve the regulated community first and the environment second.

Table 1

DEQ Staff Responses on Meeting the Agency's Customer Service Objective

Statement: DEQ is advancing toward meeting the objective of becoming more customer service oriented.

Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	No Opinion %	Number of Respondents
16	66	8	3	7	254

Note: Percentages may not add to 100 due to rounding.

Source: JLARC analysis of DEQ employee surveys (survey responses received during September and October 1996).

DEQ employees feel agency management has lost sight of its primary statutory and regulatory responsibilities. As mentioned, most believe that DEQ is becoming more customer service oriented, but many employees are concerned that DEQ management views the agency's customer as the permittee and not the citizens of Virginia. For example, only 20 percent of DEQ employees surveyed agree that "DEQ's top leadership values environmental protection." According to statements made by DEQ employees, management now views the regulated community as a set of customers to be satisfied and deferred to. This is reflected in DEQ's current mission statement which states, in part, that the agency should "promote a proper balance between environmental improvement and economic vitality."

The view of a zero sum balancing act between the environment and the economy is not contemplated in DEQ's statutory mandate, which states in section 10.1-1183:

> It shall be the policy of the Department of Environmental Quality to protect the environment of Virginia in order to promote the health and well-being of the Commonwealth's citizens.

The regulated community and permit matters should be dealt with efficiently, effectively, economically, and professionally. However, the regulated community is not the only customer of DEQ. All the citizens of Virginia should be served by DEQ's oversight of the Commonwealth's natural resources.

SEVERAL PERMITTING ISSUES NEED MORE ATTENTION BY DEQ

Many DEQ staff, as well as those that work with the agency, are concerned that the decentralization of DEQ's permitting programs has resulted in inconsistencies in the permitting process among the regional offices. Inconsistencies can create two primary concerns. They can result in economic inequities for similar permittees who are treated differently. In addition, inconsistencies can create uncertainty within the regulated community.

DEQ's director recently recognized the problem of permit inconsistency among the regions. In response to the director's concerns, the DEQ director of program support and evaluation has started to conduct meetings with regional permitting staff to discuss the agency's inconsistency problems and possible solutions, but the problems have not yet been resolved.

Poor internal communication complicates DEQ's duty to provide permit consistency. For instance, 61 percent of permit writers disagree with the following statement, "Communication within DEQ is good." It also appears that decentralization of the air and water permit programs occurred so rapidly that some regional staff were not prepared to write permits with such limited central office oversight, and they were insufficiently trained to take over the Virginia Water Protection (VWP) permit program. The reduction of central office technical staff also resulted in less guidance to the regions about

regulatory changes and new programs, particularly in the air division. The lack of communication, training, agency review of permits, and internal guidance could have a negative effect on permit consistency among the regions.

Permit Quality: Consistency and Training Issues

JLARC's review of DEQ's permitting process indicates that DEQ management should focus more attention on permit consistency and permit writer training. Sixty percent of permit writers who responded to JLARC's survey disagreed with the following statement: "DEQ permit writers receive adequate technical training" (Table 2). Interviews with permitting staff also indicated that training has been inadequate, particularly in programs that were delegated to the region as a result of the 1995 decentralization. DEQ staff commented that training has not been thorough enough for their new responsibilities in the VWP program and air modeling. Inadequate training has meant that the regions have developed their own way to complete their newly delegated tasks, which has led to inconsistency and inaccuracy.

Table 2

Permit Writers' Responses on Adequacy of DEQ Training

Statement: DEQ permit writers receive adequate technical training.

Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	No Opinion %	Number of Respondents
4	26	36	24	11	85

Note: Percentages may not add to 100 due to rounding.

Source: JLARC staff analysis of DEQ permit writer surveys (survey responses received during September and October 1996).

The Virginia Water Protection Permit Program Is Inconsistently Applied. In September 1995, DEQ management rapidly decentralized the VWP permit program. Due to the rushed nature of the decentralization and a lack of resources, regional staff were only offered a one day training course at the central office to learn how to issue VWP permits. Also, because this was a relatively new permit program which had previously been centralized, there was very little written guidance on how to implement the program. Both central office and regional staff agree that the training and guidance provided were inadequate to prepare permit writers in the regions to issue these often complicated permits. This lack of preparation has led to inconsistencies in implementing the program and arguably to the improper implementation of the program in some instances, as the following example from JLARC's review of DEQ files and interviews with staff suggests:

A VWP waiver was granted to a municipality planning to develop on approximately six acres of wetlands. There are a list of criteria that must be met before a waiver can be granted. One criterion established in regulation (VR 680-15-02) stipulates that the developer must provide a mitigation plan before a waiver can be granted. The municipality, in this instance, had not submitted a mitigation plan when the waiver was granted. However, the decision was made to grant the waiver.

Some DEQ managers are concerned that others in the regulated community will use this example as justification for the issuance of additional waivers under similar circumstances. Water permit management in the central office has recently started to facilitate regular conference calls with regional staff to discuss the inconsistency problems in the VWP program. The goal of these discussions is to develop guidance that will help VWP permit writers to implement the program in a consistent way throughout the regions. The central office's staffing for support of this program, however, has been reduced so severely that guidance may not be issued as efficiently as it should be. Also, no one in the central office is auditing any of the VWP permits which the regions are issuing. This lack of oversight causes further concern about potential lack of consistency.

The Air Modeling Program Lacks Support. Air modeling uses complex computer programs to make estimates of pollutant concentrations in the atmosphere. This information is used to establish permit limits. Before the 1995 reorganization, there were as many as ten staff in the central office who did complicated air modeling for the DEQ regions. Now, the only person remaining in the central office to develop air models and check the models submitted by the regulated community is the air modeling program manager. The regions have been delegated the authority to do all modeling except that used for PSD permits. Regional staff, however, have not been provided with adequate training on how to complete the modeling in the new areas for which they are responsible. The remaining modeler in the central office fields questions from the regions and otherwise assists regional staff to the degree possible, but staffing in this area has been so dramatically reduced that this is difficult to do.

Air modeling is a highly technical function that allows permit writers to set the appropriate emissions limits for those who discharge air pollutants. The use of models in regulatory applications is mandated by law for certain situations and also provides information for evaluating the environmental or human health effects of air emissions. JLARC staff have been told that, without proper training, it is relatively easy to make a mistake during modeling that could result in setting emissions limits too high or too low, which could impact overall air quality. Yet, with no central office review or audit of air permits, there is no systematic method for detecting problems. Most air permit writers JLARC staff spoke with stated that they do not feel they have had sufficient training to do the modeling required by some permits. Permit writers also feel that the current level of support for this function in the central office is insufficient.

Recommendation (8). **DEQ management should ensure that the training needs associated with the regionalization of permitting are met.**

Recommendation (9). **DEQ management should seek additional staff in the air and water permit support sections in the central office in order to provide complete and timely guidance, training, and technical support to the regions.**

Recommendation (10). **DEQ management should create an audit program for Virginia Water Protection permits.**

Permit Quality: Centralized Audit of Permits Is Needed

Before the 1995 reorganization of DEQ, the central office would review most major permits before they were issued as well as conduct a post-issuance audit of a sample of major and minor permits. Presently, the central office does not review any permits before they are issued and audits only a small sample of water permits after issuance. The elimination of the prospective review of permits makes the permit audit program even more critical. The audit program should be strengthened in order to compensate for the elimination of prospective permit review.

The central office water division staff conduct audits of some permits written in the regions after issuance to check for consistency and technical accuracy. However, only 20 percent of VPA and VPDES water permits (between 10 and 17) are audited for each region annually, and no VWP or air permits are audited. Central office staff also conduct a quality assurance/quality control (QA/QC) audit of 25 percent of VPDES permits issued. This review examines the permits to ensure that they are in the proper format, and compares the permit to the permit applications to ensure that basic information such as facility name and category are correct. Pursuant to the direction of DEQ management, no audits of any type were conducted in 1995.

Audits Uncover Problems. The need for these audits is demonstrated by Table 3. Permit auditors found at least minor problems with most of the permits they reviewed, and in eight instances it was determined that a law or regulation was violated as a result of water permit audits during 1994 and 1996.

DEQ permit auditors rank all the comments they make on regional permits as "A", "B", or "C". An "A" classification represents a problem that "violates law or regulation." A "B" classification indicates that there is a "significant omission or deviation from established procedures;" and a "C" classification means the permit contained a "minor procedural or typographical error." Comments ranked as "A" are typically the most serious, but "B" comments often represent inconsistencies with what other permit writers are doing. "C" comments are not usually serious unless it is a typographical error for a permit limit. In such a case, the typographical error can be as serious as a class "A" deficiency, because the text and the specific numbers set the pollution limits which must be followed.

Follow-up from Audits Is Weak. While problems are frequently detected by auditors, regional staff are not required to correct problems noted by an audit. Regional

Table 3

Result of Central Office Audit of VPDES and VPA Permits

Region	Year	# Permits Reviewed	# Permits with Comments	# Class A Violations	# Class B Violations	# Class C Violations
NRO	1994	12	7	0	6	9
PRO	1994	12	9	4	16	7
SWRO	1994	11	11	0	17	8
TRO	1994	13	8	0	9	7
VRO	1994	11	8	0	13	5
WCRO	1994	10	8	3	30	4
Kilmarnock	1994	6	5	0	5	8
NRO	1996	11	9	0	13	19
PRO	1996	14	13	1	14	35
SWRO	1996	11	9	0	13	19
TRO	1996	14	10	0	10	7
VRO	1996	13	6	0	7	5
WCRO	1996	13	12	0	8	34
Kilmarnock	1996	5	5	0	8	16

Class A deficiency - violations of law or regulation.
Class B deficiency - significant omission or deviation from established procedures.
Class C deficiency - minor procedural or typographical errors.

Source: JLARC staff analysis of DEQ permit audit forms, summer 1996.

management began to consider correcting audits as optional in September 1994 when the DEQ director signed a delegation of authority authorizing the regional directors to issue permits. Some regions choose to act on the audit comments but others do not. Those who do not are allowing errors to remain in permits. This can result in a permit that is in violation of law, regulation, or guidance. DEQ staff stated that in some instances, regional staff are responsive to audits and will correct problems immediately. In other cases the audit findings are ignored.

In most instances permit staff state that the permit will be corrected at reissuance which may be up to five years. Auditors say that correction at reissuance is sometimes the appropriate reaction. However, auditors do not conduct any kind of follow-up of their audits to see if their concerns were addressed. Auditing staff attempted to follow-up on their audit findings in 1993, but this initiative was canceled by central office management in 1994 because many regional managers were not receptive to the follow-up, especially once the regional directors were authorized by the director to issue permits on their own.

Air Division Does Not Audit Permits. The air division has not audited permits since 1994. The air division director stated that several alternatives are being considered for a new audit program. However, nothing has yet been established, more

than two years after the decentralization of air permitting. The air division director stated that there is no longer enough air staff in the central office to audit air permits, and any audit program would have to take this into consideration. Many permitting staff have stated that they would like to have an air permit auditing program as long as the audits were conducted by staff members from central office who are knowledgeable and experienced with the air permit programs.

One idea being considered by management is to have the regional air permit writers audit each others' permits, or a peer review approach. This approach raises two concerns. First, it is not clear whether regional offices have sufficient resources, given the increase in air permit processing time noted previously in this chapter. Second, some regional staff expressed concern that having regional staff auditing one another's permits could cause resentment among the regional staff and inhibit auditors from making appropriate comments.

Recommendation (11). **DEQ management should require regional staff to respond to permit auditors comments on permit deficiencies. Unless the region can justify to the audit staff manager's satisfaction a reason for deviating from established policy, regional staff should change permits with errors to comply with DEQ guidance or regulation. Audit staff should follow-up on their recommendations.**

Recommendation (12). **DEQ management should create an air audit program which designates central office staff experienced in the air permit programs to review a sample of air permits annually. The permits should be checked for adherence to relevant laws and regulations as well as consistency among the regional offices.**

Title V Operating Permit Program

A federal Title V operating permit is required for owners and operators of any major stationary source as a result of the 1990 Clean Air Act amendments. Implementation of the Title V program has been stalled in Virginia as DEQ is continuing to revise its program submittal to meet EPA's standards. The negotiation of an agreement has been complicated because Virginia is suing EPA over the Title V condition that provides citizens with "standing" to bring civil action to challenge environmental permits issued under Title V. Virginia currently only provides standing to permittees and other citizens who can prove that a permit substantially impacts their economic interests. House Bill 1412, which was approved by the 1996 General Assembly, proposes to allow "injured" citizens who participate in the public comment process to challenge an air or water permit by appealing the decision of the SAPCB or the SWCB to the Circuit Court. This legislation, however, will not take effect until the Commonwealth's current legal action against the federal government over the standing issue is resolved. The State's argument was rejected unanimously by the Fourth Circuit Court of Appeals, and the Fourth Circuit Court denied the Commonwealth's request for a hearing before the full court.

The Commonwealth has filed an application for a *writ of certiorari* with the United States Supreme Court to hear Virginia's case against the federal government. Regardless of whether or not the Commonwealth wins this case (which focuses only on the standing issue), operating permits will have to be issued to those sources which receive Title V permits. However, according to DEQ staff and members of the regulated community, DEQ has not adequately prepared to implement this program; and it is unlikely that Virginia permittees will receive their Title V permits by the federal deadline.

Title V Operating Permit Implementation Is Stalled. Air Pollution Control Board staff have known since 1990 that the State would have to start issuing air operating permits. The agency sent its first Title V program submittal plan to EPA November 15, 1993. EPA proposed changes to this plan, and since then DEQ has submitted four revisions of the plan. As of September 1996, nine states had a fully approved Title V program while 37 states have interim approval for their Title V programs, and three states' Title V submittals are still being reviewed by EPA. Virginia is the only state whose program has been disapproved.

In January 1994, the Commonwealth filed a suit against EPA over the standing issue. Therefore, despite the fact that DEQ staff have addressed all the major technical concerns EPA has with Virginia's Title V program submittal; EPA will not grant approval of DEQ's program until the litigation is resolved.

Without an approved State Title V plan, sources of air pollution will have to obtain a Title V permit using EPA's plan. DEQ is requesting that EPA adopt Virginia's Title V submittal as their own and re-delegate the program to DEQ to administer until the legal action is resolved. The earliest this re-delegation could take place is December 1996. It is expected that 375 sources in the State will require Title V permits. Current federal regulation requires DEQ to provide the first third of these permittees six months notice before their applications are due, and EPA has set a due date of July 1997 for the issuance of the first third of the permits. DEQ's most recent proposal to EPA requests that the deadline for the issuance of the first third of Title V permits be moved back to one year after DEQ obtains authorization for their interim permitting program. EPA is requiring states to issue Title V permits to all the necessary sources within three years from the start of program implementation. DEQ management stated that regardless of whether or not the deadline is extended, DEQ will not be able to issue the first third of permits by July 1997 much less all permits in three years.

If it does not approve this proposal, EPA could administer the Title V program for Virginia, but EPA and DEQ staff have stated that EPA does not have the staff necessary to issue the permits for Virginia. EPA could also require the State to issue Title V permits under EPA's authority using EPA's Title V program. In either of these two situations, EPA could be the recipient of fees collected from the Title V permits issued, and the fees would be substantially higher than those levied under the proposed Virginia Title V operating permit program. Neither DEQ nor most potential Title V permittees in the State want the Title V program to be implemented by EPA.

Even under the best case scenario in which EPA provides interim approval for DEQ to administer the Title V program, DEQ has very little time in which to issue the first group of Title V permits. The agency will have approximately seven months to develop guidance, hire and train staff, and issue approximately 125 permits unless EPA decides to grant an extension. Staff are working on a manual to instruct permittees on how to complete the Title V permit application, but no guidance has been written on the program, and staff have not been hired or trained to write, process, or enforce the Title V permits.

Staffing for the Title V Program Is Uncertain. In 1994 DEQ asked and received authorization from the General Assembly to allocate 111 positions for the Title V program. The Department of Air Pollution Control (DAPC) conducted an analysis in the early 1990s which determined these resource needs. This analysis was required by and submitted to EPA. However, during the 1995 reorganization of DEQ, it was determined by management that all the additional positions were not needed; and the 1995 General Assembly, at the agency's request, reduced DEQ's MEL by 104 positions to reflect this.

DEQ currently employs 45 FTE for the State operating permit program which are funded through "interim" fees from the program, but DEQ management now believe that to fully staff the Title V program for the first year, a minimum of 32 additional full-time staff and seven additional part-time staff will be required. Most of the additional staff needed are: permit writers, inspectors, and compliance and enforcement staff. Additional staffing would be funded using the fees associated with the Title V program.

DEQ management authorized the hiring of seven part-time clerical staff for the Title V program. The agency advertised for some of these clerical positions in October 1996; one of these positions has been filled. However, the human resources director has put a hold on advertising for the 32 full-time staff. In an October 1996 interview with the Secretary of Natural Resources, JLARC staff asked about the progress of hiring additional staff to administer the Title V program. The Secretary responded that the State did not yet have a Title V program in place, therefore, no additional staff were needed.

DEQ regional management is eager to hire additional staff for the Title V program so that staff can be trained and appropriate guidance documents drafted. As mentioned previously, it is likely that the State will have to issue approximately 125 Title V permits by July 1997, and DEQ has to give these permittees six months notice before their permits are due. Though it is unknown at this time under what terms the State will have to issue Title V permits, it is certain that the State will have to issue these permits. It is also probable that the permits will have to be issued in approximately seven months. Therefore, DEQ needs to begin hiring the necessary staff to prepare to administer the Title V program.

Recommendation (13). **DEQ management should develop a functional training and implementation plan to instruct staff on how to issue Title V permits.**

Recommendation (14). **DEQ management should hire the necessary staff to implement the Title V operating permit program as soon as possible. Staff should be prepared to issue Title V permits as soon as a suitable agreement is reached with the Environmental Protection Agency.**

IV. Monitoring and Inspections

The JLARC review of DEQ has identified several concerns about the agency's interpretation and execution of its monitoring and inspection programs. DEQ management's contention that water quality is improving based on the percentage of stream miles identified as impaired is not supported by the findings of the draft 1996 *303(d) TMDL Priority List*, or Impaired Waterways List. In fact, the percentage of impaired stream miles in Virginia has increased from 1994 to 1996. Furthermore, the agency's Impaired Waterways List potentially understates the degree to which State waters are impaired due to:

- changes in monitoring strategy from one report to the next;
- exclusion of streams with known impairment;
- regional inconsistencies that impact DEQ's ability to consolidate data for a statewide assessment of water quality;
- the exclusion of naturally impaired streams, streams evaluated (not monitored) as impaired, and the improper use of the "fully supporting but threatened" category of water quality assessment;
- the lack of useful data on metal contaminants in State waters;
- the limited nature of the current biological monitoring program; and
- problematic analysis of data from monitoring stations with low sampling frequencies.

Also, the agency's reliance on source-reported monitoring data in the water program is problematic due to a lack of oversight in the collection and analysis of the monitoring data and the downward trends in laboratory performance in the Commonwealth.

As for inspections, the number of annual inspections performed by DEQ in the water and air programs has been declining as the number of permitted sources of pollution continue to rise. Also, JLARC staff's survey of all DEQ inspectors raises concerns about the ability of inspectors to conduct thorough and objective inspections given current staffing levels. Finally, there appear to be some inconsistencies in inspection procedures.

TYPES OF MONITORING AND INSPECTION PROGRAMS ADMINISTERED BY DEQ IN THE AIR AND WATER PROGRAMS

DEQ maintains statewide monitoring networks for ambient water and air quality, and the department can require permitted sources in both the air and water programs to conduct their own monitoring of the actual make-up and/or environmental impact of their discharges or emissions. In addition, DEQ conducts a number of different types of inspections for the air and water programs.

DEQ's Water Quality Monitoring and Inspection Programs

Virginia's ambient water quality monitoring network exists so that DEQ can assess in-stream water quality conditions throughout the Commonwealth. DEQ must report on water quality conditions biennially to the Environmental Protection Agency (EPA) and Congress. DEQ estimates that Virginia has 49,220 miles of perennial rivers and streams. In the two-year period from April 1, 1993 to March 31, 1995, the Ambient Water Quality Network consisted of 1,114 monitoring stations (up from 896 in the previous two year period) to monitor 29,243 miles, or 59 percent, of the State's waters. Currently, the majority of the network is composed of chemical monitoring stations, but DEQ also maintains approximately 200 biological monitoring stations and about 50 fish tissue and sediment sampling stations. According to data reported to EPA, Virginia is one of the top-ranking states in terms of the percentage of perennial stream miles monitored.

Through its Virginia Pollutant Discharge Elimination System (VPDES) water pollution permitting process, DEQ can require a permittee to monitor its effluent for pollutants. This monitoring program requires the permittee to collect effluent samples and analyze them for whatever pollutants may be discharged, and to report the results to DEQ in a Discharge Monitoring Report (DMR).

Inspections of VPDES permitted facilities are conducted to ensure that this self-monitoring is representative and accurate, and that wastewater facilities are properly operated and maintained. These inspections are usually conducted by regional DEQ personnel. Inspection frequency is dependent upon the size of the facility to be inspected and the type of inspection to be conducted. The major types of VPDES inspections are described in Exhibit 2.

DEQ's Air Quality Monitoring and Inspection Programs

The Virginia Ambient Air Quality Monitoring Network consists of monitors maintained by DEQ, the City of Alexandria, and Fairfax County. In 1995, this network consisted of 60 monitoring sites across the Commonwealth, established according to siting criteria set by EPA. The purposes of the network are to judge compliance with air

Exhibit 2

DEQ VPDES Inspection Types

Technical Inspections. This type of VPDES inspection involves a complete and detailed evaluation of the operation and maintenance of the wastewater treatment process and/or sludge treatment facility. Facilities considered to be major sources are to be inspected annually; minor sources are to be inspected biennially; and small sources are to be inspected every five years.

Laboratory Inspections. This inspection is a comprehensive review of the procedures used by the permittee in sample collection, flow measurement, laboratory analyses, data work-up and Discharge Monitoring Report (DMR) reporting. The stated frequency of the laboratory inspections are the same as the technical inspections, and these inspections are usually conducted on the same day as the technical inspections.

Sampling Inspections. These inspections can either be: (1) a cursory sampling survey, or (2) a legal sampling survey. Cursory surveys usually involve the collection of grab or composite samples. They do not provide enough information for comparison to permit limits, but they do provide useful information for the determination of the acceptability of the permittee's self-monitoring data. Legal sampling surveys are much more involved, and are conducted only in conjunction with enforcement actions. These surveys are sufficient to evaluate compliance with permit limits. The results of these surveys may be presented as evidence during a trial. Sampling inspections are scheduled at the discretion of the regional offices, and therefore, no set frequency has been established.

Unscheduled Inspections. DEQ inspectors may conduct unscheduled inspections at facilities at their discretion. These inspections are usually conducted where there is a suspicion of operational deficiencies, but this is not a requirement. DEQ inspectors normally conduct this type of inspection when they are in the general area of the facility in question and when they have the time to do the inspection.

Compliance Inspections. These inspections are generally conducted as a result of violations of a permit, regulation, enforcement action, or statute and therefore have no set inspection frequency. The inspection accompanies the issuance/delivery of a Notice of Violation (NOV). This inspection is designed to focus attention on the cause of the violation, determine whether correction of previous deficiencies has been accomplished, and to note other violations.

Source: JLARC staff analysis of the DEQ Water Operations Inspection Strategy.

quality standards, provide monitoring data for pollution episodes and for trend analysis, and to evaluate the effectiveness of air pollution control regulations.

Continuous Emissions Monitors (CEMs) are the air program's equivalent of the water program's DMRs, but their use is not nearly as wide-spread. These monitors are set up to sample plant emissions for pollutants limited by permit. CEMs are required through the New Source Performance Standards (NSPS) for certain air permittees and results are reported to DEQ according to permit requirements.

The purpose of DEQ's stationary source inspections program for air permittees is to determine whether they comply with air pollution regulations and to obtain information about their operations. In general, inspection frequency depends on ranking factors such as the type of pollutants emitted by a source. Five levels of inspections, as well as unscheduled surveillance inspections, have been developed to enable an inspector to gather specific types of source information (Exhibit 3).

DEQ'S WATER MONITORING PROGRAMS NEED IMPROVEMENT

An examination of DEQ's water monitoring programs raises concerns about DEQ's ability to assess compliance with permit limits and the status of water quality in Virginia. Despite the reliance of current DEQ management on the *303(d) TMDL Priority List*, or Impaired Waterways List, to show water quality improvements over the last few years, the 1996 303(d) list does not support the contention that water quality is improving and has several limitations that make its use as a tool by which to measure water quality trends in Virginia problematic. These problems are largely because the 303(d) list was not originally intended to be used for analysis of water quality trends, and therefore, was not designed for that purpose. Seven specific limitations of the 303(d) list are identified and discussed in this section of the report. If it is DEQ management's intent to use the 303(d) list to accurately measure water quality trends across the Commonwealth, these limitations must be addressed.

More broadly, in implementing the VPDES permit program, the State relies heavily upon self-reported data from permittees on their pollution discharges without an adequate check on this data. DEQ no longer has a mobile lab to conduct site audits and has never had a certification program for laboratories conducting analysis for VPDES permitted sources. Moreover, recent monitoring data falsification criminal cases and downward performance trends in EPA's audit of Virginia laboratories indicate that self-reported data may not always represent true conditions of the discharges into the streams of the Commonwealth. Together, these concerns lead to the conclusion that DEQ's current water monitoring programs are inadequate, and must be improved before the State can draw confident conclusions from them about the general conditions of Virginia's waters.

Exhibit 3

DEQ Air Stationary Source Inspection Types

Level 0: This is the lowest level of inspection, consisting of an annual determination of the continued operation of the source and its annual process throughput. This inspection level is primarily used to gather information on facilities that may not operate emission control equipment.

Level 1: This is considered a screening inspection for identifying violations of emission standards that can be related to visible emissions. The inspection is usually limited to the evaluation of visible emissions from process vents, fuel combustion sources, incinerations, and fugitive emission sources.

Level 2: This is considered a selective type of inspection in which data about control device and process operating conditions are recorded as part of the source evaluation in addition to visible emission observations. This level consists of the inspector recording such process items as feed rates, temperatures, raw material compositions, process rates, and such control equipment performance parameters as water flow rates, water pressure, and static pressure drop. The inspector uses these values to determine significant changes since the last inspection. If a significant change is noted, the inspector upgrades the inspection to a Level 3 or 4 inspection.

Level 3: This is the most thorough and time-consuming inspection. It is designed to provide a detailed engineering analysis of source compliance by use of measured operating parameters. The two major purposes of this inspection level are (1) to determine if the source is operating within accepted design conditions for the specific control device, and (2) to determine if the source is experiencing operation and maintenance problems that might result in "less than continuing compliance with the emission standards."

Level 4: This is a DEQ staff-observed Stack Test to provide a baseline for the source. This inspection requires that the inspector monitor all process and control device parameters during the stack test for use during future inspections and compliance determinations.

Surveillance Inspections: This type of inspection covers stationary facilities in areas where frequent violations of the regulations are most likely to occur (for example, heavy commercial and industrial areas). Inspectors observe plant operations for any violations (such as fugitive dust emissions) that may occur.

Source: JLARC staff analysis of DEQ stationary source inspection procedures.

The 1996 Impaired Waterways List Does Not Support the Contention That Water Quality Has Improved Over the Last Two Years

The Impaired Waterways List is required of all the states under section 303(d) of the Clean Water Act. The list is derived from the *Water Quality Assessment Report*, or 305(b) report, and contains a listing of waters which do not meet water quality standards based on the assessment of data from DEQ-conducted chemical and biological monitoring. These reports are required every two years.

The current DEQ management has used the Impaired Waterways List, or 303(d) list, to support its contention that water quality has improved over the last few years. The 1994 303(d) list, the first produced by the Commonwealth, relied upon 896 water monitoring stations covering 28,180 miles of Virginia's 44,852 perennial stream miles (or 63 percent of the State's stream miles). For the 1996 list, the State employed 1,114 monitoring stations to monitor 29,243 stream miles. The 1996 list was also affected by a re-indexing of Virginia's stream miles based on revised EPA software, thus increasing total stream mileage from 44,852 in 1994 to 49,220 in 1996 (the increase was due to more advanced mapping technology that had not been available in 1994).

While Virginia witnessed this increase in monitoring stations, the number and proportion of impaired streams increased as well. According to the 1994 303(d) list, 100 waterbodies were identified as impaired. In 1996, 148 waterbodies were identified as impaired (an increase of 48 percent). In terms of the miles impaired, in 1994 783 of the 28,180 miles monitored, or approximately three percent, were identified as impaired. In 1996, 1,452 of the 29,243 miles monitored, or approximately five percent, were identified as impaired (Table 4).

Table 4

Coverage of Virginia's Water Monitoring Network and Impaired Waterways

Reporting Period	Total Perennial Stream Miles in Virginia*	Number of Monitoring Stations	Number of Perennial Stream Miles Monitored	Number of Monitored Stream Miles Impaired	Percentage of Monitored Stream Miles Impaired
1994	44,852	896	28,180	783	2.8
1996	49,220	1,114	29,243	1,452	5.0

Note: The change in total perennial stream miles between 1994 and 1996 was due to advances in EPA mapping technology.

Source: JLARC staff analysis of the 1996 Draft *Water Quality Assessment Report* and the 1996 Draft *303(d) TMDL Priority List*.

The 1996 303(d) list's increased proportion of stream miles impaired does not support the claim of improved water quality over the past few years. This data indicates that either water quality is worsening, or changes in monitoring strategies from one report cycle to the next have uncovered impairment not seen before. Changes in monitoring strategies and other factors (to be discussed below) may limit the usefulness of the 303(d) as a tool for water quality trends analysis. However, DEQ management has chosen to utilize the 303(d) list as a measurement of water quality over time, and has made the assertion that water quality has improved over the last few years. The increase in the proportion of Virginia waters impaired as shown in the 1996 303(d) list does not support, and if anything contradicts, this contention. Chapter VII presents JLARC staff's time trend analysis of water quality in the Commonwealth.

Use of the Impaired Waterways List for Water Quality Trends Analysis Is Problematic

The core function of the Impaired Waterways List is not measurement of water quality trends over time, but to identify waterbodies that do not meet water quality standards and to prioritize development of Total Maximum Daily Loads (TMDLs) for those waterbodies. This load measurement represents the total daily discharge limits of pollutants into those waterbodies that will allow the waterbody to meet the water quality standards for the designated uses of the particular waterbodies. Total loads may apply to both point sources of pollution and non-point sources of pollution.

JLARC staff question the reliance on the 303(d) list for making generalizations about water quality trends for seven reasons. First, the 1996 303(d) list is only the second list produced by the Commonwealth, and changes in the monitoring strategies over the two reporting periods render the use of the 1994 303(d) list as a benchmark for the 1996 list problematic. Second, it appears that staffing and other resource restrictions may have led DEQ to not monitor some stream segments that are generally considered to be impaired, and since they were not monitored, they do not appear on the 303(d) list. Third, interviews with DEQ central office and regional personnel, as well as document reviews, have indicated some inconsistencies in regional sampling strategies and methods due to a lack of central office oversight and a deference to regional decisions, thus calling into question the representative nature of the monitoring network.

Fourth, the 303(d) list excludes waterbodies that are impaired apparently due to natural causes, and it does not include any analysis of water quality trends in threatened waterbodies. Fifth, monitoring during the 1996 303(d) list reporting period did not assess in-stream metals contamination due to an evolving scientific debate and change in metals analysis. Sixth, Virginia's biological monitoring program executed by DEQ is not nearly as extensive as chemical monitoring, and the possibility exists that DEQ chemical monitoring is missing impairment that additional biological monitoring would reveal. Finally, DEQ's analysis of water quality in waterbodies from which few water samples are taken is problematic. If these limitations are addressed, the 303(d) list, over time, could be a valuable tool in the assessment of water quality trends in the Commonwealth. At present, it is not appropriate to use the 303(d) list for this purpose.

The 1996 303(d) List Is Only the Second 303(d) List Produced by DEQ, and Changes in Monitoring Strategies Between the 1994 and 1996 Reporting Periods Render the Use of the 1994 303(d) List as a Benchmark of Virginia's Water Quality Problematic. The 1996 draft 305(b) report states during its discussion of the increase in monitoring stations, "In previous years, most monitoring stations in Virginia were established to document known problems, thus overstating water quality problems. Recently, Virginia moved stations to include stations in non-impacted areas to produce a more accurate and balanced portrayal of the state's water quality conditions." Other comments by DEQ staff have indicated that some of the new monitoring stations added between the 1994 and 1996 reporting periods were placed in areas identified by the Department of Conservation and Recreation (DCR) as a "high priority" for non-point source pollution impairment. Regardless of these somewhat contradictory statements, the expansion of the monitoring program appears to have been an attempt to better represent the waters of the Commonwealth. However, these changes also limit the agency's ability to compare the findings from one report to the next.

Furthermore, DEQ monitoring personnel have stated that a two-year data collection cycle, as used for the 303(d) and the 305(b) reports, is not necessarily long enough to identify anomalies, such as those due to unusual weather conditions. Many of the monitoring stations are sampled quarterly, thus producing only eight data points during a two-year reporting period. In fact, according to DEQ staff, there are current discussions with the Environmental Protection Agency (EPA) about maintaining a biennial report schedule but incorporating five years of data, instead of two, into future 303(d) lists.

While the 303(d) list may contain a snapshot of Virginia water quality over the past two years, use of the list to measure water quality trends over the last few years is contrary to its intended purpose, and has produced mixed results at best. Either way, the 1994 list is not a good benchmark for the 1996 list, and statements as to the State's improving water quality based on only two 303(d) lists are premature.

The 1996 303(d) List Does Not Include Some Streams that are Thought by DEQ Staff to Be Impaired. During DEQ's public meetings concerning the 1996 303(d) list, an issue arose in the Northern Virginia region concerning streams in Fairfax County that were not monitored by DEQ, but that DEQ staff publicly agreed were at least moderately impaired. Since the 303(d) list is based only on DEQ monitoring (for quality assurance purposes), these streams did not appear on the list, despite apparent agreement between the locality in which the streams are located and DEQ staff that these were impaired waterways. An interview with representatives of Arlington County suggested a similar situation in that locality. It is not clear if this is a statewide concern, or if this is limited to Northern Virginia localities.

The lack of monitoring in Northern Virginia appears to be caused in part by limited DEQ staff resources and, in the case of Fairfax County, the presence of a county environmental group that conducts its own monitoring (although this monitoring data is not used for the 303(d) for quality assurance purposes). DEQ cannot monitor every segment of every stream in the Commonwealth, and targeting certain areas is the only

way DEQ can approach its task of representing the waters of the Commonwealth. However, the lack of a reporting mechanism when there is general agreement that a stream is impaired, despite having no DEQ monitoring data, undermines the value and use of the 303(d) list as an indication of overall water quality in Virginia. This issue illustrates the potential that the 303(d) list presently has for understating impairment, and thus indicates the limitations of the 303(d) list for making generalizations about the status of State water quality.

Inconsistencies Exist in the Monitoring Strategies and Methods Utilized by the Six DEQ Regions. The ambient water quality monitoring network is intended to be representative of the entire State. Under the current structure of DEQ, the central office monitoring staff serve as advisors to the regional monitoring staff. The regions submit annual monitoring strategies to the Office of Water Quality Assessment in DEQ's central office for review only, not for approval. Comments on these plans are provided to the regions, but it is up to the regions to decide whether to implement whatever comments may have been made.

Examination of the regional monitoring strategies has indicated inconsistencies in monitoring strategies and sampling methods which in turn raise questions about how representative the monitoring network and the reports generated from the monitoring network actually are. For example, one region has indicated a substantial reliance upon placing monitors upstream and downstream of point source dischargers. As this region's monitoring plan states:

> ...many stations are biased in their locations. Most notably some of the stations are associated with point source discharges, sampling both upstream and downstream conditions...they cause a bias when used for regionwide water quality assessments.

This approach differs from other regional approaches of prioritizing coverage of all waterbodies regardless of point source dischargers, and thus has the potential to bias not only the regionwide assessment, but the statewide water quality assessment as well.

Examination of the biological monitoring strategies of the six regions has also indicated a consistency concern. Biological monitoring is conducted based on accepted EPA sampling protocols. All of the regions appear to use Protocol II as found in the EPA document "Rapid Bioassessment Protocols for Use in Streams and Rivers." Examination of the regional strategies have indicated that at least one region utilizes Protocol I for a significant amount of their biological monitoring. While this protocol is an accepted method of biological monitoring, results of monitoring from Protocol I and Protocol II are difficult to compare. Thus, incorporation of these data into the 305(b) and 303(d) reports for statewide analysis may not be entirely accurate.

Both of these inconsistencies appear to be the result of an apparent lack of central office oversight of the regions and deference to the decisions made by the regions concerning the water monitoring programs. With the regionalization of this program, it has become increasingly difficult for the central office staff to keep the six regions on a

consistent course as each region develops its own strategies and makes its own decisions on how to implement the monitoring programs. This apparent lack of central office oversight and deference to regional decisions is illustrated by the following case study:

> *The Pagan River was not listed as impaired in the 1994 303(d) list. In the draft 1996 303(d) list taken before the public, this river was again not listed as impaired despite numerous questions from concerned citizens and despite enforcement action taken against the major discharger into the Pagan. DEQ staff state that subsequent review of monitoring data from the Pagan, reviewed largely due to a State lawsuit against the major discharger to the river, indicated a computer programming error that had mistakenly not found impairment. As a result of this computer error, extremely high levels of fecal coliform bacteria were excluded from the analysis of the water samples. Further review indicated that the river was impaired during the 1996 reporting period, as well as during the 1994 reporting period. In fact, this river has now been identified as a "high priority" impaired waterway. Interviews with DEQ staff have indicated that the DEQ region in which the Pagan River is located was asked by DEQ central office staff multiple times in both 1994 and 1996 if the Pagan River should be listed. The region reiterated its decision, apparently without taking a second look at the monitoring data, that the Pagan would not be listed. This regional decision to not list the Pagan River prevailed until the enforcement action led to DEQ's discovery of the computer programming error.*

The regional monitoring personnel are probably in the best position to decide regional monitoring needs, but may not be best suited to decide statewide monitoring needs. The central office water quality assessment staff and biological monitoring staff should continue to be accessible to the regions for technical guidance. However, if DEQ intends to use the 303(d) list to represent statewide water quality, DEQ needs to establish and implement agency-wide monitoring strategies and sampling techniques in order to ensure that the 305(b) and 303(d) reports contain accurate, comparable data and are representative of the State as a whole. DEQ central office staff should have the clear authority to monitor regional implementation of these strategies and techniques to ensure that data is representative and accurate. Until DEQ can ensure the use of accurate and consistent data in generating the 305(b) and 303(d) reports, the reliability of these reports in accurately reflecting water quality in the State will be limited.

The 303(d) Excludes Evaluated Streams and Waters Naturally Impaired, and Does Not Include Those Waters Threatened for Impairment. The draft 1996 305(b) report indicates that 2,015 miles of Virginia's free flowing streams and rivers are impaired for one or more designated uses. This differs from the 303(d) accounting of impaired river miles (1,452 miles impaired) because the 305(b) report is based on both monitored streams and evaluated streams (evaluated data is from volunteer monitoring and professional judgments of water quality). By including the evaluated streams, the total amount of assessed miles of rivers and streams is 31,958

(compared to 29,243 that are monitored by DEQ, as reported in the 303(d) list). Thus, DEQ reports that 6.3 percent of the assessed stream miles are impaired.

The draft 1996 305(b) also includes a "fully supported but threatened" category for designated uses. According to DEQ water quality assessment staff, this category was used for certain waterbodies, such as swamps, that the regional offices categorized as naturally not meeting water quality standards. These are excluded from the "impaired" designation because there is nothing that DEQ can do to improve these waterbodies through regulation of point source and non-point source dischargers. According to the 1996 draft 305(b) report, an additional 1,820 stream miles, or 5.7 percent of the total miles evaluated, fall into this threatened category. The draft 305(b) report goes on to state that the remaining 88 percent of the total miles evaluated fully support all assessed uses (Table 5).

Table 5

DEQ's 1996 Assessment of Monitored and Evaluated Streams

Level of Use Support	Number of Miles	Percentage of Miles
Fully Supporting	28,122	88.0%
Fully Supporting But Threatened	1,820	5.7%
Impaired	2,015	6.3%
Total Miles Monitored and Evaluated	31,957	100%

Source: JLARC staff analysis of the draft 1996 *Water Quality Assessment Report*.

According to the draft 1996 305(b) report, the miles assessed as fully supporting but threatened were identified through monitoring data. If this category did in fact represent impaired waterways (albeit impaired due to natural causes), then they should have been included in the calculation of percentages of stream miles impaired based on monitoring data that appeared in the 303(d) list. The assertion derived from the 1996 303(d) list that 95 percent of the monitored stream miles are free of impairment is not correct. In fact, if the 1,820 stream miles assessed through monitoring data as fully supporting but threatened (meaning naturally impaired) is combined with the 1,452 stream miles already identified as impaired in the 303(d) list, the result is that 11 percent of the monitored miles were impaired. Thus, regardless of what DEQ can do about naturally impaired waterways, only 89 percent of the monitored stream miles were free of impairment, and this should be reported accurately (Table 6).

Of potentially more significance than the improper accounting of impaired waterways in Virginia is DEQ's apparent misuse of the fully supporting but threatened category. According to the EPA "Guidelines for Preparation of the 1996 State Water Quality Assessments," a waterbody is fully supporting but threatened for a particular

Table 6

Actual Impaired Stream Miles

Miles Identified as Impaired on the 1996 303(d) List	Miles Identified as Fully Supporting But Threatened*	Total Stream Miles Impaired	Total Stream Miles Monitored	Percentage of Monitored Stream Miles Impaired
1,452	1,820	3,272	29,243	11.2%

Note: According to DEQ staff, this category was used for waterbodies impaired due to natural causes. According to the draft 1996 305(b) report, these miles were identified through monitoring data.

Source: JLARC staff analysis of the draft 1996 305(b) and 303(d) reports.

designated use when it "fully supports that use now but may not in the future unless pollution prevention or control action is taken because of anticipated sources or adverse pollution trends." The guidance goes on to say that this category should be used:

> ...to describe waters for which actual monitoring or evaluative data indicate an apparent declining water quality trend...Fully supporting but threatened is not appropriate during temporary impairment of designated uses...The threatened category may be appropriate prior to anticipated impairment, but while actual impairment is occurring, partial support or nonsupport should be reported.

Based on this EPA guidance, it appears that DEQ has misused the "fully supporting but threatened" category in the 1996 305(b) report. By not applying the threatened category correctly, DEQ does not appear to be examining trends in water quality, but is only focusing on waterbodies that are already impaired as identified in each separate two year data collection cycle. It would be useful for the State to identify waterbodies of declining quality prior to actual impairment. This appears to be EPA's intention for the fully supporting but threatened category. DEQ states in their response to the exposure draft of this report, "the manner in which DEQ uses the 'fully supporting but threatened' category has indeed caused some confusion. DEQ plans to revisit this issue in depth prior to the generation of the 1998 report."

If the 303(d) is going to be used by DEQ management to assess overall water quality in the State, it should assess actual problems, as well as potential problems, so resources can be focused in those areas. The naturally impaired waterbodies, the fully supporting but threatened waterbodies, and even the waterbodies identified as impaired by evaluative means (as opposed to monitoring) could be separate parts of the 303(d) and not necessarily subject to Total Maximum Daily Load (TMDL) calculations. This would provide the public with more complete water quality data. It would not only make the 303(d) more representative of the water quality of the State as a whole, but would also establish the 303(d) as an important planning document for future water quality improvement initiatives.

A Metals Analysis of Water Samples Was Not Included in the 1996 303(d) List. The 1996 303(d) list did not include statewide water monitoring for some toxicants, specifically metals, due to a scientific debate concerning how metals concentrations should be determined. DEQ recently adopted water quality standards for potentially toxic metals as dissolved metals. This decision was based on DEQ staff's scientific opinion that toxic metals will not interact with aquatic organisms unless they are dissolved. The water quality standards based on dissolved metals concentrations was a change from previous standards based on total recoverable metals.

This switch signified a change in sampling techniques as well, and techniques for dissolved metals have only recently been developed by DEQ through a pilot study of the Pigg River in Rocky Mount. All the data on metals previously collected by DEQ has been called into question, and DEQ has not done any water monitoring for metals, other than the pilot project, since 1992. DEQ's move to disregard past metals data is supported by the fact that the United States Geological Survey (USGS) repudiated its own data on total recoverable metals prior to 1992. The USGS repudiation was based on an apparent lack of correlation between total recoverable metals data and dissolved metals data.

The 1994 303(d) list had over 35 stream segments listed as possible areas of metals contamination. The listing of these segments was based on suspected metals concentrations in effluents of certain permitted sources. There was no direct evidence of State water quality standards violations, since there was no useful data on metals concentrations in State waters at that time.

However, all of these segments were excluded from the 1996 list, unless they were impaired for other non-metal contamination. The segments were omitted because there was still no useful data on metals concentrations. Yet, there was no objective change from 1994 in terms of what was known about the potential for metals contamination in the State's waters. While DEQ has continued to monitor sediment and fish tissues for metals concentrations, there are no standards to serve as a benchmark for that data.

DEQ is presently beginning its new metals water monitoring program using "clean" or "ultra clean" sampling techniques. According to DEQ monitoring personnel, this will yield much more accurate assessments of metals contamination, and will be much more expensive to undertake. Until water samples are analyzed for metals concentrations statewide, it is difficult to assess whether metals contamination will be an issue for Virginia's waters. Previous evaluations of the water samples have indicated that metals contamination is a potential source of impairment for State waters. DEQ should not discount this potential source of impairment until monitoring data is obtained on a statewide, long-term basis through the sampling techniques presently being developed.

DEQ's Current Biological Monitoring Program May Be Insufficient. Many states, including Virginia, have historically relied upon chemical assessments of water quality through ambient monitors as the focus of their monitoring programs.

Biological monitoring, particularly the monitoring of macro-invertebrate organisms, or benthic monitoring, has more recently emerged as at least an equally important tool for assessing water quality. In fact, many argue that the value of benthic monitoring data supersedes chemical monitoring data because benthic monitoring is an examination of the aquatic organisms that spend their entire lives in the water in question; they are continuous monitors of environmental quality. A potential limitation of chemical monitoring is that it can be influenced by the short-term conditions of the stream at the time the sample is taken. The following case study provides an example of the strength of benthic monitoring and the risks of not examining water quality based on the health of organisms in the water:

> *In the state of Ohio, instream water monitoring for the 305(b) and 303(d) reports consists of both chemical and biological assessments at nearly all of the sampling sites. The Ohio Environmental Protection Agency (OEPA) experience with benthic monitoring has shown that this type of monitoring can actually cost less, in terms of personnel (salary, fringe benefits, and overtime), supplies, equipment, travel, communication, utilities and rent, maintenance, computer charges, printing, and other miscellaneous expenses, than chemical monitoring. In OEPA's 1994 305(b) report, the Ohio Water Resource Inventory, OEPA estimated that 41 percent of the impaired waterways detected in the 1994 reporting period would not have been detected had they relied upon chemical monitoring alone. This is compared with about seven percent of the impaired waterways that would not have been detected if the state relied on biological monitoring alone. According to these results, biological monitoring is an integral component of Ohio's monitoring program.*

At the very least, there appears to be agreement in the scientific community that both chemical monitoring and biological monitoring are valuable tools in assessing water quality. In fact, DEQ asserts in the response to the exposure draft of this report that "the majority of streams placed on the 303(d) list were listed because of non-support of fecal coliform standards or biological monitoring expectations. Poor scores on these two biological indicators are the reason for most streams to be listed, not chemical indicators." Virginia currently maintains about 200 benthic monitoring stations across the Commonwealth. When this is compared with the 1,114 chemical monitoring stations presently in use in Virginia, the disparity of resources allocated between the chemical and biological monitoring programs is apparent. DEQ's relative lack of biological monitoring raises the possibility that DEQ is not finding impairment where impairment exists due to an over-reliance on chemical monitoring.

DEQ Analysis of Monitor Data with Low Sampling Frequency is Problematic. One of the problems with DEQ's monitoring effort is that the majority of stations collect eight or fewer measurements in a two-year period. DEQ staff have observed that there may be problems with drawing a conclusion that a stream segment is polluted based on a small number of measurements. Therefore, because it cannot be

concluded with confidence that the waters are impaired, DEQ has established some screens based on statistical methods to exclude these results from its listing of impaired waters.

DEQ is concerned that the water quality standards violations found at monitoring stations that are not monitored frequently over the two-year reporting schedule may overstate actual stream impairment. This would result in DEQ listing a waterbody in the 303(d) list when actual impairment does not exist. For example, if a waterbody has one violation out of eight samples, the waterbody would be listed as impaired under a simple percentage calculation. However, due to the low frequency of samples, there is a possibility that the one violation is unduly influencing the violation percentage and that the waterbody is not really impaired. When a waterbody has only one violation in eight samples, DEQ has chosen not to list the waterbody as impaired.

DEQ has correctly identified a potential problem with its low frequency monitoring data, and has attempted to address this problem with a statistical approach that initially seems appropriate. However, there is another aspect of the problem of low frequency monitoring data that DEQ has not addressed. While it is true that data from monitors with a low sampling frequency may *overstate* the "true" level of violations, the data may also *understate* the "true" level of violations. DEQ does not appear to consider this other hypothesis.

For example, at a quarterly monitoring station there are a maximum of eight data points in the two-year cycle required of the 305(b) and 303(d) reports. Even if it is known that the water around that monitor has a violation percentage of 10 percent (the threshold of the partially supporting designation), there is still a 43 percent chance, using the same methodology that DEQ uses to check for overstatement of impairment, that there could be zero violations out of the eight samples. In such a case, DEQ would fail to recognize this impaired waterbody. In fact, if the same statistical test were applied to all the 776 monitoring stations that measured fecal coliform listed in the draft 1996 305(b) report, for example, only three percent of the stations could provide sufficient evidence that they were not impaired, when taking small sample sizes into account. This issue and JLARC staff's findings are discussed in more detail in Appendix D.

When monitoring data is collected infrequently over a reporting period, the results can be subject to a high degree of sampling error. DEQ is justified to recognize this problem in analyzing their monitoring data. However, if DEQ attempts to solve the problem of low sampling frequency through a statistical means, the agency should consider that it is possible that the data could either overstate or understate the "true" level of impairment. This needs to be addressed in order for the 303(d) to be an accurate portrayal of water quality in the Commonwealth.

Recommendation (15). **The Department of Environmental Quality should list all known impaired waterways on the 303(d) list and should monitor those waterways with a significant suspicion of impairment. The Department should consider present and future workload requirements of its monitoring**

staff under an intensified monitoring program and adjust staffing if it is deemed necessary to provide a more representative assessment of the Commonwealth's water resources.

Recommendation (16). **The Department of Environmental Quality should consider including in the 303(d) list those stream miles naturally impaired, evaluated as impaired, and fully supporting designated uses but threatened for impairment as defined by the EPA. These stream miles should appear on the 303(d) list in the same format as the impaired waterways identified through DEQ monitoring. These stream miles may not be subject to Total Maximum Daily Load calculations, but should be included in order to provide all interested parties with a more thorough understanding of water quality in the Commonwealth and to provide guidance for future resource allocation to address current and potential water quality problems.**

Recommendation (17). **The Department of Environmental Quality should establish statewide monitoring strategies and sampling techniques to ensure the accuracy and comparability of regional data. DEQ should give the central office water quality assessment staff authority to ensure that these strategies and techniques are followed consistently across the State. DEQ should consider staffing needs of the central office of water quality assessment in order to implement this intensified regional coordination function.**

Recommendation (18). **The Department of Environmental Quality should consider increasing its use of biological monitoring stations to provide a more accurate assessment of water quality throughout the river basins of the Commonwealth. The Department should report cost estimates of an adequate biological monitoring program to the Senate Finance and House Appropriations Committees.**

Recommendation (19). **The Department of Environmental Quality, when examining the results of monitor data with low sample frequencies, should recognize that the possibility exists that the data understate the "true" level of impairment. This should be taken into consideration before a waterbody with low sampling frequency is left off the 303(d) list. Additionally, since the meaning of data from low-sample frequency stations is unclear, DEQ may wish to place greater effort on obtaining more samples from these stations.**

DEQ Does Not Have Adequate Oversight of Source-Reported Monitoring Data, and the Source-Reported Monitoring Data Is Not Always Accurate

DEQ's assessment of facility compliance in the VPDES permit program is largely dependent upon source-reported data through the Discharge Monitoring Report (DMR) requirements in permits. JLARC staff's examination of VPDES permit files indicate that most compliance problems with water permittees are identified through the self-monitoring that permittees report on their DMRs, not facility inspections (this

differs from the air program where inspections are DEQ's principal method of checking compliance with permits). Due to this reliance on self-monitoring conducted by the permitted sources, it is imperative that the monitoring data be analyzed and reported correctly, and that DEQ maintain adequate oversight of this process to ensure its integrity.

JLARC staff's analysis of the DMR processes shows declining performance trends for laboratories conducting analyses for VPDES permitted facilities, as reported in an EPA driven laboratory audit program, indicating the possibility that DMR data could sometimes be inaccurate. Recent cases of record falsification have added to the concern that DMR data is not always accurate. It appears that Virginia has never had adequate oversight of the DMR process, and any oversight which may have existed in the past has diminished recently. Virginia currently lacks a laboratory certification program for laboratories conducting analyses for VPDES permitted facilities. Because of this, there are no minimum requirements that have to be met by these laboratories in order to operate. Also, Virginia used to have the ability to conduct an independent test of a permittee's effluent through the mobile aquatic laboratory program. This program was canceled at the agency's initiative in early 1994.

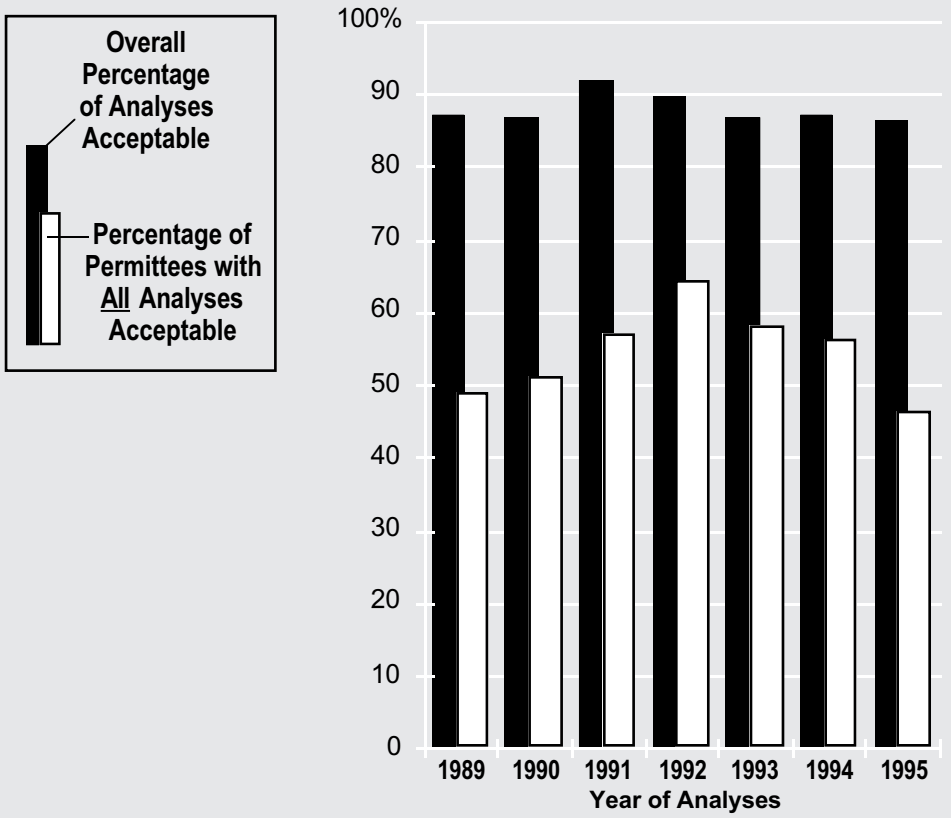
Results of the DMR-QA Program Indicate Declining Accuracy of Sample Analysis. The EPA driven Discharge Monitoring Report-Quality Assurance (DMR-QA) program serves as a check on the source-reported DMR data through use of Performance Evaluation (PE) samples sent to the analyzing laboratories (both commercial and source-run) to emulate possible effluent samples from the permitted source. This program is administered to all major sources and a handful of minor sources chosen by DEQ. The samples are analyzed by the laboratories and the results are sent back to EPA for comparison with the actual make-up of the samples. This program has been in existence since 1980 and is conducted on an annual basis. States are examined for their permitted facilities' ability to analyze all parameters correctly (meaning the results of all analyses are within the acceptable confidence interval for the actual make-up of the sample), as well as the overall level of correct analyses among the permitted facilities. Recent trends in the assessment of laboratories used by Virginia VPDES sources through the DMR-QA program indicate problems with the DMR data reported to DEQ.

In examining results from 1989 to 1995 (the last completed report), JLARC staff found that the percentage of Virginia permittees with all chemical analyses acceptable (facilities with acceptable results for all parameters) was less than 50 percent (46 percent) in 1995. This was the lowest point it had ever been during the seven years examined. The same was true for the State's overall percentage of analyses acceptable (the average level of acceptable analyses aggregated across all the parameters), which at 86 percent, was the lowest it had ever been over the seven year period. Figure 4 presents the historical DMR-QA results graphically.

Nation-wide comparisons were not available for the 1994 and 1995 DMR-QA studies, but in 1993, Virginia was twenty-second overall for the percentage of permittees with all analyses acceptable (they had acceptable results for all the parameters tested), and forty-third overall in total percentage of analyses acceptable (the statewide average).

Figure 4

Ability of Virginia Laboratories to Correctly Analyze Effluent Samples as Reported through the DMR-QA Program, 1989-1995



Source: JLARC staff analysis of EPA DMR-QA summaries.

This ranking in DMR-QA accuracy reports raises serious concerns about the accuracy of the DMR data, especially since Virginia's most recent percentages are even lower than the 1993 percentages used in the above rankings.

DEQ's Check on DMR Falsification Is Inadequate. The data contained in DMRs drive DEQ's compliance functions for the VPDES permit program. If the effluent monitoring data reported to DEQ by the permitted dischargers is incorrect, whether deliberate or not, DEQ's ability to enforce permit limits is severely hampered. Under the Federal Clean Water Act and Virginia's State Water Control Law, persons who knowingly, willfully, or negligently violate the law can be prosecuted criminally for their offenses. Falsification of monitoring records is considered a felony in the Commonwealth. Since 1991 (when DEQ began to maintain a database on criminal enforcement cases), there have been 52 investigations concerning possible DMR or other record falsification, which constituted about 40 percent of DEQ's criminal investigations over the time period.

Currently, the agency's only systematic check for report falsification is the professional judgment of DEQ compliance auditors (the regional personnel responsible for entry and analysis of DMR data), inspectors, and permit writers. DEQ expects that questionable DMR entries will be identified by visual review of the DMRs by these DEQ staff. If questionable entries are identified, DEQ staff will conduct follow-up inspections to verify that the DMR data is correct. However, this check on DMRs may not be adequate to consistently detect falsified reports, as the following case studies illustrate:

> *In early 1993, a manager of a commercial laboratory was indicted for multiple counts of document falsification. The manager had been charged with 50 felony counts alleging falsification of reports sent to DEQ predecessor agencies. Lab employees interviewed stated that the falsifications were occurring as far back as mid-1989, and the indictments alleged that falsifications occurred as late as November 1992. Thus, it appears that the laboratory may have been falsifying records for more than three years before it was discovered and addressed by the State. The laboratory manager pled guilty to three misdemeanors.*
>
> * * *
>
> *In 1994, a wastewater facility operator for a large industrial discharger was investigated for DMR falsification. The industrial discharger had a long history of noncompliance and had been under a consent order issued by the State Water Control Board enforcement staff since 1991. The investigation concerning this individual's involvement with the large industrial discharger revealed evidence of DMR falsifications occurring as far back as October 1991 (approximately two and one-half years before the investigation). The investigation was hampered by the operator's alleged destruction of laboratory records, which limited the ability to prove many of the alleged falsifications.*
>
> *However, it was discovered that in two consecutive months in 1993, this individual submitted DMRs for two outfalls at the large industrial discharger containing 19 parameters with 36 identical numbers for multiple tests including Fecal Coliform, Total Cyanide, and Total Nitrogen. According to one DEQ employee, these identical numbers in two consecutive monthly DMRs should have signaled a possible problem, yet these questionable DMR entries were not identified by DEQ staff in 1993. These questionable DMRs were identified in late 1994 only through the initiative of DEQ enforcement personnel investigating the same individual for criminal violations at other permitted dischargers. Through this investigation, the individual was suspected of 101 DMR falsifications at eight facilities, including the large industrial discharger, for which the individual worked. In 1996, this individual pled guilty to 23 counts, including DMR falsification, of violating the Clean Water Act. The receiving stream of the large industrial dis-*

charger for which identical DMR numbers were submitted has been impaired with excess fecal coliform bacteria for at least the last four years.

The substantial time period between the first alleged falsification and the investigation in each of these case examples indicates that DEQ's current check for DMR falsification is inadequate. Furthermore, in at least one of these cases, obviously questionable DMR results were not identified in the initial DEQ staff review of the DMRs.

The Lack of a Laboratory Certification Program in Virginia May Be Problematic. In Virginia, there are no minimum requirements for operation of laboratories for VPDES sample analysis (there were some protocol requirements for toxicity testing through the former Toxics Management Regulation). This adds to the question of the validity of source-reported effluent data. At present, the most significant check on laboratories used to analyze VPDES facility samples is the laboratory inspection program for permitted facilities. DEQ's strategy is to conduct laboratory inspections whenever technical inspections are conducted at VPDES permitted facilities. Inspection frequency for technical inspections is based on the size of the facility and the facility's potential for harm to the environment. In reality, however, staff resources and management's commitment to inspections drive the inspection frequency, and as current data indicates, inspections have declined (to be discussed later in this chapter).

Many facilities in the Commonwealth use commercial laboratories to conduct their effluent sample analysis. DEQ has the authority to conduct inspections of these commercial laboratories at essentially the same frequency as the source-run laboratories. However, its only recourse when problems are found at a commercial laboratory is to take corrective action against the VPDES permitted facility. While this may improve sample analysis for that facility (for example, that facility may stop using the laboratory in question), it does not prohibit other facilities from using that laboratory.

To address the lack of minimum laboratory requirements and an inability to ban permittees from using certain unqualified laboratories, other states have developed laboratory certification programs. Laboratory certification programs force permitted facilities to utilize only those laboratories that have met certain state-determined minimum requirements and have been certified to operate in that state. State certification programs also apply to the in-house laboratories used by some facilities. The benefits of such a laboratory certification program are:

- direct control over analytical activity by the regulatory agency;
- greater assurance that the reported data is accurate and representative of the discharge;
- minimum standards of quality; and
- improved control of factors influencing the quality of the environment.

The cost of a laboratory certification program is usually recovered through certification fees. Laboratories that consider operating in a state with a certification program must make a business decision as to whether or not they want to operate in the state. For example, 14 Virginia-based laboratories have chosen to be certified in the North Carolina certification program and have paid the necessary fees to North Carolina. These laboratories have sought certification in North Carolina primarily to maintain or establish clients in that state.

Some of these laboratories indicated that they wanted to use the certification as a credential and marketing tool to develop business in Virginia, but had to go to North Carolina since Virginia did not have a program. Two of these laboratories indicated that they sought certification from North Carolina, to a large extent, in order to have an outside regulatory entity audit the laboratory in order to improve the laboratory's quality assurance/quality control (QA/QC) procedures. When asked why the DEQ laboratory inspection program did not serve this function, the laboratories indicated that the DEQ inspection was not as comprehensive as the North Carolina certification inspections and was not adequate to suit the laboratories' needs as far as QA/QC was concerned.

As with any regulatory function, a certification program in Virginia would have to include sufficient checks to ensure compliance with certification requirements. The program would require additional staff resources to conduct the required inspections and other compliance checks, such as a performance evaluation sample program (much like the DMR-QA program), on the certified laboratories. Again, these costs could be addressed by fees paid by laboratories seeking certification.

The General Assembly could require that a laboratory certification program be designed to meet program costs and ensure a higher level of accuracy among laboratories doing business in Virginia. Interviews with laboratories and DEQ staff have indicated that a national certification program could be developed in the future. If such a program is developed, and would meet the needs identified for Virginia, the General Assembly may wish to require inclusion in the national program instead of implementing a separate State certification program. Other possible beneficial uses of this program could be special studies, DEQ staff training, and facility operator education.

Cancellation of the Mobile Lab Program Has Limited DEQ's Ability to Test Permittees' Discharges. Prior to DEQ's cancellation of the program in early 1994 for budgetary reasons, DEQ had a mobile laboratory that would travel to VPDES permitted sources and conduct complete environmental site audits of the facilities. These environmental audits included effluent bioassays, effluent chemistry analysis, tissue and sediment collection and analysis, and benthic organism and fisheries evaluations. The mobile laboratory would go on-site for 7 to 10 days to conduct its site audits. The selection of sites to be audited was based primarily on regional staff recommendations. The mobile laboratory provided a significant amount of technical assistance to facility staff on sampling and analysis. This program also gave DEQ visibility in the regulated community. In addition, the mobile laboratory served as a check on source-reported DMRs by conducting its own analysis.

The mobile laboratory's audit served as a check on the DMR data by performing its own collection and analysis of effluent samples which then could be compared to those collected and analyzed by the source as reported on the DMRs. Since the laboratory was on-site for a week or more, it could provide a more accurate picture of effluent make-up than the source grab samples (a one-time sample often used for analysis in DMRs). In addition, these audits helped to solve the potential problem of sample shopping (a wide-spread practice, according to DEQ staff, in which some sources take samples at times when the effluent will show compliance — for example, times of low production or low flow) by conducting multiple samples over the study period, thus excluding changes in production and/or flow from influencing effluent characteristics.

The following case study illustrates the potential informational value of the mobile lab program:

> *In 1993, the mobile lab was sent to conduct an effluent toxicity assessment of a Northern Virginia Publicly Owned Treatment Works (POTW). This particular POTW did not have a toxics monitoring program (TMP) in place at the time of the mobile lab assessment. The mobile lab assessment of this POTW found, among other things, the following: (1) the effluent was acutely toxic to invertebrates at times of critical flow; (2) the effluent was chronically toxic to fish during very high flows; (3) the effluent contained concentrations of ammonia that created in-stream water conditions that exceeded the Water Quality Standard for ammonia; (4) the effluent contained a concentration of total kjeldahl nitrogen that exceeded the permit limit; and (5) the effluent contained concentrations of total residual chlorine that exceeded the permit limit. Thus, the mobile lab assessment provided information about a parameter of concern (ammonia) not regulated by the existing permit, it showed permit exceedences that may not have shown up in the normal DMR sampling schedule, and since this POTW did not have a TMP, it provided toxicity information for the facility's effluent that did not exist prior to the mobile lab assessment.*

Recommendation (20). **The General Assembly may wish to consider studying the adoption of a laboratory certification program for laboratories wishing to conduct sample analyses for environmental permit holders in the Commonwealth. The General Assembly should consider including Virginia laboratories in any national certification or accreditation programs that may be developed if these national programs are determined to be adequate to meet the needs identified for Virginia.**

Recommendation (21). **The Department of Environmental Quality should consider re-establishment of a mobile lab program to assess source-reported DMR data for compliance with permit limits and water quality standards.**

DEQ'S NUMBER OF INSPECTIONS HAS DECLINED SIGNIFICANTLY

JLARC staff's examination of DEQ's execution of the inspection programs in air and water has raised some significant concerns as to the agency's ability to assess the compliance status of Virginia's permitted pollution dischargers. As stated previously, air inspections are the major check of facility compliance with air permit requirements, and thus serve a vital function of ensuring that permits are followed, and air quality is maintained or improved. The water permit program, while relying heavily upon source self-monitoring to show compliance, also relies upon water inspections to identify operational deficiencies that may cause the permit violations identified through DMR data, as well as to find unpermitted discharges that would otherwise remain unknown to DEQ.

Air inspections in Virginia are not only lagging behind the EPA Region III average, but are last in the region, and trends show that Virginia's number of air inspections is declining. Similarly, the yearly inspection counts in the water program put Virginia at its lowest level in the last six fiscal years. There are indications that inspection procedures vary by media, but more importantly, by region within the same media. Also, employee survey responses by DEQ inspection staff raise concerns about the quantity and quality of inspections.

DEQ's Air Inspection Percentage for Major Permittees Lags Behind Other States in EPA Region III

As part of the assessment of DEQ's inspection program for facilities permitted to emit pollution into the air, JLARC staff examined EPA data for comparison with other states. Examination of EPA Region III data shows that Virginia has inspected its major sources at a level below the Region III average for Federal fiscal years (FFY) 1993 through FFY 1995 (October 1 through September 30 of each year). In FFY 1995, Virginia's percentage for major facility inspections was 22 percentage points below the Region III average. An examination of the data since FFY 1993 shows that the gap between Virginia's percentage for inspecting major facilities and the Region III average has been increasing over time (Table 7). Further examination of the EPA Region III major source inspection data indicates that Virginia's inspection percentage was also the lowest in the region over the three reported federal fiscal years (Figure 5).

DEQ maintains its own tracking of Level II and above stationary source inspections conducted each FFY (which includes sources other than those categorized as major, which were not included in the EPA data presented above). These data were examined for FFY 1990 through FFY 1996. Over this entire time period, using FFY 1990 as the starting point and FFY 1996 as the ending point, the number of air inspections conducted has declined by approximately 21 percent. In fact, examination of the inspection numbers from their peak in FFY 1992 to the last year for which data was available, FFY 1996, indicates a decline of approximately 30 percent (Table 8, page 65).

Table 7

Percentage of Major Permitted Air Sources Inspected, Virginia *vs.* EPA Region III Average (FFY 1993 to FFY 1995*)

Federal Fiscal Year	Number of Major Sources in Virginia	Number of Inspections in Virginia	Percentage Inspected in Virginia	EPA Region III Average Percentage Inspected	Virginia Percentage Compared to EPA Region III Inspection Percentages
1993	1,268	874	69%	87%	-18%
1994	1,380	936	68%	88%	-20%
1995	1,441	913	63%	85%	-22%

Note: EPA Region III FFY 1996 numbers were not available at the time of this study.

Source: JLARC staff analysis of EPA Region III data on major air sources inspected.

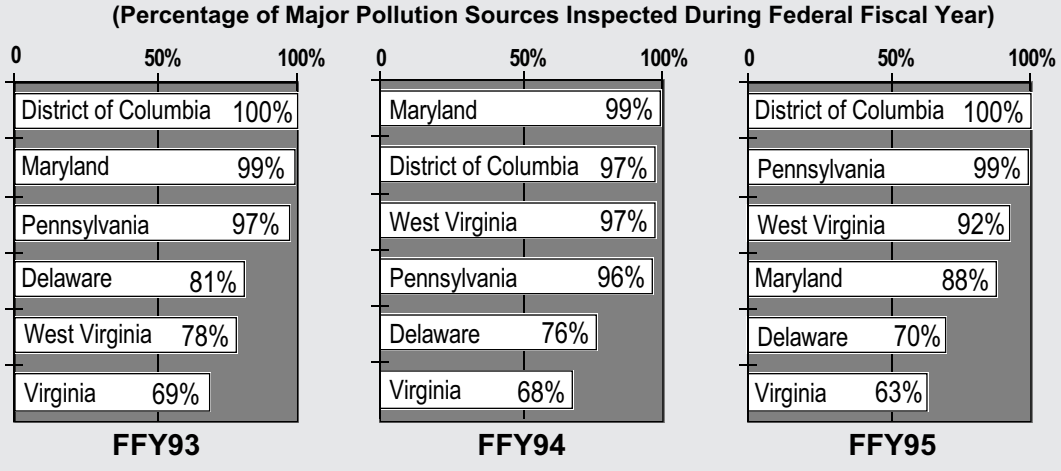
DEQ staff have presented a number of reasons for the overall decline in inspections conducted between FFY 1990 and FFY 1996 and the fluctuations from one year to the next. The reasons can be generalized into four categories:

1. Staff Resources

2. More Complex Facilities/Regulations/Permits

Figure 5

Comparison of Region III States for Air Inspection Frequency



Source: JLARC staff analysis of EPA Region III air inspection data.

Table 8

Number of Level II and Above Stationary Source Air Inspections, by Federal Fiscal Year

Federal Fiscal Year	Statewide Air Inspections
1990	2,986
1991	2,881
1992	3,385
1993	2,054
1994	2,756
1995	2,285
1996	2,354
Overall Percentage Change FFY 1990-1995: -21% Overall Percentage Change FFY 1992-1995: -30%	

Source: JLARC staff analysis of DEQ Air Inspection Data.

3. Increases in Non-Field Work Responsibilities for Inspectors

4. Changes in Processes that may have Caused One-time Impacts on Inspection Numbers

This reduction in the number of inspections conducted, coupled with an increase in the number of permitted sources in the Commonwealth's air program over the same time period, indicates that DEQ's air inspection program: (1) has not kept pace with changes, and (2) may not provide an accurate assessment of facility compliance throughout the State. Some of the DEQ regions have had a more difficult time keeping pace than others. For example, the draft FFY 1996 Inspection Targeting System (ITS) plans for the Northern Virginia Region indicated a decline in inspection commitments from the FFY 1995 ITS plans of approximately 47 percent for the Springfield Office and 63 percent at the Fredericksburg Office. According to DEQ management, "human resource shortages" was the reason for this decline in inspection commitments.

In sum, air inspections in Virginia are on the decline, and this appears to be primarily attributed to DEQ staffing levels, increased inspection times (due to more complex facilities, regulations, and permits), and increased non-fieldwork related responsibilities of inspection staff. There is not a documented reduction in the need for facility inspections.

The Number of DEQ Water Inspections Conducted Is the Lowest in Six Fiscal Years

In examining DEQ water inspection data from the last six fiscal years (FY 1990 to FY 1996), JLARC staff has found that the overall number of water inspections for FY

1996 was the lowest annual total during the six-year period. Overall water inspections (which includes technical, laboratory, sampling, unscheduled, and compliance inspections, as well as Virginia Pollution Abatement, or VPA, inspections, which are conducted for facilities with a potential for non-point source discharges into State waters) have decreased by 38 percent from FY 1990 to FY 1996. Of the five types of inspections for which data is available since FY 1990 (unscheduled inspections started in FY 1993), four of these reached their lowest point during FY 1996. The remaining program, sampling inspections, reached its lowest point in FY 1996 since FY 1991. Each inspection program examined over this time period shows an overall decrease in frequency, except for the sampling inspections, which shows an overall increase since FY 1990, but an overall decrease since FY 1991. Figure 6 illustrates the trend for each type of inspection in the examined time period.

JLARC staff further analyzed FY 1990 to FY 1996 water inspection data based on time periods in DEQ's history. These periods were FY 1990 to FY 1993 (pre-DEQ, as the State Water Control Board), FY 1994 (DEQ before the reorganization in April 1995), and FY 1995 and FY 1996 (the reorganized DEQ). This analysis showed that five out of the six inspection programs saw their largest percentage decrease in inspections conducted under the reorganized DEQ (Table 9).

JLARC staff also analyzed the change in the number of inspections between FY 1995 and FY 1996, a full year after the reorganization. Once again, all six inspection types examined showed significant declines in the number of inspections conducted (Table 10, page 68). In fact, when broken down by yearly changes, four inspection types

Table 9

Percent Change in Water Inspections Conducted FY 1990 to FY 1996

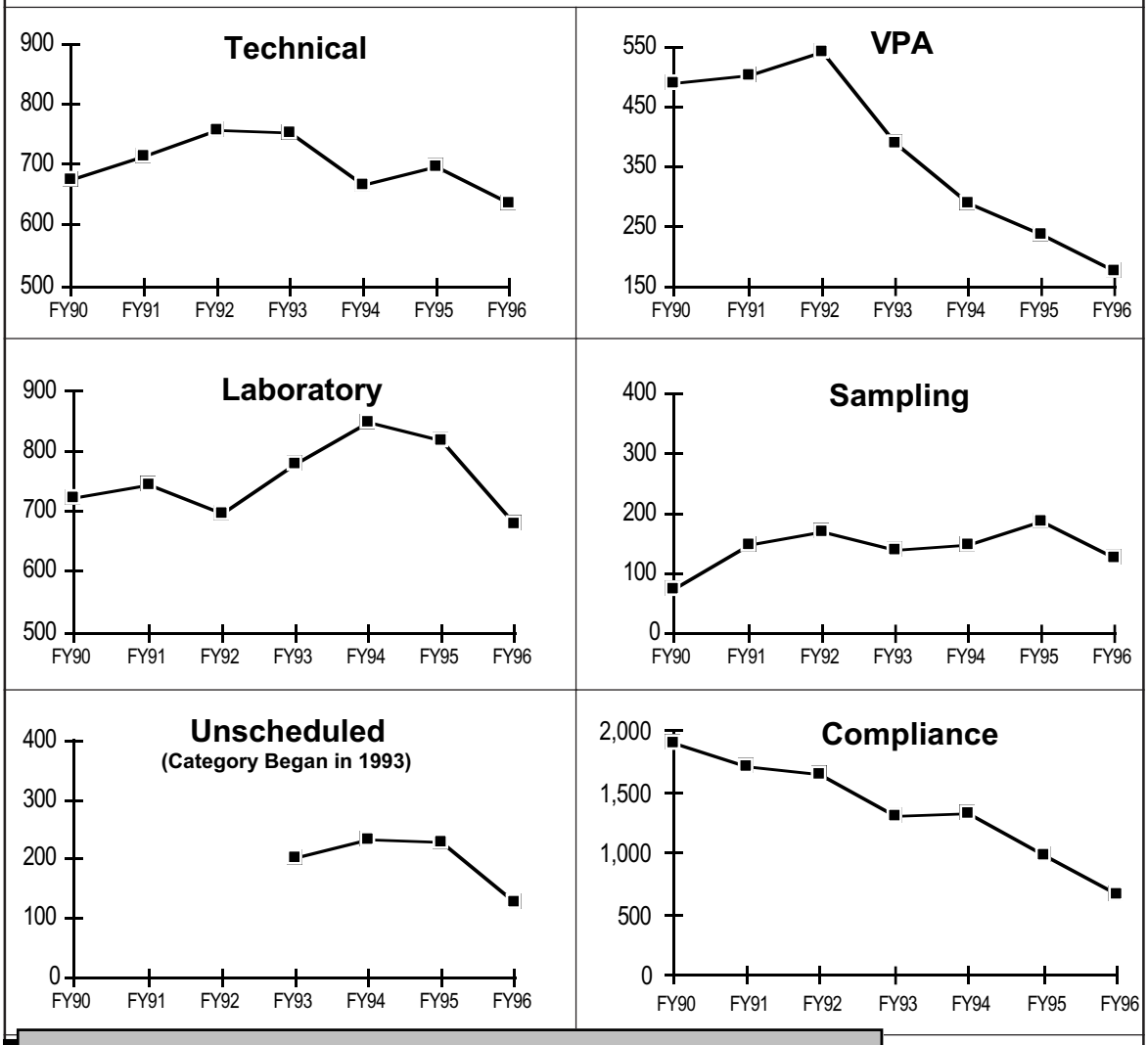
Inspection Type	% Change: Pre-DEQ	% Change: DEQ Before The Reorganization	% Change: The Reorganized DEQ	Overall % Change: FY90-FY96
Technical	12%	-12%	-4%	-6%
Laboratory	8%	9%	-20%	-6%
Sampling	92%	9%	-16%	75%
Unscheduled	na	16%	-46%	-38%
Compliance	-32%	1%	-49%	-65%
VPA	-20%	-26%	-39%	-64%
TOTAL	-8%	-2%	-31%	-38%

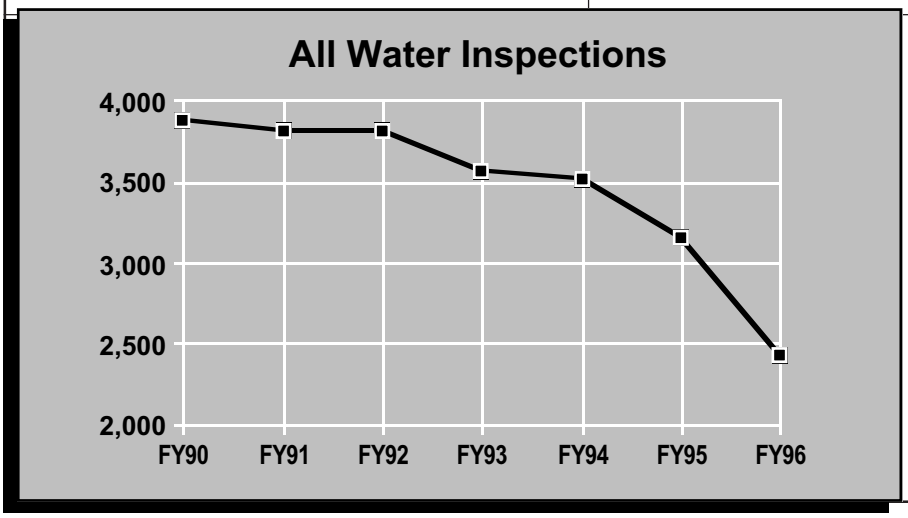
Note: "Pre-DEQ" is defined as FY 1990 to FY 1993; "DEQ Before the Reorganization" is defined as FY 1994 (with the FY 1993 totals as the starting point to measure the change); and, the "Reorganized DEQ" is defined as FY 1995 and FY 1996 (with FY 1994 totals as the starting point to measure the change).

Source: JLARC staff analysis of DEQ Water Division Inspection Reports, FY 1990 to FY 1996.

Figure 6

Water Inspections, FYs 1990-1996





Note: "Compliance" and "All Water" graphs are plotted on a different scale from the other graphs, due to the higher number of inspections involved.

Source: JLARC staff analysis of DEQ water inspection data.

Table 10

Percent Change in Water Inspections Conducted, FY 1995 to FY 1996

Inspection Type	% Change FY95-FY96
Technical	-9%
Laboratory	-17%
Sampling	-33%
Unscheduled	-45%
Compliance	-31%
VPA	-25%
TOTAL	-23%

Source: JLARC staff analysis of DEQ Water Division Inspection Reports, FY 1995 to FY 1996.

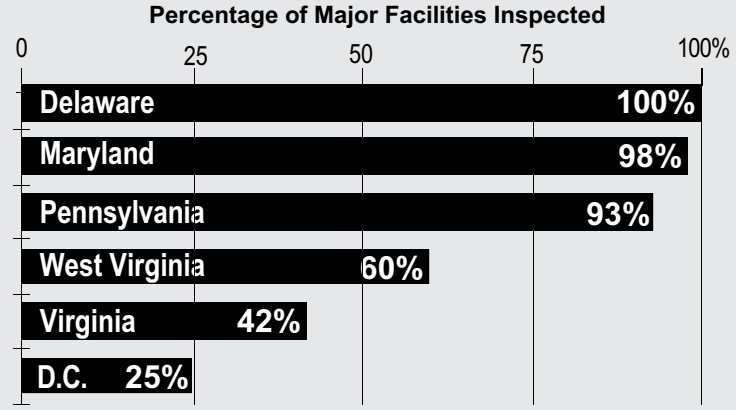
— laboratory, sampling, unscheduled, and compliance — saw the greatest percentage decrease over the period of FY 1990-1996 during FY 1996.

In addition to analysis of DEQ water inspection data, JLARC staff obtained data from EPA Region III in order to compare Virginia to the other states in the region. In fiscal year 1996, the average percentage of state major facilities inspected in Region III under the National Pollutant Discharge Elimination System (NPDES — the national equivalent of the VPDES program in Virginia) permit program was 79 percent. Virginia's average of state major facilities inspected, according to data submitted to EPA from DEQ, was 42 percent, and was only ahead of the District of Columbia (which has only four major sources) in EPA Region III (Figure 7). Further analysis of the EPA data on major NPDES facilities inspected indicated that Virginia's percentage has declined considerably from FY 1993 to FY 1996 (Figure 8).

This analysis indicates that the water inspection program, according to DEQ's own data, has been de-emphasized since 1990, and especially since the recent reorganization of DEQ in 1995. The decreasing percentages in the water inspection program are not correlated with a similar decrease in permitted facilities (which increased by approximately 60 percent between FY 1991 and FY 1995). Also, interviews with DEQ regional directors have indicated a need for more water inspectors to conduct facility inspections. For example, as of August 1996, the DEQ Northern Virginia Region had only three water inspectors to inspect some of the most complex wastewater facilities in the State; facilities that impact the health of the Chesapeake Bay. DEQ has not placed adequate resources in its water inspection program, and coupled with problems noted in DEQ's water monitoring program, DEQ may not be able to adequately assess facility compliance with water permit limits.

Figure 7

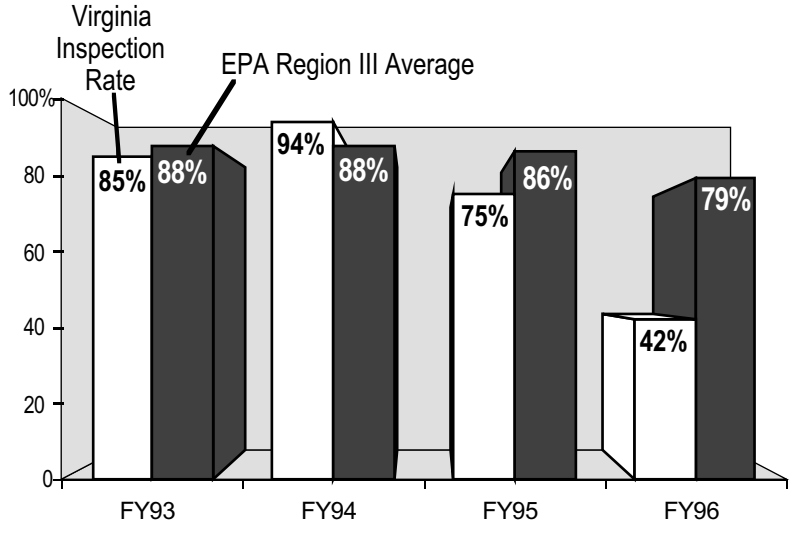
EPA Region III Water Program Major Facilities Inspected, FY 1996



Source: JLARC staff analysis of EPA Region III water inspection data.

Figure 8

Virginia Percentage of Water Program Major Facilities Inspected, FYs 1993 - 1996



Source: JLARC staff analysis of EPA Region III data.

Survey Data Raises Concerns as to the Inspectors' Ability to Conduct Thorough and Objective Inspections

Results from the JLARC staff survey of all air, water, and waste inspectors indicate that the inspectors' ability to conduct thorough and objective inspections may be hindered. Staff perceptions of the organizational climate in which they work and the amount of time devoted to the actual inspections are two areas of concern raised by the JLARC survey.

Staff Perceptions. DEQ inspectors were asked, "Assume you are making a compliance or enforcement recommendation or decision that is consistent with existing law or regulation, but which raises concern among one or more members of the regulated community. To what extent do you think your job could be at risk?" Almost one-third (32 percent) of air inspectors and almost one-third (32 percent) of waste and water inspectors responded that they thought their job could be at risk to some extent. While the majority of inspectors did not think their jobs would be at risk at all, such a large percentage who have some fear of retaliation raises concern that some inspectors may be unable to be objective in fulfilling their job responsibilities.

Inspector Time Constraints. Survey data indicates that all inspectors estimate their time in the field conducting the inspections constitutes slightly less than 50 percent of their total work time (air inspectors estimate an average 47 percent of the time in the field, while water and waste inspectors estimate an average of 48 percent in the field). Numerous interviews conducted at DEQ and the materials submitted by DEQ during this study indicate a growing amount of non-field responsibilities for DEQ inspectors in areas such as facility coordination, data entry, training, public relations, etc.

However, DEQ inspectors do not seem to think that they are being asked to conduct too many inspections, given their other responsibilities. In response to the survey statement, "Expectations for the number of inspections I am to perform are realistic", 71 percent of air inspectors agreed (only 14 percent disagreed) and 52 percent of water and waste inspectors agreed (with 18 percent in disagreement).

Although inspectors believe they are able to perform the inspections that they are expected to perform, survey responses indicate that inspectors are concerned that their regions as a whole are not conducting an adequate number of inspections. When asked to respond to the statement, "My regional office has an adequate number of inspectors", the results were somewhat mixed. More water and waste inspectors actually disagreed with the statement (40 percent) than agreed (28 percent). Air inspectors again indicated general agreement, although at a lower level (55 percent), and indicated much more disagreement (40 percent) than in the question about personal workload. The following survey comment from an inspector illustrates this notion that personal workload is realistic, but the regions need to do more inspections as a whole:

> Our inspections program has evolved over the years and the scope covered during some types of inspections has increased. The quality of

> these inspections has also increased as our inspectors gain training, knowledge and experience...In spite of our efforts, many facilities are not being inspected frequently enough or at an adequate level to determine and assure compliance with State law.

As already stated, five of the six DEQ regional directors indicated in interviews that they were concerned with their region's ability to conduct facility inspections. In examining the most recent organization chart provided to JLARC staff, one region, the Northern Virginia region, has only three inspectors in the water program to address some of the State's most complex sources. When one considers that the Southwest region, which contains 15 less major water pollution sources than the Northern Virginia Region, has four inspection personnel, the need for more inspectors is highlighted. This concern about DEQ's ability to conduct an adequate number of inspections, voiced by the inspectors and the regional directors, coupled with an examination of the downward trends in the number of inspections being conducted over the years, indicate that DEQ has not allocated adequate resources to its inspection programs.

Recommendation (22). **The Department of Environmental Quality should increase inspector staffing throughout the State to establish inspection frequency adequate to assess facility compliance with environmental permits issued by the Commonwealth.**

DEQ's Use of Unannounced Inspections in the Air and Water Programs Is Inconsistent

DEQ inspections can either be announced to the source in advance, or can be unannounced. Inspections are conducted according to schedules set for different classifications of permitted facilities. For example, a technical inspection for a VPDES permitted facility classified as a "major" discharger is supposed to be conducted every year. A review of permit files in both the air and water programs indicated that there is a pattern across years related to when inspections are scheduled. In other words, if a facility had a scheduled inspection conducted in December of one year, the next inspection would be conducted around December of the following year. Furthermore, in the water program, interviews with DEQ inspectors have indicated that they provide notice of an upcoming inspection ranging from a few days to a week prior to the inspection.

If a facility that is actually out of compliance with permit limits is aware of the general month in which an inspection will take place, and is then notified a few days ahead of time as to the actual day of the inspection, there is a potential that facilities with the capability to alter production and/or contain their discharge will do so to show compliance. One benefit of unannounced inspections is that they can help to solve these types of potential problems. By not allowing prior notice, DEQ staff will generally have the best opportunity to observe the normal operating conditions of the facility being inspected. A potential drawback of unannounced inspections is that the necessary staff from the facility may not be present to help the inspector.

The use of unannounced and announced inspections appears to be inconsistent across environmental media, and inspector staff within the same regional offices appear to disagree over whether or not their region has a policy in place concerning when to conduct unannounced inspections. Whatever policies on this subject may exist, they appear to be unwritten. All six of the DEQ regional directors stated that their region did not have a written policy on unannounced inspections.

Environmental Media Inconsistency. When asked what percentage of inspections were unannounced, 74 percent of air inspectors indicated that they conduct unannounced inspections more than 75 percent of the time. Only 16 percent of waste and water inspectors indicated that they conduct unannounced inspections more than 75 percent of the time. In fact, 48 percent of waste and water inspectors conduct unannounced inspections less than 25 percent of the time or not at all. This apparent inconsistency may result from a statutory requirement of the State Air Pollution Control Law. Section 10.1-1307.3 states that DEQ can:

> Inspect and Investigate...without prior notice, unless such notice is authorized by the Director or his representative.

This section of the law appears to charge the air program with conducting unannounced inspections, as the general rule. Similar stipulations do not appear in the water and waste statutes.

As a general rule, air inspectors attempt to schedule groups of inspections based on geographic location. When the inspector comes to a plant unannounced, and the necessary plant personnel are not present, that inspector can move on to the next plant nearby, thus minimizing the costs of travel time. This approach allows the inspectors to conduct a majority of their inspections unannounced, thus reducing the ability of a plant to alter production when they know they will be inspected. By eliminating advance notice to sources to be inspected, DEQ can reduce the possibility that sources are changing production processes to achieve temporary compliance, and therefore, increase confidence in DEQ inspection results.

Inspector Staff Inconsistencies. As part of the JLARC personnel survey of DEQ, inspectors were asked if their regional offices had a policy on when to conduct unannounced inspections. In response, 31 percent of air inspectors, and 30 percent of water and waste inspectors said that their regions did have a policy on when to conduct an unannounced inspection. However, an examination of these survey responses indicates that the differences were not along regional lines, but were actually the result of inconsistent answers from inspectors in the same regions. For example, examination of air inspector surveys revealed that inspectors in the same regions disagreed as to whether or not their region had an unannounced inspection policy. In five of the six regions, at least one air inspector answered “yes” to the question “Does your regional office have a policy on when to conduct unannounced inspections?”, and at least one air inspector from the same region answered “no” to the same question. This indicates that even if regional offices have policies on when to conduct unannounced inspections, these are not being communicated effectively to the inspection staff.

Recommendation (23). **The Department of Environmental Quality should issue guidance on the use of announced and unannounced routine inspections of permitted facilities in the air, waste, and water programs. This guidance should recommend the use of unannounced inspections whenever possible, and announced inspections only under special circumstances and when approved by the compliance managers in the DEQ regions. This guidance should re-assess the current predictability of the annual inspection process and recommend utilization of unannounced inspections of facilities outside of the normal yearly schedule.**

V. Enforcement in Virginia

Historically, the Commonwealth of Virginia has taken a philosophical approach to enforcement of its environmental laws that emphasizes returning permittees to compliance, while taking formal enforcement action for serious violations. The traditional goal of enforcement in Virginia has been to have a program that is timely, consistent, and certain. However, this goal is not being met in the current water enforcement program.

While the air program has remained essentially the same during the last two years, the water enforcement program has undergone major changes. Management at DEQ has decentralized water enforcement. In addition to decentralization, DEQ has placed increased emphasis on informal compliance assistance and has strongly de-emphasized formal enforcement.

As a result, water penalty actions have declined sharply, and the deterrent effect of potential enforcement action for serious violations has been seriously weakened. In addition, DEQ has continued to avoid taking strong enforcement action against local governments except in the case of egregious violations. Moreover, management of the water enforcement program has been weak and has lacked effective guidance and oversight. The lack of a credible water enforcement program and the downward trend in inspections (discussed in Chapter IV) raises serious concerns about whether DEQ is adequately fulfilling its Constitutional and statutory mandate to protect Virginia's waters.

In addition, there remain some long-term problems with the overall enforcement program. The relationship between DEQ and the Office of the Attorney General needs to be strengthened so that the two agencies can work cooperatively in developing a timely, consistent, and certain enforcement process. In addition, there continues to be long-term noncompliance by some State agencies, and DEQ is limited in its ability to take enforcement action against these agencies.

THE ENFORCEMENT PROCESS

The environmental statutes and regulations are enforced primarily by enforcement staff at the Department of Environmental Quality, although the Office of the Attorney General (OAG) and the Environmental Protection Agency (EPA) also play a role in the enforcement process. DEQ staff have the authority to enter into agreements with permittees or sources to pay civil charges or to take actions to address the violation at issue. The OAG's role in the process is to file legal actions in those cases in which a satisfactory administrative remedy cannot be achieved. EPA's role is one of oversight.

In the water program, the Virginia Pollution Discharge Elimination System (VPDES) program is a federal program established pursuant to the Clean Water Act and

delegated to Virginia by EPA. Thus, EPA has the authority, subject to certain limitations, to become involved in the enforcement process when it determines that the State has not taken adequate enforcement action to address a problem. This general framework applies to all three media; however, there are differences across media.

Administrative Enforcement Programs

Prior to the 1995 reorganization, the water, waste, and air programs had different structures. Water and waste enforcement have historically been centralized. In contrast, the air program has been implemented primarily at the regional level. However, both water and waste enforcement were decentralized in 1995.

Water Enforcement. The basis for the water program over the last eight years has been a compliance auditing system referred to as the Notice of Violation (NOV) point system. Under this system, permittees monitor their effluent and submit self-monitoring reports referred to as discharge monitoring reports (DMRs). These DMRs are examined by compliance auditors to assess whether the permittee has violated any permit limits. If violations are identified, they are then assigned a point value based on the seriousness of the violation. A moving six month window is used to assess points and determine whether an enforcement action is warranted. A facility that receives four or more points in a six month time period is referred to an enforcement specialist.

After a case is referred to enforcement, water enforcement staff negotiate with the permittee to address the problem. This negotiation often ends with an administrative agreement signed between the permittee and the State, referred to as a consent order. A consent order might require the permittee to take specific actions to address the problem causing the permit violations, and it might also include a negotiated penalty referred to as a civil charge. All enforcement actions are required to be approved by the State Water Control Board (SWCB).

Waste Enforcement. Waste enforcement is now conducted through enforcement specialists in the regions. Waste enforcement staff also have the authority to negotiate consent orders and civil charges. However, waste enforcement actions are not required to be approved by the Virginia Waste Management Board.

Air Enforcement. In contrast, air enforcement has historically been decentralized. Air inspectors have the primary responsibility for enforcement, which is carried out at the regional level. Air enforcement does not have a point system comparable to the water area. Instead, compliance is assessed primarily through inspections. When an air inspector determines that a source has committed a significant violation, it issues the source a Notice of Violation. The inspector then generally negotiates a consent order with the source which usually includes a negotiated civil charge. As with waste, air enforcement actions do not require approval of the citizen board.

WATER ENFORCEMENT PROGRAM IS DEFICIENT

JLARC's review of the water enforcement program revealed major deficiencies in the program. The de-emphasis on enforcement over the last two years has significantly weakened water enforcement. During this period, negotiated civil charges have decreased dramatically, enforcement referrals to the Office of the Attorney General have almost ceased, and DEQ has been reluctant to take strong enforcement action for serious violations. In addition, the current enforcement approach continues the long-standing policy of not attempting to fully recover the economic benefit of noncompliance in the penalties that are negotiated. Moreover, Virginia's current approach to water enforcement has recently strained Virginia's relationship with EPA. These weaknesses pose serious risks for the VPDES program and DEQ's ability to protect the State's waters. Without a commitment to strong enforcement, there is no tangible deterrent to noncompliance, and there may be an economic incentive not to comply with the regulations.

Another weakness in the enforcement program has been the reluctance to take strong enforcement action against localities. Local governments are generally allowed to remain out of compliance for extended periods of time while they complete necessary upgrades and are rarely assessed monetary penalties, even for serious, intentional violations. This approach has had significant adverse environmental impacts. Several localities with long histories of noncompliance have severely damaged Virginia waters.

Monetary Penalties Are Low and Have Declined Sharply

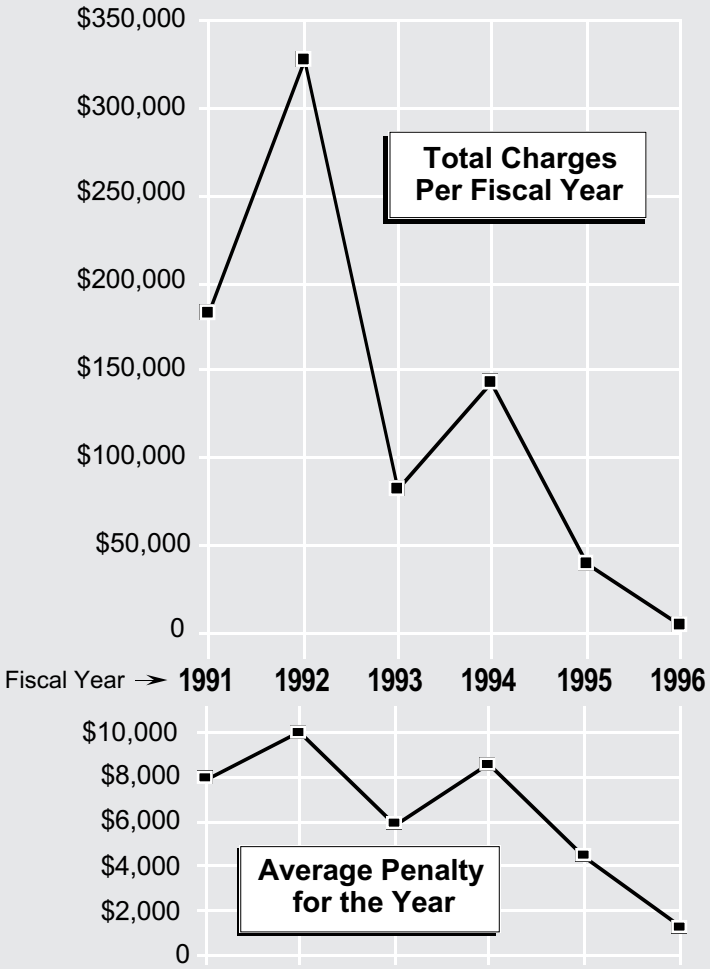
One of the central components of the enforcement of the Clean Water Act and the State Water Control Law has been the assessment of penalties for significant violations of the Act or Law. The assessment of penalties serves two important goals. First, penalties have a valuable deterrent effect that can encourage the regulated community to anticipate, identify, and correct violations. Second, penalties are also important to reduce any competitive advantage that one pollution source might receive from noncompliance. Despite the importance of monetary sanctions, the total number of civil charges collected by DEQ for water violations has declined substantially.

Water Civil Charges Assessed in Virginia Have Declined. Analysis of water civil charges assessed over the last six fiscal years reveals a significant decline in charges over the last two years (Figure 9). For the years FY 1991 through FY 1994, the average total annual civil charges assessed was $183,825. The decline to $39,826 in FY 1995 represented a 78 percent decrease from this four-year average, and the $4,000 collected in FY 1996 represented a 98 percent decline.

Likewise, the decline in the average civil charge over the last two years is substantial when compared with the four previous years. From FY 1991 through FY 1994, the average civil charge collected was $8,040. The average charge of $4,425

Figure 9

Civil Charges Assessed for Water Violations, FYs 1991 - 1996



Notes: The average penalty graph is plotted on an enlarged scale in order to better show the trend. The totals do not include civil charges assessed for underground or aboveground storage tank violations.

Source: DEQ civil charge records provided to JLARC.

collected in FY 1995 represented a 45 percent decrease from that four-year average, and the average charge of $1,333 in FY 1996 represented a 83 percent decline.

Other States Collect More Penalties. For this study, a survey of other states was conducted. The states were asked to provide the total amount of penalties assessed for National Pollution Discharge Elimination System violations (the "VPDES" permit program is referred to as the "NPDES" program in all other states) or unpermitted discharges over the last five years. Table 11 summarizes the results of the survey. While there has been a downward trend in a number of other states since 1994, all of the states

Table 11

Water Penalties Assessed in Other States

State	1992	1993	1994	1995	1996*
Georgia	$1,000,000	$1,500,000	$5,660,000	$4,300,000	$4,000,000
Pennsylvania	$2,779,908	$3,302,539	$3,470,196	$2,093,028	$ 893,292
South Carolina	$ 785,000	$ 426,800	$1,036,450	$ 344,710	$ 858,320
Florida	$ 978,585	$ 740,302	$1,453,302	$ 620,038	$ 734,391
Tennessee	$ 944,750	$ 554,575	$1,069,750	$ 873,125	$ 499,400
Alabama	$ 151,250	$ 349,400	$ 212,758	$ 165,850	$ 174,900
North Carolina	$ 407,916	$ 382,344	$ 501,193	$ 288,444	$ 138,432
Kentucky	$1,747,075	$ 538,238	$1,083,080	$ 773,235	$ 136,610
West Virginia	$ 450,000	$ 340,000	$ 450,000	$ 400,000	$ 60,000
Maryland	$ 250,000	$ 380,000	$ 184,000	$ 104,000	$ 55,967
Mississippi	$ 154,000	$ 325,542	$ 245,749	$ 34,273	$ 33,100
Virginia	**$ 327,286**	**$ 82,134**	**$ 143,666**	**$ 39,826**	**$ 4,000**

*Georgia, Kentucky, North Carolina, Pennsylvania, South Carolina, and Tennessee totals are based on the calendar year. Therefore, the 1996 numbers represent only a portion of the year. The totals for Alabama, Florida, Maryland, Mississippi, Virginia, and West Virginia are based on state fiscal years, and the totals for 1996 represent complete data for the 1996 fiscal year.

Notes: Georgia, Pennsylvania, Maryland, and West Virginia totals are dollars collected because assessed figures were not available. In Kentucky, North Carolina, and Tennessee, penalty dollars collected are generally less than penalty dollars assessed; however, in Florida, penalty dollars collected are greater than penalty dollars assessed. The totals provided by Georgia, Maryland, and West Virginia are rounded numbers.

Source: JLARC staff survey of other states.

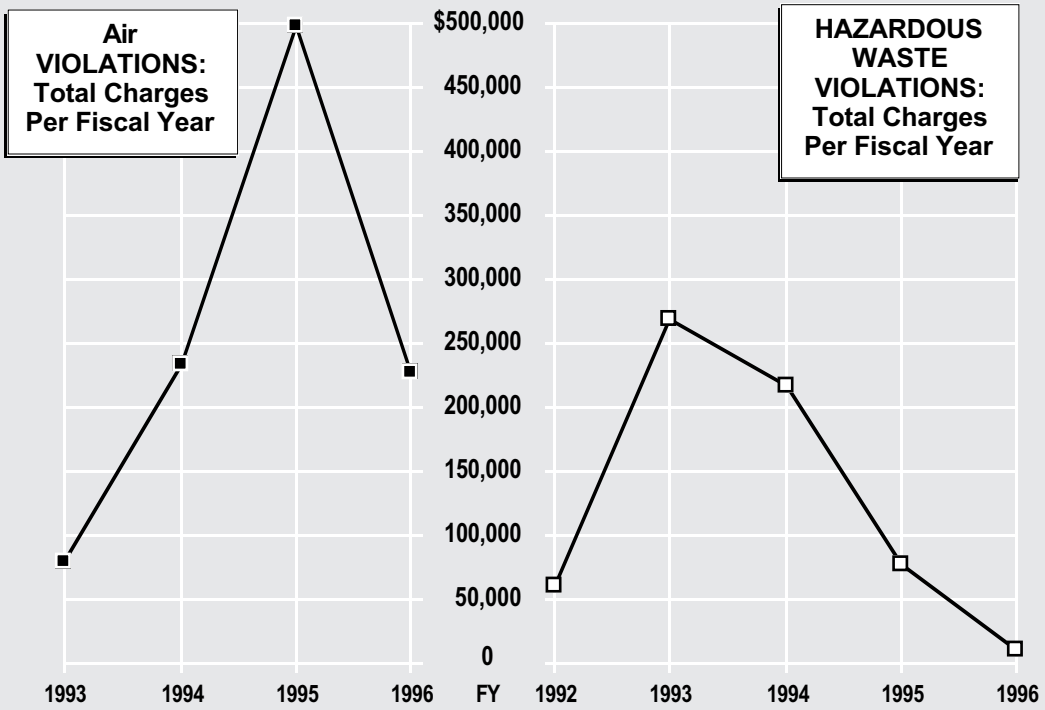
that responded to the survey reported substantially higher total penalties assessed in the last two years than Virginia.

Air Civil Charges Have Not Declined. In contrast to the water enforcement program, air civil charges assessed have actually increased since 1993. Figure 10 shows the total air civil charges assessed by fiscal year. Total charges assessed in FY 1995 were substantially higher than the previous fiscal year and in FY 1996 were similar to the civil charges assessed in FY 1994 and greater than the charges assessed in FY 1993.

Hazardous Waste Civil Charges Have Declined in Virginia. Similar to the water enforcement program, hazardous waste civil charges have declined over the last two years. As Figure 10 indicates, the total civil charges collected in FY 1995 and FY 1996 were $76,000 and $10,000 respectively. The FY 1995 total civil charges represented a decline of 58 percent from the average total annual civil charges assessed for the years FY 1992 through FY 1994 ($181,867), and the FY 1996 total was a decrease of 94 percent from this average.

Figure 10

Civil Charges Assessed for Air and Hazardous Waste Violations



Notes: 46% of the air civil charges assessed over the four-year period have been collected and 48% have been offset by supplemental environmental projects. 65% of the hazardous waste civil charges assessed over the five-year period have been collected. Complete air civil charge data for FY 1992 was not available.

Source: DEQ civil charge records provided to JLARC.

DEQ Has Failed to Seek Penalties with Deterrent Value for Serious Violations

Based on a review of the DEQ files, serious violations have not been adequately addressed through penalties during this period in which civil charges have declined. Many of these violations have involved situations in which the permittee or employees of the permittee engaged in intentional conduct that directly violated the State Water Control Law and regulations. The failure to demand strong penalties by the enforcement staff may partially result from fear of retaliation.

Serious Violations Involving Intentional Misconduct. Several serious violations have occurred over the last three years which involved intentional misconduct on the part of the permittee or one of its employees. Despite the nature of these violations, DEQ has chosen either not to negotiate civil charges or to negotiate nominal civil charges with these permittees. For example:

A permittee with a long history of noncompliance had 59 violations of its permit between May 1994 and February 1996. In 1994, it was discovered that over 5,000 laboratory test records from 1992 and 1993 which were required by law to be maintained were missing. Subsequent evidence indicated that the chief operator had falsified discharge monitoring reports submitted in 1992, 1993 and 1994, which had been signed by the company's vice-president, and that the facility had serious violations of its permit during that period. These violations contributed to the impairment of the receiving stream. A criminal investigation was conducted by a DEQ staff person and the findings of this investigation were referred to the appropriate Commonwealth's Attorney. In addition, in April 1996, the DEQ regional office wrote the company advising it that DEQ intended to take enforcement action and offering the company the opportunity to negotiate a civil charge in lieu of a court action. In its enforcement recommendation, the regional office proposed a penalty of $278,279. However, the DEQ central office subsequently directed the regional office to retract the enforcement letter and not to proceed with the enforcement action.

In a memorandum critiquing the regional office's decision to proceed with an enforcement action, central office enforcement wrote "[the Secretaries of Natural Resources and Commerce and Trade] ... , given their previous interest in this case, should have, at a minimum, been extended the courtesy of a briefing prior to the commencement of the action." In addition, the memorandum raised the following questions: "Given the 'pay for pollution' press this received last summer, can DEQ take less than $100,000? Conversely, can DEQ require such an extraordinary sum after having already represented to the permittee, either explicitly or implicitly, that it has taken appropriate action?" There is no documentation that DEQ pursued an enforcement action against the permittee subsequent to the retraction of the April 1996 enforcement effort. When EPA notified the State of its intent to take enforcement action in August 1996, the Office of the Attorney General filed suit against the permittee without receiving the customary referral from DEQ or referring the case to the State Water Control Board. When the chairman of the SWCB asked the DEQ director why the board had not been consulted about the case, he was told Virginia acted quickly to "beat the feds."

* * *

A company began operating at a dry-dock site in December 1994. It had failed to apply for a VPDES permit for its discharge and thus was operating illegally. The company held a VPDES permit for a similar operation and was fully aware of the permit requirements for the unpermitted discharge. DEQ negotiated a civil charge of $2,000 with the source.

* * *

During October 1994, a town illegally discharged approximately 80,000 gallons of untreated sewage to a nearby creek through an illegal bypass pipe in violation of the State Water Control Law and State regulations. The permittee chose not to report the discharge as required by permit and regulation. The discharge resulted in the violation of water quality standards. In addition to this violation, the permittee was issued ten Notices of Violation for various violations between June 1993 and January 1995. DEQ chose not to demand a civil charge or seek a court-ordered penalty .

* * *

A town with a treatment facility had an overflow of approximately 50,000 gallons when a pump station malfunctioned. The overflow killed 1,776 fish and covered 2.5 stream miles. The permittee had turned off the alarm system intended to detect such overflows. The permittee also failed to report the overflow within 24 hours to DEQ. DEQ negotiated a civil charge of $1,000 with the permittee.

Two of the these four case examples involved the failure to report illegal overflows and a third case involved the submission of false reports. In structured interviews, enforcement staff have emphasized the serious nature of violations for failing to report overflows or for submitting false reports because the entire compliance system for water is based on self-reported data. One regional director stated that it "is inexcusable to not report an overflow" and that he would fully expect enforcement staff to seek a civil charge for such a violation.

Nevertheless, in two of these three cases, DEQ did not pursue a civil penalty and in the third case, DEQ sought only a nominal penalty. Each of these three cases, as well as the fourth case example, which also involved intentional illegal conduct, are the types of cases for which significant civil charges are necessary to deter this type of intentional misconduct in the future.

Fear of Retaliation May Hinder Enforcement. In interviews and responses to the JLARC survey of DEQ employees, many of the enforcement staff indicated that they had some fear of losing their job if they make an enforcement recommendation or decision that raises concern among the regulated community. This perception among enforcement staff may be detrimental to the performance of their enforcement responsibilities and may offer some explanation for the sharp decline in civil charges sought during the last two years.

One factor that may be contributing to this perception among enforcement staff is the increased involvement of the current Secretary of Natural Resources in the review of enforcement actions. The Secretary regularly reviews all proposed enforcement actions before they are presented to the State Water Control Board as part of her review

of the board agenda items. On at least one occasion, the Secretary appears to have directed enforcement staff not to proceed with a proposed penalty. According to a former director of water enforcement, the previous Secretaries of Natural Resources did not review enforcement cases prior to SWCB meetings, nor did they intervene in specific cases. In interviews, several enforcement staff described the Secretary's intervention in the enforcement case as having a chilling effect on the enforcement process.

Penalties Do Not Recover the Economic Benefit of Noncompliance

One of the recognized reasons for assessing monetary penalties in the environmental area is to take away any economic benefit of noncompliance. EPA states in a guidance document that penalties can "contribute to greater equity among the regulated community by recovering the economic benefit that a violator gains from noncompliance over those who do comply." The current DEQ director acknowledged that it makes sense to try to capture the economic benefit of noncompliance.

Despite this recognition of the importance of removing the economic benefit of noncompliance, the water enforcement staff generally do not recover it in the civil charges that are sought. In structured interviews and in response to the JLARC survey of DEQ employees, most DEQ enforcement staff stated that civil charges in the water area generally do not capture economic benefit. A former DEQ director of water enforcement stated that one of the biggest weaknesses in the State's water enforcement program is the failure to recover the economic benefit of noncompliance.

Case Examples in Which Economic Benefit Was Not Recovered. JLARC's review of case files revealed recent case examples of water enforcement cases in which DEQ staff did not recover the economic benefit of noncompliance. For example:

> *A company began operating at a second dry-dock site without a VPDES permit in December 1994. Enforcement staff stated that the company was "in direct competition with permitted facilities and is enjoying a significant economic advantage operating without a permit." Staff further stated that the "Company was aware of the need for a permit. They made a business decision to proceed with operations without contacting DEQ and applying for a permit." Yet, DEQ negotiated a civil charge of $2,000 with the violator.*
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> *A company with eight plant locations around the State had numerous violations which included: failure to submit complete applications for VPDES and VPA permits, operating without a permit, violations of consent orders, and unpermitted discharges. The enforcement specialist assigned to the case wrote that "the company has saved engineering fees by refusal to hire a professional to assist in completing the permit applications. The company has also benefited by refusal to pay*

> *applicable permit fees when due under the consent order, and has benefited by delaying process changes which will be required once permits are issued." There was no record in the file of an attempt by enforcement staff to actually quantify the economic benefit of noncompliance, and the civil charge ultimately negotiated with the facility was $7,500.*

One noticeable difference between the water and air enforcement programs is the priority given to recovering the economic benefit of noncompliance. Air penalty guidance directly states that in assessing civil charges in air, the enforcement staff (air inspectors) should incorporate the economic benefit derived through noncompliance. In contrast, the water penalty guidance does not direct enforcement staff to include economic benefit, but merely lists it as a factor to be considered in adjusting penalty calculations. In practice, air inspectors generally attempt to calculate the economic benefit of noncompliance, and the water enforcement staff generally do not.

Recovering the economic benefit of noncompliance needs to be a fundamental element of the water enforcement program as well. Failure to do so is not equitable and provides violators with an unfair advantage over those members of the regulated community that comply with environmental laws and regulations. Moreover, failing to capture the economic benefit of noncompliance reduces the incentive of the regulated community to make the investments in capital and labor needed to achieve compliance.

Lack of Expertise to Calculate Economic Benefit. Several of the regional directors as well as several enforcement staff have raised the concern that DEQ staff simply do not have the financial expertise to accurately calculate economic benefit. EPA has developed a computer program for the purpose of calculating economic benefit, but DEQ enforcement staff have noted that this program has some significant limitations.

Several DEQ staff interviewed stated that the agency could benefit by assistance from a financial expert in calculating economic benefit. In addition, enforcement staff stated that DEQ needs better access to the financial records of the companies for whom DEQ is calculating the economic benefit of noncompliance.

Recommendation (24). **The Department of Environmental Quality should re-evaluate its approach to the assessment of civil charges and penalties in the water program and develop a new policy that will ensure that monetary sanctions which are assessed or negotiated for serious violations are adequate to have a meaningful deterrent effect. The General Assembly may wish to consider requiring the director of the Department of Environmental Quality to report to the House Committee on Conservation and Natural Resources; the Senate Committee on Agriculture, Conservation, and Natural Resources; the House Appropriations Committee; and the Senate Finance Committee on the new penalty policy.**

Recommendation (25). **The General Assembly may wish to consider amending the *Code of Virginia* to require the Department of Environmental**

Quality to recover the economic benefit of noncompliance in the negotiation and assessment of civil charges and penalties in every case in which there is an economic benefit from noncompliance, and the economic benefit can be reasonably calculated.

Recommendation (26). **The General Assembly may wish to consider requiring the Governor to annually report to the House Committee on Conservation and Natural Resources; the Senate Committee on Agriculture, Conservation, and Natural Resources; the House Appropriations Committee; and the Senate Finance Committee, on civil charges assessed and on cases in which enforcement action was taken, but no civil charges were assessed.**

Recommendation (27). **The Department of Environmental Quality should arrange access to a financial expert who can assist enforcement staff in the calculation of economic benefit. The agency should assess whether to establish a permanent position or to contract with a private consultant for the service.**

DEQ Is Reluctant to Take Enforcement Action Against Localities

Historically, it has been the unwritten policy of the Department of Environmental Quality and the State Water Control Board to work with localities in violation of their VPDES permits and to avoid taking strong enforcement action against them except for egregious violations. There have been many cases in which DEQ, and the State Water Control Board prior to the creation of DEQ, have worked for extended periods of time to bring facilities into compliance with the State Water Control Law and regulations. In addition, in cases in which local governments have had serious violations, DEQ and the State Water Control Board have been reluctant to require the payment of significant civil charges for those violations. Despite public statements by the present Secretary of Natural Resources and director of enforcement that government facilities will be treated the same as private sector facilities under the current administration, DEQ appears to have maintained its policy of treating local governments with water compliance problems more leniently than private sector facilities.

DEQ seems to be more inclined to work with localities for extended periods of time to achieve compliance for several reasons. One of the reasons appears to be a general reluctance on the part of DEQ to take strong action against another governmental entity. Another reason appears to be the recognition that many of these localities have budgetary constraints which makes it difficult for them to generate the funding necessary to make the necessary improvements. In addition, DEQ operates under the assumption that localities will take longer to obtain the necessary approvals for treatment upgrades and to raise the funds necessary to make the upgrades than private sector entities.

Reluctance to Take Action for Serious Violations. Despite these recognized constraints, there is also evidence from reviewing the files that many localities have

been slow to address their compliance problems and in some cases have actively resisted efforts to comply. In these cases, DEQ still seems reluctant to take strong enforcement action, even when the violations may be causing serious environmental damage. For example:

> *A town has a long record of noncompliance with its permit limits. It received a Notice of Violation almost every month for permit violations between April of 1990 and December of 1995. An inspector wrote in December 1995: "[The town's sewage treatment plant] is in very poor condition." Furthermore, the inspector described the receiving stream as being "in very poor condition." According to the 1996 303(d) list, effluent from the town's treatment plant has severely impaired 2.16 stream miles.*
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> *After visiting a town's sewage treatment plant, the DEQ permit engineer wrote in May 1995: "Judging from the Training and Assistance Report of 1990, little has been accomplished so far. The town still does not have a properly licensed operator on site, there still is no control strategy for plant operations and adjustments, and there is no preventive maintenance program. ... The poor condition of the [town] plant indicates that we should consider revising your current staffing requirements." The permit engineer further stated in the letter that the town had received seven notices of violation in the previous 12 months which represented a "disturbing trend." According to the 1996 303(d) report, the town's discharge has contributed to the impairment of 3.83 stream miles.*

As of November 1, 1996, no formal enforcement action had been taken against either town.

Two cases involving fish kills further illustrate the reluctance of DEQ to take action against local governments, no matter how serious the violation. For example:

> *A town discharged approximately 50,000 gallons of untreated sewage to a nearby creek. The raw sewage killed 1,776 fish. The town failed to report the overflow or the fish kill. The town was only required to pay a $1,000 civil charge.*
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> *A county had sewage overflows totaling approximately two million gallons in 1992 and 1993. In September 1994, the county experienced a sewage bypass of 168,000 gallons of untreated sewage. The overflow killed 178 fish. DEQ took no formal enforcement action against the county.*

The decision not to assess any civil charge in the second example appears to violate the long-standing policy of DEQ and the SWCB always to demand a penalty in the case of a fish kill caused by a permittee's discharge.

Poor Enforcement Has Had Adverse Environmental Impacts

Two long-term trends as well as one more recent trend have characterized water enforcement. One of the long-term trends has been the willingness of DEQ and the SWCB to give permittees unable to meet their permit limits extended periods of time to achieve compliance with their permits. The other long-term trend has been DEQ's willingness to give permittees unable to meet their limits more lenient interim limits while the permittee makes the necessary upgrades or modifications. In addition, a more recent trend has been the failure to take enforcement action against small businesses that pose serious risks to the environment. Moreover, in at least one case, DEQ has failed to take enforcement action against a major company which has experienced chronic chemical spills. This approach to enforcement has contributed to several cases of documented adverse environmental impact.

Extended Noncompliance Has Led to Adverse Environmental Impacts. DEQ and the SWCB historically have given permittees long periods of time to come into compliance with their permit limits. In some cases, DEQ has been unable to negotiate an agreement with a permittee about a compliance schedule but has taken no further enforcement action to bring the facility into compliance. In other instances, the agency has entered into consent orders or decrees which provide permittees with extended compliance schedules for the upgrade of their treatment facilities. However, when facilities are unable to meet the commitments in their schedules established through consent orders, DEQ generally has been willing to extend deadlines to accommodate the permittees.

This willingness to allow noncompliance for long periods of time has contributed to some serious environmental impacts. Two examples of this are the case examples discussed in the previous section. In both cases, towns have been allowed to remain out of compliance with their permits for extended periods of time without being forced to take action to address violations or being subject to monetary sanctions for the violations. As a result, several stream miles have been severely impaired. The following is another example:

> *A town has had a long history of compliance problems. Between 1987 and 1991 the permittee had regular permit violations. In July 1991, the SWCB entered into a consent agreement with a penalty and a schedule for upgrading the facility. In the fall of 1992, the permit violations were still ongoing and the town was several months late in submitting plans for an upgrade. The OAG finally filed suit in January 1993 seeking injunctive relief to improve plant performance. Meanwhile, the receiving stream for the plant had become seriously degraded from the*

> *discharge of solids and the stream remains on the 303(d) list of impaired waters.*

Generous Interim Limits Have Contributed to Environmental Damage. Another practice of the Department of Environmental Quality has been to establish interim permit limits or remove limits entirely through consent orders in those cases in which a permittee is not able to meet the limits in their permit. The Environmental Protection Agency has raised concerns about DEQ's practice of removing limits through consent orders.

JLARC staff's review of DEQ files revealed a consent order executed in the summer of 1994 in which generous limits appear to have contributed to the impairment of a trout stream:

> *After numerous violations of a town's permit limits in 1993 and 1994 as well as an unpermitted discharge, DEQ entered into a consent order under which limits for biochemical oxygen demand and total suspended solids would be raised and the limit for fecal coliform removed. A DEQ document prepared in the summer of 1996 raised the following question: "Why did we provide such generous interim limits with no schedule to upgrade the plant to meet final limits?" Another document further questioned why the limits in the 1994 consent order were more generous than the 1989 consent order. The document specifically questioned why there was no fecal coliform limit, noting that fecal coliform discharges from the treatment plant had directly led to the listing of the receiving stream on the 1996 303(d) list as impaired for fecal coliform. The stream had not been listed as impaired for fecal coliform on the 1994 303(d) list.*

No documentation was found in the file that explained or justified the generous limits. When asked about this case in a structured interview, the regional director agreed that the limits were high but noted that this consent order was prepared by headquarters staff in 1994, or prior to the decentralization of water enforcement.

Lack of Enforcement Action Against Aquaculture Facilities. A recent example in which lack of enforcement action has contributed to serious environmental harm is the case of aquaculture facilities (fish farms). The 1996 303(d) report lists three stream segments as "severely impaired" from fish farms. With regard to a trout farm, the report states:

> A benthic survey in the spring of 1995 indicated severely impaired waters below [a trout farm discharge]. As a result the 0.80 miles of stream below the discharge was assessed as not-supporting the Clean Water Act's Aquatic Life Use Support goal for the 1996 305(b) report.

The other two fish farms listed in the 303(d) report have severely impaired approximately one mile of State waters.

Based on the serious water quality violations caused by these aquaculture facilities, DEQ staff prepared draft notices of violation for all three facilities in July 1995. However, staff were directed by management not to send the notices of violation, and 15 months later no further enforcement action has been taken with regard to these fish farms. The same month the Secretary of Natural Resources wrote to a fish farm owner expressing concern that fish farms not be unfairly disadvantaged in the application of the laws and regulations and describing the commitment of DEQ staff to ensure that the fish farmer's business could prosper with minimal regulatory burden. In the letter, which is shown in Exhibit 4, the Secretary wrote the following:

> I am asking ... the Director of DEQ, to review the application of the laws and regulations to be certain we are not disadvantaging Virginia trout farms unfairly.

In March 1996, the trout farm discussed previously was inspected. The inspection revealed several violations of the permittee's permit conditions. These violations included: inappropriately flushing solid fish waste to the receiving stream, failure to sample during normal operations, and failure to submit an annual report on solids handling. Despite these permit violations and the impairment of the receiving stream, no Notices of Violation were issued, and no enforcement action was taken.

The DEQ regional director of the region in which the farms are located stated that the primary reason he was delaying enforcement action was that he was reluctant to proceed until DEQ was able to offer a technical solution to address the problem. He indicated that the problem is currently being studied.

Lack of Enforcement Action Against Dairy Operation. Another recent example in which lack of enforcement action has contributed to environmental damage is the case of a dairy farm.

> *On August 3, 1994, the manure holding pen at a dairy operation broke and large amounts of cow manure flowed into a nearby stream. The manure killed 4,256 fish. A DEQ enforcement specialist, the director of water enforcement, and the DEQ director of enforcement all recommended that DEQ pursue a penalty for the fish kill. However, a handwritten note in the file indicated that the penalty was "placed on hold—not taken before Sept. Board meeting. Proposed penalty not approved by Dept. Nat. Res." When questioned by JLARC staff about the handwritten note, the enforcement specialist told JLARC staff that she had been informed by her supervisor that the Secretary had rejected the penalty action and that she should not proceed with it. The Secretary of Natural Resources has denied any involvement in this case. DEQ management also denies that the Secretary was involved. However, there is no documentation in the file to explain why the penalty action was withdrawn other than the handwritten note referenced previously. In addition, the enforcement specialist's account was confirmed by two other DEQ enforcement staff.*

Exhibit 4

Secretarial Letter to a Fish Farm Owner

> *No civil charge was ever assessed for the August 1994 fish kill, and the owner was only required to repair the break and pay fish replacement and investigative costs. In April 1996, the dairy experienced another break in the same holding pen. It was estimated that approximately 225,000 gallons flowed out of the pen and into the nearby creek. The inspector who investigated the accident stated that "There was no way to tell if there was a fish kill or if there [were] any fish in the small tributary due to the bulk of manure waste in the stream." No enforcement action has been taken against the owner for the second spill.*

In an instance such as this, it appears that the Secretary and DEQ have chosen to disregard the Constitutional mandate and DEQ's statutory requirement to protect the waters of the Commonwealth. Moreover, the Secretary's involvement in enforcement decisions does not appear to be consistent with the powers and duties granted to the Secretary of Natural Resources in §2.1-51.8:1 of the *Code of Virginia*. The *Code* expressly grants the State Water Control Board the ultimate authority to conduct water enforcement and makes no mention of any role for the Secretary in the enforcement process.

Lack of Action Against Chronic Violator. In another case, DEQ failed to take any further enforcement action against a company with a long history of serious violations which had experienced a pattern of chemical spills. DEQ did not act until the company experienced two spills that killed at least 2,200 fish. The following occurred:

> *Between 1989 and 1991, a company experienced unpermitted releases of sulfuric acid, phenol, and cyclohexanone which resulted in three fish kills, and the permittee paid civil charges totaling $46,000. Between August 1992 and January 1996, the company experienced four additional spills of sulfuric acid totaling 43,224 pounds, 10 ammonia spills totaling 13,350 pounds, and one release of 15,410 pounds of cyclohexanone. Three of the sulfuric acid releases and the cyclohexanone spill discharged into nearby receiving streams, but the ammonia spills appear to have been contained before they directly impacted State waters. Despite the serious and chronic nature of these spills, no enforcement action was taken as a result of them. In March 1996, the company spilled 350 pounds of sulfuric acid which entered the receiving stream killing at least 500 fish. In April 1996, the permittee had another spill of 13,000 pounds of sulfuric acid killing 1,700 fish. Only after these fish kills occurred did DEQ take enforcement action. The company signed a consent order with DEQ in September 1996 agreeing to pay $25,000 for the fish kills, three days after EPA mailed the company an administrative order seeking $125,000 for the fish kills as well as other violations.*

The long history of environmental degradation by this permittee and the chronic nature of these discharges raises serious questions about the adequacy of enforcement action taken by DEQ against the facility. The company had signed a consent order in 1992 in which it had agreed to develop employee training manuals incorporating spill

prevention and control measures and to implement a preventive and predictive maintenance program. Despite this order and the continued occurrence of spills, DEQ did not take any further enforcement action to address the problem until further serious environmental damage had occurred.

Recommendation (28). **The General Assembly may wish to consider amending the *Code of Virginia* or adopting a joint resolution to clarify that the General Assembly intends for the Department of Environmental Quality to enforce the environmental laws and regulations as vigorously against local and state government entities as against other members of the regulated community.**

Recommendation (29). **The Department of Environmental Quality should establish procedures and controls to ensure that interim permit limits established in consent orders are absolutely necessary and are protective of the environment to the extent possible.**

Recommendation (30). **The Department of Environmental Quality should establish a written enforcement policy setting forth what actions will be taken in those cases in which a facility or category of facilities is known to be causing serious environmental damage. The General Assembly may wish to consider requiring the director of the Department of Environmental Quality to report to the House Committee on Conservation and Natural Resources; the Senate Committee on Agriculture, Conservation, and Natural Resources; the House Appropriations Committee; and the Senate Finance Committee on this policy after it is developed.**

Recommendation (31). **The General Assembly may wish to consider amending the *Code of Virginia* to clarify the role of the Secretary of Natural Resources in the enforcement of the environmental laws and regulations.**

DEQ Lacks Strong Working Relationship with EPA in Water Enforcement

Historically, DEQ and the State Water Control Board have viewed EPA involvement in water enforcement as a reflection of a shortcoming in the State's conduct of its responsibilities and have made every effort to limit it. While this has caused some tension in the relationship, two recent cases appear to have further strained it. The current nature of the relationship is contrary to that envisioned by the Clean Water Act and is inconsistent with a memorandum of understanding executed between Virginia and the EPA in 1975 which contemplated a cooperative partnership between the State and the federal government in water enforcement.

Long-Standing Policy to Avoid EPA Involvement. In 1975, Virginia received delegation from EPA to administer the NPDES program (referred to in Virginia now as the "VPDES program") in the State pursuant to §402 of the Clean Water Act.

Since the delegation, it has been the unwritten policy of the agency to take sufficient enforcement action against permittees to preempt EPA involvement in the water enforcement process. Historically, the agency has been fairly successful in preempting EPA involvement in enforcement except in the case of localities. As discussed previously, the agency has generally been reluctant to seek penalties against or negotiate civil charges with localities for violations. EPA does not share this philosophy toward localities, and this has been the source of some tension in the relationship. In a September 19, 1996 letter to the DEQ director, the EPA Region III Administrator wrote:

> The Commonwealth of Virginia has a history of initiating enforcement once EPA informs the Virginia Department of Environmental Quality of its intentions to pursue federal action. Some specific examples of cases where this has occurred are the City of Petersburg, Clifton Forge, and the Town of South Hill. Although in each case the Commonwealth had ample opportunity to respond to the noncompliance prior to federal involvement, such action was not pursued until EPA announced its plans to move forward on the case. In each case, the actions taken by the Commonwealth and the penalties collected were much less than EPA believes were appropriate.

Two recent cases appear to have further strained the relationship between DEQ and EPA in water enforcement. In one case, EPA viewed the State as attempting to preempt EPA action against the permittee. According to EPA:

> *As late as July 1996, the State had shown no indication of taking enforcement action against the source, and in fact had indicated that the State did not consider enforcement action necessary. Then, when DEQ and the Office of the Attorney General learned in late August that EPA had referred the case to the Department of Justice, the OAG rushed to file suit in order to preempt federal action.*

DEQ views the case differently. According to DEQ:

> *EPA had no basis for referring the case to the Department of Justice for civil action. DEQ viewed there to be no urgency in filing suit because the permittee is now in full compliance with its permit. DEQ believes that EPA actively concealed the pendency of the referral from DEQ.*

It seems clear that the OAG moved to file suit against this source in order to preempt federal action. According to the Chairman of the State Water Control Board, the DEQ director advised him that the State "had to act quickly to beat the feds." Other circumstances surrounding the action further indicate that the OAG rushed to file suit. DEQ did not prepare a referral package for the referral to the OAG, which is standard practice. In addition, the referral was not taken before the SWCB for its approval. Finally, the initial bill of complaint contained errors that had to be corrected through an amended bill of complaint.

Another case that both EPA and DEQ were pursuing this summer appears to have further strained the relationship:

> *EPA prepared and submitted a proposed assessment of civil penalty for two fish kills as well as other violations at two plants of the permittee, which was mailed on September 5, 1996. In the meantime, the State was negotiating a civil charge with the same permittee for the two fish kills and planned to propose the action at the September 12, 1996 SWCB meeting. According to DEQ staff, they did not receive word that EPA had issued a proposed penalty assessment until September 10, 1996, two days prior to the board meeting. EPA asserted that DEQ had only taken action to preempt EPA.*

The experience of these two cases appears to have damaged the relationship between the two agencies in the water enforcement area. Although enforcement staff indicated that they still have a good working relationship with EPA enforcement staff, letters exchanged between the Administrator of Region III and the director of DEQ suggest otherwise. On September 4, 1996 the director of DEQ, speaking of the referral to the Department of Justice (DOJ) discussed above, wrote: "This last action, of course, strikes a grievous blow to EPA's credibility and to federal-state cooperation in environmental enforcement." In a September 19, 1996 letter from the Regional Administrator to the DEQ director responding to the director's September 4, 1996 letter, the Regional Administrator wrote:

> Finally, the events of this past week involving [a permittee] are cause for further concern. If there remained any question of your intentions to try to insulate violating industries from federal enforcement, your recent Order with [a permittee] should erase all uncertainty. Rather than strengthen the desirable federal/state partnership for enforcement that you mention in your letter, the actions by the Commonwealth in attempting to shield two violators from legitimate federal enforcement has provided no basis and little hope for any effective cooperation on enforcement matters.

The current nature of the relationship between DEQ and EPA is contrary to the intent of the Clean Water Act and inconsistent with an agreement entered between EPA and Virginia in 1975 when the VPDES program was delegated to the State. The memorandum states that "the State Water Control Board shall be the primary enforcement agency with respect to permits issued under the VPDES program, and the Regional Administrator shall assume a strong supporting role." This agreement, which was signed by the Executive Secretary of the State Water Control Board, contemplated a cooperative partnership between EPA and DEQ in water enforcement, with EPA playing an important supporting role. Over time, the State Water Control Board and DEQ appear to have lost sight of EPA's role in the process, making every effort to keep EPA out of the enforcement process.

While DEQ may have some legitimate concerns about EPA's approach to enforcement, it seems essential for DEQ to work to strengthen its relationship with EPA so that the two agencies can work in cooperation with one another to enforce the Clean Water Act and the State Water Control Law. A former director of water enforcement stated that inclusion of EPA in the enforcement process brings certain important benefits to the process. EPA can be more objective because they are further removed from the cases, and they can better distance themselves from the local impacts of enforcement. In addition, EPA has the ultimate authority to implement the Clean Water Act in Virginia, and the State needs to maintain a strong working relationship with EPA to ensure the continued delegation of the program to Virginia. Under the Clean Water Act, EPA has the authority to withdraw the approval of Virginia's VPDES program and administer it if EPA determines that the State is not adequately enforcing the requirements of the Act.

Recommendation (32). **The Department of Environmental Quality and the Environmental Protection Agency should work to improve their working relationship in water enforcement.**

ENFORCEMENT HAS LACKED STRONG MANAGEMENT

As part of the reorganization of DEQ, management has theoretically decentralized all of enforcement. This decentralization has not had much impact on air enforcement, which was already decentralized, but it has significantly changed both the water and waste programs, which were both centralized previously. Despite this significant restructuring of water and waste, the central office has not yet provided detailed guidance on how to implement the enforcement program and has not yet established effective mechanisms to provide oversight of the decentralized enforcement process. This lack of guidance and oversight has resulted both in inconsistencies across regions, as well as confusion among regional enforcement staff. Moreover, it appears that DEQ top management does not consider enforcement to be a high priority under the reorganized structure, because of inattention to problems, staffing, and policy development. Finally, management needs to clarify whether enforcement staff have the authority to use supplemental environmental projects and stipulated penalties in implementing the enforcement program.

Enforcement Has Lacked Guidance

In June of 1995, management at DEQ made the decision to substantially restructure water and waste enforcement and decentralize both enforcement programs. Along with the decentralization, management announced that they would be developing a new enforcement policy to guide regional enforcement. In March 1996, the central office issued the new policy.

DEQ enforcement staff have consistently expressed frustration with the new policy document. Most of the enforcement staff responding to the JLARC survey of DEQ

employees disagreed with the statement that the new enforcement policy provides adequate guidance for regional enforcement staff. In interviews with JLARC staff, several DEQ enforcement staff stated that the policy is a very general document with limited practical use in determining how to implement the enforcement program. For example, enforcement staff stated that there was no guidance provided on how to integrate the existing notice of violation system with the new general approach to enforcement. Some of those enforcement staff interviewed also expressed frustration that their input was not adequately considered in the development of the new policy.

Enforcement Has Lacked Sufficient Central Office Oversight

In addition to the problem of guidance, there has been very little oversight of the enforcement process since the decentralization. The central office staff have had a minor role in the enforcement process. Their review of proposed enforcement actions has been limited. In addition, there has not been any post-audit of enforcement actions to ensure that they are being implemented consistently.

Central Review by Technical Staff of Proposed Actions Is Limited. One of the concerns expressed with the enforcement program has been the lack of review of proposed enforcement actions by central office technical staff. Prior to 1994, the central enforcement staff had a comprehensive review process whereby they reviewed each proposed enforcement action prior to presenting it to the violator to determine whether it was consistent with past enforcement actions.

Under the current system, regional staff are supposed to submit proposed enforcement actions for review prior to taking action. However, the central office is given only 24 hours to conduct this review. One central enforcement staff person stated that the central review process has not worked effectively. According to this employee, 24 hours is not always a sufficient amount of time to conduct a review that the central office needs to be doing in order to assess qualitatively a proposed enforcement action. In addition, a DEQ employee indicated that the regions are sometimes taking enforcement actions, subject to subsequent approval by the SWCB, without even submitting the proposed action for the 24 hour review.

Central review of enforcement actions is also limited after an action is taken. Presently, there is no formal post-audit system in place to review the enforcement actions in any of the three media. In interviews, two of the regional directors indicated that there is a need to have an audit system similar to the one developed for water permitting to further ensure consistency in enforcement.

The results of the survey of DEQ employees indicates that enforcement staff view the lack of oversight to be a problem. Most of the enforcement staff who responded to the survey disagreed with the statement that DEQ headquarters staff exercise sufficient oversight.

Lack of Guidance and Oversight Has Resulted in Inconsistencies

The lack of guidance and oversight has directly impacted the effectiveness of the enforcement process. Inconsistencies have developed in the way that different regions are implementing the water enforcement program. In addition, it has led to confusion in at least two enforcement cases.

Inconsistencies Have Developed. One example of an inconsistency that has developed is the policy regarding the issuance of Notices of Violation. Several of the regions have changed their approach to the issuance of Notices of Violation in the last year. These regions no longer issue a Notice of Violation each time a permittee receives a point for violations. Instead, they are issuing "letters of admonition" and only issuing Notices of Violations when the violator reaches four points, and DEQ is considering formal enforcement action. In contrast, other regions have continued to issue Notices of Violations for each point of violation as was done prior to the adoption of the new enforcement policy. Therefore, a similar pattern of violations will result in varying treatment, depending on the region.

The lack of guidance from the central office has also led to the development of different procedures for enforcement in the regions. Enforcement staff have indicated that at least two regions have developed their own regional enforcement manuals to govern the enforcement process.

Confusion in Assessment of Penalties. The lack of guidance and oversight has also resulted in some confusion in the implementation of the enforcement program. The following examples illustrate problems that have arisen as a result of lack of effective guidance and oversight from headquarters:

> *A regional office decided to take an enforcement action without seeking review of the proposed action from the headquarters staff. The regional office sent the permittee a letter advising them that DEQ intended to propose an enforcement action against the permittee at the next SWCB meeting. After subsequent review, headquarters enforcement staff determined that DEQ was not prepared to go forward with enforcement action. DEQ was forced to retract the letter sent to the permittee.*
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> * * *
>
> *A regional office decided to take enforcement action against a permittee for violations of the State Water Control Law. The regional office developed a proposed civil charge of $12,500 and submitted it informally to the permittee without review by headquarters enforcement staff. The permittee agreed to the penalty amount. Headquarters staff subsequently reviewed the proposed civil charge offer and determined that the amount was too low. The regional office then had to retract its*

original offer. The source subsequently agreed to a civil charge of twice the original amount three days after EPA mailed an administrative order demanding a $125,000 penalty.

Survey Responses Indicate Concern with Consistency. Responses to the DEQ staff survey indicate that DEQ enforcement staff are concerned with the issue of consistency in enforcement. Most of the enforcement staff who responded to the survey disagreed with the statement that DEQ enforcement actions are consistent across regions.

Recommendation (33). **The Department of Environmental Quality's central office staff should provide detailed guidance to regional enforcement staff that will enable staff to implement consistently and effectively the enforcement program throughout the State.**

Recommendation (34). **Headquarters staff should establish a process for effective central review of all proposed consent orders and should develop an auditing program to conduct post-audits of enforcement actions.**

Enforcement Is Not a High Priority

It is apparent that over the last two years enforcement has not been a high priority and has not received a strong commitment from management. This lack of commitment is evidenced by inattention to problems, staffing, and policy development.

Lack of Attention to Reporting System. One example of the lack of commitment to the enforcement program has been the failure to address a computer breakdown that interrupted the reporting of compliance data to EPA. The water enforcement program has developed a computer system that receives DMR information from the regions and converts it for transfer to EPA. This information is required to be submitted to EPA to be entered into the national tracking system. The data serves as the basis for EPA's oversight of Virginia's water enforcement program.

In 1994, the DEQ employee in charge of operating this system took early retirement, and DEQ management did not replace him. Since his departure, the system has not functioned properly, and DEQ failed to submit the required data to EPA for 21 months. Finally, in July of this year EPA notified DEQ that it would withhold $1.6 million in water grant funds until DEQ provided EPA with complete DMR information for the period October 1994 through June 1996. As of October 31, 1996, DEQ had still not provided all of the required information in a readable form, and EPA continues to withhold the grant funds.

Management Has Failed to Adequately Staff Compliance Auditor Positions. Lack of commitment to enforcement is also demonstrated by the failure to adequately staff the compliance auditor position in two regions. The compliance auditor position is essential to the water enforcement program because the auditors are

responsible for collecting and analyzing the discharge monitoring reports submitted by all permittees. The auditors must then determine which permittees are out of compliance with their permits and which ones should be referred to enforcement.

Despite the importance of this function, it has not been properly staffed in one region for approximately two years. In that region, the following has occurred:

> *The compliance auditor left the position. For several months, the region borrowed personnel from other regions to perform the compliance auditing function. The position was then filled with an employee from the central office. In interviews with JLARC staff, DEQ staff indicated that this person did not have the proper background for the position, was not provided adequate training in the position, and did not have a proper understanding of the responsibilities of the position, yet he remained in the position for nine months. In the spring of 1996 a former air inspector was brought into the position, and it appears that the function is gradually being restored.*

In an interview, the regional director for this region acknowledged that there was a breakdown in this function for a substantial period of time, which hindered the water enforcement program in the region during the period.

Another region continues to be without a compliance auditor. They are required to rely on the services of a compliance auditor in another region. According to the regional director, it is difficult for the region to determine what they need to do in terms of water enforcement without their own compliance auditor.

Management Failed to Adequately Staff Enforcement Position. In addition to the failure to adequately staff the compliance auditor positions, management also failed to staff the water enforcement position in one region for eight months. The following occurred:

> *A senior enforcement specialist was assigned to handle water enforcement in the region under the reorganization that occurred in June 1995. However, this staff person was requested to assist simultaneously with the negotiation of lease space for new DEQ offices around the State. By July 1995, this enforcement specialist was working almost exclusively on the negotiation of the lease space and continued to do so through December 1995. In January 1996, this person became a staff attorney in the central office. In the meantime, there was no one assigned or hired to handle water enforcement for the region. The senior enforcement position for the region was not filled until February 1996, eight months after the position was essentially vacated.*

Failure to Develop Final Guidance for Unilateral Penalty. Further evidence of the low priority given to enforcement is the failure of DEQ to develop guidance for the implementation of the unilateral penalty authority. During the 1996 session, the

General Assembly enacted House Bill 1008 giving DEQ unilateral penalty authority. This legislation was enacted to give DEQ a significant new enforcement tool to be used in appropriate cases. Prior to the enactment of this legislation, the agency could only seek penalties that were mutually agreed upon by DEQ and a violator. This new authority gives the agency more leverage in negotiating civil charges and enables the agency to take punitive action against violators that are uncooperative, without having to refer a case to the Office of the Attorney General for legal action. As of December 5, 1996, management had still not developed final guidance to implement this new authority, although the statute was enacted during the 1996 General Assembly session and took effect more than four months ago.

Survey Responses Suggest Enforcement Is Not a Priority. The survey responses of regional enforcement staff suggest that there is a perception among enforcement staff that management does not consider enforcement to be a priority. Most of the enforcement staff who responded to the JLARC survey disagreed with the statement that "Enforcement of the environmental laws and regulations is a priority of agency management."

Civil Charge Authority Should Be Clarified

Historically, there has been some confusion among DEQ enforcement staff regarding the authority to use supplemental environmental projects (SEPs) to offset penalties as well as the authority to use stipulated civil charges or penalties in lieu of traditional civil charges. This has led to some inconsistencies in the use of SEPs and stipulated penalties and has resulted in some confusion and frustration on the part of enforcement staff regarding their ability to use these mechanisms in enforcement. Supplemental projects, which have been encouraged by EPA, are environmentally beneficial projects undertaken by one who has violated an environmental statute or regulation that would not otherwise be required to be performed in lieu of payment of a penalty or some portion of a penalty. Stipulated penalties are contingent penalties based on future violations. The Office of the Attorney General has expressed concern with the use of both mechanisms under current State statute.

Supplemental Environmental Projects (SEPs). In the water area, enforcement staff have been advised by the OAG against the use of supplemental environmental projects because of language in the State Water Control Law which specifies where civil charges and penalties are to be paid. Section 62.1-44.15 states that civil charges "shall be paid into the state treasury and deposited by the State Treasurer into the Virginia Environmental Emergency Response Fund." Moreover, §62.1-44.32(a) states that "civil penalties may, in the discretion of the court assessing them, be directed to be paid into the treasury of the county, city, or town in which the violation occurred" or paid into the Virginia Environmental Emergency Response Fund. Based on this statutory language, the OAG has advised DEQ that enforcement staff do not appear to have the legal authority to use supplemental environmental projects to offset penalties or civil charges.

Despite similar language in the Air law that all civil charges shall be deposited in the Virginia Environmental Emergency Response Fund, air enforcement staff have been regularly using supplemental environmental projects to offset assessed civil charges for the last two years. In addition, DEQ staff have indicated in interviews that water enforcement staff have sometimes entered into informal agreements with members of the regulated community to perform SEPs in lieu of civil charges.

Stipulated Penalties. In addition to SEPs, there appears to have also been some confusion over the use of stipulated penalties. Members of DEQ's water enforcement staff have expressed the desire to use stipulated penalties as a means to discourage violations and encourage compliance but have been advised that they cannot use them. According to the OAG, DEQ may not negotiate agreements for the payment of stipulated penalties because of language in §62.1-44.15(8d). This section states that the Board may negotiate civil charges for "past violations" of the State Water Control Law. According to the OAG, the inclusion of the phrase "past violations" indicates that the General Assembly did not intend for DEQ to negotiate possible penalties for violations that had not yet occurred.

A recent enforcement case illustrates the confusion that has developed over this issue.

> *An enforcement specialist had proposed to use a stipulated penalty in a case proposed to go before the SWCB at its May meeting. However, the OAG advised the enforcement specialist the day before the meeting that DEQ did not have the authority to enter into agreements that provided for stipulated penalties. The case had to be removed from the Board's agenda.*

With the confusion and the inconsistencies regarding the use of SEPs and stipulated penalties, the General Assembly may wish to clarify its intent with regard to the use of both.

Recommendation (35). **The Department of Environmental Quality should make enforcement of the environmental laws and regulations a priority of the agency and should ensure that all functions necessary to carry out an effective enforcement program are working adequately, the compliance auditor positions are adequately staffed, and necessary guidance is developed to implement the Department of Environmental Quality's enforcement authority.**

Recommendation (36). **The General Assembly may wish to amend the State Water Control Law, the Air Pollution Control Law, and the Virginia Waste Management Act to clarify whether supplemental environmental projects and stipulated penalties may be used in the negotiation of enforcement agreements.**

RELATIONSHIP BETWEEN DEQ AND OAG COULD BE STRENGTHENED

In Virginia, the Office of the Attorney General (OAG) is an integral part of the environmental enforcement process because it is the only agency that can bring civil legal action for violations of environmental statutes or regulations when administrative remedies have been exhausted. As a result, a strong working relationship between the OAG and DEQ is important for carrying out an effective enforcement program. Over the years, there has sometimes been a lack of coordination and communication between the two agencies, which has hindered the working relationship. Consequently, the perception has developed on the part of DEQ enforcement staff that the OAG is not a viable option to resolve enforcement cases. In addition, enforcement staff have raised the concern that the OAG has too narrowly limited the cases that it will accept for civil action.

Coordination and Cooperation Between DEQ and the OAG Has Been Lacking

Coordination and communication between the OAG and DEQ is sometimes problematic in the enforcement process. In one recent water case, there appeared to be a serious lack of coordination between the two agencies. Likewise, a review of DEQ files and interviews with enforcement staff revealed that there have been continuing coordination and communication problems between the two agencies. Such problems are obstacles to effectively enforcing the Commonwealth's environmental statutes.

Recent Case Suggests Coordination Problem. A recent lawsuit filed by the OAG against a major permittee demonstrated a fundamental lack of coordination in the enforcement process between the OAG and DEQ.

> *DEQ appeared to have made the decision not to pursue any further action against the permittee for past violations because the permittee was now in compliance with its permit. However, upon being made aware that the Department of Justice was preparing to file suit against this permittee, the OAG rushed to file suit. Enforcement staff below the level of director of enforcement were not involved in the decision regarding the lawsuit. In addition, the OAG circumvented the standard operating procedures for enforcement matters. The OAG did not provide for the opportunity for DEQ to pursue an administrative remedy prior to referral of the case to the OAG. Moreover, the case was not submitted to the State Water Control Board for approval prior to the referral, and a referral package was not prepared by DEQ enforcement staff for the OAG.*

The OAG's action to file suit in this case was inconsistent with the DEQ's prior water enforcement policy. It has historically been the policy to exhaust administrative remedies prior to referral of a case to the OAG. In addition, it has historically been the

SWCB's policy to bring all referrals to the OAG before the SWCB for approval. Finally, it has also been the policy of DEQ and the SWCB to prepare a detailed referral package when referring a case to the OAG. None of these practices were followed in this case. According to DEQ enforcement staff, the failure to coordinate its actions with the DEQ staff resulted in inaccuracies in the initial bill of complaint which required the OAG to file an amended bill of complaint.

Poor Communication and Different Expectations Have Plagued the Relationship. Another problem that appears to have occurred over the years is poor communication between the agencies. A DEQ employee stated that one of the problems in the relationship has been a breakdown in communication regarding cases that have been referred, but that the OAG does not think are worth pursuing. According to this employee, when the OAG determines that a case is not worth pursuing, the OAG in the past has not always expressed this opinion to DEQ enforcement staff. Instead, the cases have languished at the OAG with no further action. Approximately two years ago, DEQ asked for the return of five cases that had been at the OAG for several years with little or no activity.

Another problem appears to have been a difference in expectations as to what DEQ needs to do to prepare a case for referral. Based on JLARC staff's file review, there have been instances in which the OAG refused to pursue a case because, in the OAG's opinion, it was not adequately prepared and documented. For example in one case, the OAG returned a referral to the SWCB writing that the referral memorandum "omits critical information and does not actually constitute a referral for enforcement." The letter from the OAG further stated, "In short, this referral does not provide the basis for bringing a legal action against the [county]." Regarding another case, a DEQ enforcement specialist wrote that the OAG "blamed the lack of information in the original referral" as the reason it had not filed suit.

The OAG Is Not Viewed by DEQ Enforcement Staff as a Credible Enforcement Option

The lack of coordination and communication may have limited the role of the Office of the Attorney General in the enforcement process. DEQ staff surveyed do not perceive the OAG to be a useful tool in enforcement. In addition, cases referred to the OAG have declined steadily over the last several years.

DEQ Staff Do Not View the OAG as a Viable Option. In interviews and survey responses, DEQ enforcement staff have indicated that they do not view the OAG as a credible enforcement option. When asked in the JLARC survey of DEQ employees whether they agreed with the statement that the OAG "will promptly take action against violators who are referred to the Attorney General for legal action by DEQ enforcement staff", most of those who responded indicated that they "strongly disagreed" with this statement. Moreover, in a June 21, 1994 memorandum from several enforcement staff to the DEQ director, they wrote, "DEQ access to Attorney General assistance and resources is limited. If DEQ is to gain resolution of tough cases, it must do so in-house."

Cases Referred to the OAG Have Declined. The fact that the enforcement staff do not view the OAG as a viable enforcement option is supported by the number of cases that have been referred to the OAG over the last several years. As Table 12 demonstrates, the number of cases referred from DEQ and its predecessor agencies to the Office of the Attorney General has declined steadily over the last nine years to a total of one case in FY 1995 and 1996 combined.

Table 12

DEQ Enforcement Referrals to the Office of the Attorney General

Fiscal Year	Number of Referrals
1988	19
1989	30
1990	12
1991	10
1992	9
1993	2
1994	2
1995	0
1996	1

Note: In FY 1997 one enforcement case has been referred, and one enforcement case has been initiated by the OAG without a referral.

Source: DEQ case tracking lists.

However, the decline in referrals over the last three years may also be the result of DEQ's decision to de-emphasize enforcement. The decline in cases referred to the OAG is consistent with the decline in formal enforcement actions taken by DEQ during this period. In fact, in contrast to DEQ, the OAG has demonstrated a willingness to take strong enforcement actions in recent months. Nevertheless, the perception that has developed among DEQ enforcement staff that the OAG is not a viable enforcement option threatens the effectiveness of the enforcement process. Under an enforcement approach in which the negotiation of civil charges is the primary enforcement mechanism, it is essential to have a credible threat of legal action as leverage in the negotiation process. Otherwise, the enforcement specialists are likely to be negotiating from a position of weakness and the regulated community from a position of strength. This could result in administrative agreements that neither achieve compliance nor deter future violations.

***Recommendation* (37). The Department of Environmental Quality and the Office of the Attorney General need to develop a memorandum of understanding between the two agencies addressing the role of each agency in the enforcement process. The Office of the Attorney General and the Department**

of Environmental Quality need to assess the current means of communication between the two agencies and develop procedures to improve communication regarding the status of cases that have been referred.

The OAG Needs to Broaden Its Involvement in Enforcement

One concern that has been raised is the reluctance of the OAG to file suit except in those cases in which there has been actual environmental damage. According to a memorandum written in August 1994 from the DEQ directors of the water division and water enforcement to the director of DEQ, it has been the policy of the OAG to refrain from court action in the absence of actual environmental damage. The memorandum stated that as a result of that practice: "The permit program has experienced great difficulty enforcing the statutory and regulatory requirements governing the permit application process." The memorandum further states that "the application, permitting, and record keeping requirements provide the foundation for the regulatory programs and that failure to enforce these requirements will lead to potential environmental impact."

This memorandum was written to address a case involving a recalcitrant company that refused to comply with the basic permitting requirements:

> *The company in question had numerous violations at several facilities. These violations included: several unpermitted discharges, failure to report spills, and filling of wetlands. DEQ entered into a consent order in 1993 which was designed to bring the plant into compliance. In the year following the execution of the consent order, the company had failed to comply with any of its duties under the consent order, and had been cited for violating every provision of the order. The enforcement specialist noted that although adverse environmental impact had not occurred, the potential for such impact was present.*

Despite the extreme recalcitrance demonstrated by this company, the risk of environmental harm, and the disregard for the consent order that had been agreed upon, DEQ enforcement staff did not consider referral to the OAG at that stage to be the next option. Instead, enforcement staff recommended that DEQ continue to attempt to negotiate an amended consent order with the source.

Clearly, the OAG should not be limited to filing civil enforcement actions in those cases in which there has been an adverse environmental impact. One source noted that the OAG's policy may be the result of lack of success in State courts in those cases that did not involve environmental damage. Nevertheless, the OAG needs to be willing to take legal action in such cases. Failure to enforce the statutory and regulatory requirements through legal action when parties completely disregard them threatens to undermine the entire regulatory program.

In its response to the exposure draft of this report, the OAG notes that it finalized a memorandum of understanding in April 1996 establishing policies and

procedures concerning the provision of legal services to DEQ and setting out expectations regarding the referral of cases. This memorandum, however, is limited to a discussion of the procedural details involved with the referral of cases. It does not address the broader policy question of the role of each agency in the enforcement process. Likewise, it does not establish criteria for what types of cases should be referred to the OAG for legal action.

***Recommendation (38*). The Office of the Attorney General and the Department of Environmental Quality should work together to develop a memorandum of understanding for the referral of cases to ensure that water enforcement is timely, consistent, and certain. The memorandum should contain criteria that are sufficiently broad to include cases that involve the direct refusal by a source to comply with fundamental statutory or regulatory requirements regardless whether there is environmental damage involved. This memorandum should be completed by April 15, 1997, with a copy presented to the House Committee on Conservation and Natural Resources and the Senate Committee on Agriculture, Conservation, and Natural Resources.**

STATE AGENCY NONCOMPLIANCE IS A PROBLEM

Compliance of State agencies has been a long-term compliance and enforcement problem for DEQ and its predecessor agencies. Some State facilities have long records of noncompliance, but DEQ and the OAG have historically had an unwritten policy that they will not seek civil charges or penalties against them. However, measures short of penalties could be taken to increase the accountability of State agencies.

Several State Facilities Have Had Protracted Noncompliance

The study team's review of DEQ enforcement files revealed that there are some State facilities with long records of noncompliance with applicable environmental regulations. The team review revealed examples of long-term noncompliance with water, air, and hazardous waste regulations. In some cases, the State agencies have demonstrated recalcitrance while in other cases mere neglect.

The following case examples demonstrate some examples of State noncompliance:

> *In December 1989, the Department of Waste Management (DWM) determined that there had been mismanagement of hazardous waste at a State agency's facility. The problems included dumping hazardous materials into a drain that ran into a nearby stream and burying waste on the property. Additional problems were discovered during a 1994 inspection. As a result of the waste mismanagement, there is significant groundwater contamination in the area. When the DWM confronted*

agency staff about the problem in 1991, they denied any wrongdoing and refused to consent to the terms of a proposed compliance agreement. During subsequent years DWM and then DEQ staff have made several efforts to reach a compliance agreement to address the problem, but the agency has been uncooperative, taken contradictory positions and generally denied any wrongdoing. One DEQ staff person wrote that if this had been a private sector facility, the enforcement staff "would have sought substantial monetary penalties for these major, long term violations." A compliance agreement was finally executed between the agency and DEQ this summer.

* * *

DEQ became aware of illegal discharges from one State facility in 1989. The facility was discharging ash from air scrubbers to a nearby creek. An environmental assessment of the receiving stream conducted in 1990 found serious environmental degradation and recommended that the unpermitted discharge be eliminated as soon as feasible. After several years of enforcement efforts and 31 notices of violation issued between October 1989 and March 1994, the agency entered an executive compliance agreement with DEQ in March 1994 which required the facility to cease the ash discharge and remediate the creek by December 1, 1995. As of August 1996, none of the requirements of the agreement had been met. In September 1996, the agency entered another executive compliance agreement with DEQ which requires them to cease discharging coal ash to the receiving stream by December 1, 1997.

* * *

A State facility entered into a compliance agreement with DEQ in 1988 agreeing to upgrade its wastewater treatment plant and to construct a pipeline to transport the effluent. The improvements were needed to comply with effluent limitations in the permit. In 1992, DEQ agreed to extend the compliance deadline to 1994 based on claims by the agency that it was having difficulty gaining necessary property easements. In August of this year, another executive compliance agreement was signed giving the unit until 1997 to complete the upgrade and the new pipeline.

In addition to the waste and water areas, there have also been agency compliance problems with the air statutes and regulations. State universities have been the primary violators of the air laws and regulations. For example:

A major State university has received three consent orders in the last three years. The violations have included continued failure to comply with reporting and monitoring requirements as well as significant violations of fuel usage requirements in the university's permit. The

DEQ enforcement representative working on the case wrote: "[The university] is a PSD major with a poor compliance record, and is being watched closely by EPA." DEQ is currently negotiating a compliance agreement with the university to address the violations.

Measures Should Be Taken to Improve Accountability

DEQ is limited in what enforcement action it can take against State agencies that are not in compliance. DEQ can enter into mutual agreements with agencies to address violations, but DEQ has an informal policy of not demanding civil charges from a State agency, and the Office of the Attorney General will not file legal action on behalf of one State agency against another. There are, however, means by which the accountability of noncompliant State agencies could be increased.

Leadership from the Secretary of Natural Resources and Governor. One means to improve accountability would be to establish mechanisms to bring cases of long-term agency noncompliance to the attention of the Secretary of Natural Resources and Governor when necessary. The DEQ director and the Secretary could then work with their counterparts to address these problems at a higher level. When a compliance problem cannot be resolved at this level, the Governor needs to take the lead in resolving these matters.

In previous years, compliance of State agencies was formally tracked and regular compliance reports were submitted to the previous Secretary of Natural Resources. However, this practice has been discontinued. Restoring this tracking and reporting system would serve to bring these cases to the attention of the Secretary of Natural Resources and the Governor so that they could work to resolve them.

Public Notice of State Noncompliance. Another means to improve accountability may be to make cases of agency noncompliance public. Presently, there is no mechanism to make this information available to the public. As a result, agencies generally are not forced to be accountable to the public for their environmental noncompliance.

In the water area, non-state facilities with significant compliance problems are presented publicly to the State Water Control Board on a regular basis. DEQ could amend its procedures to also present publicly State agencies with significant noncompliance to the SWCB. While the air and waste citizen boards do not generally address compliance and enforcement matters, their procedures could be amended to require DEQ to present cases of State agency noncompliance in air and waste to the appropriate citizen board on a regular basis.

Report Noncompliance to General Assembly. Another means to improve accountability may be to require regular reports by DEQ to the House Committee on Conservation and Natural Resources; the Senate Committee on Agriculture, Conserva-

tion, and Natural Resources; the House Appropriations Committee; and the Senate Finance Committee. Many of these compliance problems involve capital outlay needs necessary to conduct upgrades or perform cleanups. Regular reports to these committees might help to increase the accountability of State agencies while also providing the General Assembly budget committees with better information about the funding needs of agencies with compliance problems.

Recommendation (39). **DEQ should re-establish a tracking and reporting system of State noncompliance and regularly report cases of noncompliance to the Governor and Secretary of Natural Resources.**

Recommendation (40). **DEQ should regularly report cases of significant State noncompliance in water, air, and waste at the appropriate citizen board meetings.**

Recommendation **(41). The General Assembly may wish to consider requiring that the Department of Environmental Quality annually report on State agencies out of compliance with environmental statutes or regulations to the House Committee on Conservation and Natural Resources; the Senate Committee on Agriculture, Conservation, and Natural Resources; the House Appropriations Committee; and the Senate Finance Committee.**

VI. Organization and Management of the Department of Environmental Quality

The Department of Environmental Quality has existed for approximately three and one half years. During this time, the agency has undergone a merger of four agencies to create the new department in 1993, a significant change in organization to accommodate regionalization of the agency's operations in 1994, and a significant downsizing of the agency's staff in 1995. The agency has also had three directors during the first three years of its existence.

The number and scope of changes facing DEQ during the first three years of its existence have created significant management problems, some of which remain to be addressed. These include: improving employee morale and trust in agency management, streamlining the number of central office top management staff, appropriately defining the role of central office staff, enhancing training for regional staff, and improving space and personnel planning for DEQ's regional offices. Improving poor leadership is one of the most salient challenges facing DEQ. To succeed as a regulatory agency, DEQ needs top agency executives committed to addressing these management challenges and to fulfilling the agency's statutory mission, particularly with regard to compliance and enforcement, two areas neglected by current management.

DEQ INTERNAL MANAGEMENT IS POOR

The previous chapters reflect concern about DEQ internal management, particularly trust in agency management, communication within DEQ, and employee fear of retaliation for carrying out the agency's statutory mission to enforce environmental laws and regulations. Employee trust is diminished by being instructed to ignore regulations as with the air division director's February 1995 electronic mail message regarding the air toxic pollutants regulation. Problems with employee trust in agency management are also reflected in concerns about retaliation for angering members of the regulated community, in particular among enforcement staff. Poor internal communication is reflected in: (1) concerns about regional inconsistency in water monitoring, (2) inconsistent employee responses regarding regional policies on unannounced inspections, (3) miscommunication between regional and central office staff on two high profile enforcement cases, and (4) problematic relationships between DEQ enforcement staff and staff from the Office of the Attorney General and the Environmental Protection Agency.

During the second phase of this review, JLARC staff conducted a planned follow-up survey to the September 1995 JLARC survey of DEQ employees, reported in the interim report on DEQ. When compared with JLARC's September 1995 survey of selected DEQ staff, findings from JLARC's September 1996 survey of selected DEQ staff suggests that morale in the agency has improved slightly. Morale appears to have

improved due to several factors, including a greater sense of job security among employees and collocation of regional offices. However, morale does not appear to have improved as much as might be expected given that DEQ's reorganization has now been completed for over a year and that DEQ is now increasing in staff, rather than decreasing.

Trust in agency management remains low among most DEQ employees; survey results regarding trust in agency management do not vary significantly from the levels found in JLARC's 1995 survey of DEQ employees. Moreover, communication among DEQ employees appears problematic.

Morale Among DEQ Employees Has Improved Slightly, But Is Still Problematic

As was the case with the 1995 survey of 145 DEQ employees, JLARC's 1996 survey of 301 employees includes two items assessing employee morale. The first item asks employees to agree or disagree with the statement "DEQ employee morale is good" (Table 13). The second item asks DEQ employees to assess their own morale (Table 14).

As can be seen from Table 13, DEQ employees' September 1996 assessment of agency morale has improved somewhat when compared to the 1995 responses. However, 75 percent of DEQ employees still disagree or strongly disagree with the statement that "DEQ employee morale is good." As Table 14 reflects, DEQ employees' assessment of their own morale improved somewhat since the September 1995 survey. In September 1995, 33 percent of DEQ employees rated their morale as good or excellent and 67 percent rated their morale as fair or poor. In September 1996, 37 percent of DEQ employees rated their morale as good or excellent and 63 percent rated their morale as fair or poor.

DEQ employees surveyed were asked to indicate the factors that influence their morale. These factors included conditions specific to DEQ as well as general factors

Table 13

Comparison of DEQ Employee Survey Responses Rating Morale

Statement: Employee morale is good.

Year	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	No Opinion %	Number of Respondents
1996	0	18	50	24	7	255
1995	0	4	34	55	7	127

Note: Percentages may not add to 100 due to rounding; responses have been weighted to produce a stratified sample.

Source: JLARC surveys of Department of Environmental Quality employees, September 1995 and September 1996.

Table 14

Employee Perceptions of Their Own Morale

Question: How would you rate your own morale at the present time?

Year	Excellent %	Good %	Fair %	Poor %	Number of Respondents
1996	6	31	46	17	255
1995	4	29	39	28	127

Note: Percentages may not add to 100 due to rounding; responses have been weighted to produce a stratified sample.

Source: JLARC surveys of Department of Environmental Quality employees, September 1995 and September 1996.

impacting all State employees (such as salary and wages). Factors mentioned by ten or more survey respondents include: salary and wage concerns, concerns about the immediate supervisor of the respondent, concerns about the perceived lack of environmental concern in top leadership, a poor work environment, job security, job satisfaction, lack of training, opportunities for advancement, poor communication, perceived problems with upper management, personnel policies, workload, a perception of lack of leadership, politicization of the agency, and perceived lack of respect for employees by agency management.

Employees' written comments regarding factors affecting their morale included factors both positively and negatively affecting their morale. Comments about positive factors tended to stress positive relationships with immediate supervisors as well as collocation of regional offices and working conditions. These included:

> good supervisor—regional director; good coworkers—regional staff; good work location;
>
> * * *
>
> good working relationship with supervisor—regional co-location about to be completed;
>
> * * *
>
> flex time/four day workweek—benefits (insurance, annual leave, sick leave, holidays)—work environment in (location deleted) regional office;
>
> * * *

> my immediate supervisor (name deleted) is a fair boss who tries his best to listen to his employees. He is the main reason for my good morale;
>
> * * *
>
> good working relationship with my immediate supervisor and most of my coworkers;
>
> * * *
>
> I like the type of work and the group of people I work with.

Comments on factors negatively impacting morale focused on employees' concern about the agency's mission, agency leadership, and fears of retaliation. For example:

> DEQ pays lip service to participation of staff in key issues. Technical responses are often submitted to the Secretary for her approval before they are forwarded. The Director seems powerless to make decisions. The emphasis is not on environmental protection but on economic development. Recommendations directed at protecting natural resources are viewed by management as anti-development;
>
> * * *
>
> lack of support and direction from agency management.....
>
> * * *
>
> employees and managers just "go with the flow" for fear of job loss.....
>
> * * *
>
> lack of program support with regard to enforcement and proper guidance from upper management;
>
> * * *
>
> very poor management;....."permittee first;"
>
> * * *
>
> perception that every decision is a career decision—public perception that we are in cahoots with industry;
>
> * * *

staff are intimidated by strong arm tactics of upper management and feel pressured to make decisions based on fear of reprisal; staff does not feel they have the support of management, especially when interpretations are not popular with the regulated community.

During an interview with JLARC staff, the DEQ director stated that his first priority as agency head is improving agency morale. This focus appears appropriate, but as the next sections indicate, DEQ also needs to focus on improving trust in agency management and internal communication.

Low Level of Trust in Agency Management Remains a Problem

In addition to morale, a concern raised by JLARC's early 1996 interim review of DEQ is that trust in agency management appeared low, based on findings from the September 1995 JLARC survey of DEQ employees. Results from the September 1996 JLARC survey of DEQ employees also suggest that employee trust in agency management remains low.

Table 15 shows the findings from the two DEQ employee surveys regarding trust in agency management. As can be seen from this table, DEQ employees' trust in agency management does not appear to have significantly improved since the September 1995 survey and remains low. The continuing low level of trust in agency management is potentially problematic for the agency's goal of empowering employees to make decisions at the lowest possible level and for building a unified agency to address pollution issues in a multimedia fashion.

Table 15

Comparison of Survey Responses Rating Trust in Agency Management

Statement: Employee trust in agency management is good.

Year	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	No Opinion %	Number of Respondents
1996	1	13	37	38	11	255
1995	0	9	43	40	9	127

Note: Percentages may not add to 100 due to rounding; responses have been weighted to produce a stratified sample.

Source: JLARC surveys of Department of Environmental Quality employees, September 1995 and September 1996.

Communication Within DEQ Needs Improvement

Several findings earlier in this report identify communication problems within DEQ. These include:

- Chapter IV's finding that regional water monitoring strategies vary significantly and central office water monitoring staff lack authority to ensure consistency among regional offices;

- in one case regional staff were forced to retract a notification ("15 day") letter already sent to a permit holder stating the agency's intent to take enforcement action, after central office staff recommended against the regional office's proposed penalty;

- in another case regional staff reached a "handshake agreement" with a permit holder for a $12,500 civil charge; this agreement had to be renegotiated to $25,000 when central office staff were notified after the fact and pointed out flaws in the regional office's penalty analysis;

- DEQ's enforcement efforts have been hampered by a working relationship with the Office of the Attorney General that needs improvement, particularly with regard to when to refer the case for civil action; and

- DEQ's relationship with the Environmental Protection Agency has significantly deteriorated, particularly in water enforcement, leading to withholding of grant funds and EPA's taking independent enforcement action.

A recent fish kill in Southwest Virginia points out further cause for concern regarding DEQ internal communication. On October 24, 1996 a major fish kill occurred and came to the attention of DEQ regional staff in the Southwest Office. The regional director notified the DEQ director on October 25, 1996.

However, according to DEQ regional staff, the DEQ director of program support and evaluation was not notified until October 30, 1996, when he received a copy of a news clipping regarding the incident from staff in the Division of Legislative Services. Apparently DEQ top management had not informed technical staff.

The director of program support and evaluation is the senior technical staff member within the agency, and he determined that central office resources were needed to respond to the fish kill. He drove to the scene of the fish kill, with two other DEQ central office staff to assist in responding to the incident. Regional staff acknowledged that, in retrospect, it would have been better to contact central office technical staff directly, as information did not appear to flow in this case from top management to senior technical staff.

An additional example of poor communication involves an electronic mail message sent by the air division director to air program staff in February 1995. According

to the air division director, this message was intended to ensure consistency in the state operating permit program. A number of DEQ staff, including one regional director, interviewed by JLARC staff stated that they interpreted the message as an instruction to ignore the air toxic pollutants regulations.

JLARC staff's survey of DEQ employees also suggests that communication within DEQ is problematic. Table 16 compares the findings from the September 1996 JLARC survey of DEQ employees with the findings from the September 1995 JLARC survey of DEQ employees.

Table 16

Comparison of DEQ Employee Survey Responses Rating Communication Within the Agency

Statement: Communication within DEQ is good.

Year	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	No Opinion %	Number of Respondents
1996	1	23	41	29	7	255
1995	1	18	39	30	9	127

Note: Percentages may not add to 100 due to rounding; responses have been weighted to produce a stratified sample.

Source: JLARC surveys of Department of Environmental Quality employees, September 1995 and September 1996.

As is the case with DEQ employee survey responses regarding trust in agency management, DEQ employees' September 1996 survey responses suggest that communication within the agency has not improved appreciably since September 1995. Both sets of survey responses displayed in Table 16 suggest that communication within DEQ is problematic. Poor internal communication may well contribute to poor morale and a low level of trust in agency management. In addition, poor internal communication may limit the agency's effectiveness in carrying out its statutory mandate.

Agency Leadership

The JLARC employee survey also revealed concern by DEQ employees about the effectiveness of agency leadership, the clarity of the goals of agency leadership and the commitment of agency leadership to environmental protection. Responses to these items are shown in Table 17.

As Table 17 reflects, majorities of DEQ employees surveyed disagreed or strongly disagreed with all three survey statements about DEQ leadership. Fifty-seven percent of survey respondents disagreed or strongly disagreed with the statement "agency leadership is effective;" 27 percent agreed or strongly agreed. Fifty-four percent

Table 17

Survey Responses Regarding Agency Leadership

Statement/Year	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	No Opinion %	Number of Respondents
Agency leadership is effective (1996)	1	26	30	27	17	255
Agency leadership is effective (1995)	2	29	29	21	16	127
DEQ leadership's goals and priorities are clear (1996)	6	23	36	18	17	255
DEQ leadership's goals and priorities are clear (1995)	2	19	37	23	18	127
*DEQ top leadership values environmental protection (1996)**	3	17	28	25	27	255

*Item was not included in the 1995 survey.

Note: Percentages may not add to 100 due to rounding; responses have been weighted to produce a stratified sample.

Source: JLARC survey of Department of Environmental Quality employees, September 1996.

of survey responses disagreed or strongly disagreed with the statement "DEQ leadership's goals and priorities are clear;" 30 percent agreed or strongly agreed with the statement. Finally, 53 percent of survey responses disagreed or strongly disagreed with the statement "DEQ top leadership values environmental protection"; 20 percent agreed or strongly agreed with the statement.

Combined with the responses shown in Table 15 regarding trust in agency management, employee responses to these items regarding agency leadership suggest that DEQ's top management has not received the "buy-in" of its employees to management's vision of the direction of the agency. It appears that DEQ management has not successfully communicated its goals and priorities to employees and has not convinced employees that top leadership is committed to the agency's core statutory purpose: environmental protection.

Employees Are Mixed in Their Views of Whether the Reorganized Agency Is More Efficient and More Effective in Protecting the Environment

As was the case with JLARC's 1996 interim report on DEQ, employees surveyed were mixed in their views of whether the agency will be more efficient and more effective

in protecting the environment as a result of the 1995 reorganization of the agency. Table 18 reflects employee responses to survey items on whether the agency will be more efficient. Table 19 reflects employee responses to survey items on whether the agency will be more effective.

As can be seen from Table 18, slightly more respondents thought DEQ would be less efficient than thought it would be more efficient as a result of the reorganization. A plurality of respondents thought DEQ would be about the same in terms of efficiency. However, as can be seen from Table 19, more than four times as many employees (43 percent) thought DEQ would be less effective in protecting the environment than thought DEQ would be more effective in protecting the environment (10 percent) as a result of the reorganization.

Table 18

Comparison of Reorganized DEQ with the Former DEQ

Question: Overall, do you think the reorganized department will be:

Year	More Efficient %	Less Efficient %	About the Same %	No Opinion %	Number of Respondents
1996	24	29	42	5	255

Note: Responses have been weighted to produce a stratified sample.

Source: JLARC survey of Department of Environmental Quality employees, September 1996.

Table 19

Comparison of Reorganized DEQ with the Former DEQ

Question: Overall, do you think the reorganized department will be:

Year	More Effective in Protecting the Environment %	Less Effective in Protecting the Environment %	About the Same %	No Opinion %	Number of Respondents
1996	10	43	42	5	255

Note: Responses have been weighted to produce a stratified sample.

Source: JLARC survey of the Department Environmental Quality employees, September 1996.

DEQ Employees Continue to Express Concern About Possible Retaliation

A significant percentage of the respondents to the 1996 JLARC survey of employees still expressed concern about retaliation for making a decision consistent with

law and regulation but which upset a member of the regulated community. Table 20 displays responses to this item.

As Table 20 reflects, DEQ employees were evenly split on whether they would face retaliation for making a decision consistent with law or regulation but which prompted a complaint from members of the regulated community. Forty-eight percent did not think their job would be at risk, while 46 percent thought their job would be at risk to some or a great extent. As was noted in JLARC's interim report on DEQ, this fear of retaliation hampers DEQ's ability to empower employees to make decisions at the lowest possible level. Combined with a low level of trust in agency management and employee doubts about top leadership's commitment to environmental protection, survey responses on retaliation suggest that DEQ employees view the agency's management as undependable in their support of the mission of the agency.

Table 20

Results of Survey Responses on Fear of Retaliation

Question: Assume you are making a decision or recommendation that is consistent with existing law or regulation, but which raises concern among one or more members of the regulated community. To what extent do you think your job could be at risk?

Year	I think my job would not be at risk %	My job could be at risk to some extent %	My job could be at risk to a very great extent %	Number of Repondents
1996	48	40	6	233
1995	43	41	16	77

Note: Percentages may not add to 100 due to rounding; responses were weighted to produce a stratified sample.

Source: JLARC survey of DEQ employees, September 1996 and September 1995.

DEQ NEEDS TO APPROPRIATELY DEFINE THE ROLE OF CENTRAL OFFICE STAFF

One concern noted during JLARC staff's review of DEQ is a perception among central office staff that they are "second class citizens" of the agency. Another concern noted by senior regional management is the lack of a clearly defined role for central office staff. JLARC staff recommend that agency management focus on improving the morale of central office staff by more clearly defining the technical support role played by these staff members. To better accomplish this goal, DEQ should develop an enhanced, formalized training program for regional staff and should reorganize the central office staff among functional lines, to mirror the current organization of the regional offices.

The central office staff should also enhance their focus on ensuring consistency among the regional offices. DEQ should also examine the reporting relationships among top management staff, to reduce the director's unusually large span of control.

Role of DEQ Central Office Staff is Not Well Defined

One concern raised in interviews and in survey responses by both central office and regional staff is the role of central office staff within the reorganized DEQ. Central office staff have pointed to specific concerns about being disparaged by agency management, feeling targeted for negative feedback by regional staff, and having an ill-defined role. Regional staff expressed concern that they were being unnecessarily placed in opposition to central office staff.

In response to these concerns about the role of DEQ central office staff and the degree of support received by the regional offices from them, in 1996 a committee of DEQ staff developed a series of recommendations on the role of central office staff. This committee is referred to within DEQ as the Regional Office Support from Central Office (ROSCO) committee. Major recommendations of this group stated that DEQ central office staff should:

- focus on technical assistance,
- serve as an information clearinghouse,
- provide liaison with EPA,
- develop regulations and guidance documents,
- perform specialized functions (such as VDOT water protection program permits and toxics monitoring program protocols),
- enhance their role in training,
- develop audit programs for all permitting, compliance, and enforcement activities, and
- develop a standardized approach to promulgating guidance.

Finally, the ROSCO committee recommended that agency management consider reorganizing the central office along functional lines. Several of these recommendations on training and organization of DEQ central office are discussed in the next four sections.

DEQ Should Develop a More Systematic Training Program for Regional Technical Staff

Cross-training and improved training of regional staff was cited as one of the priorities of DEQ's reorganization. However, JLARC staff interviews with DEQ management and staff and survey responses from DEQ employees suggest that cross-training within the agency is now less of a priority. In addition, Chapter III of this report identifies the need for improved technical training for permit writers. Similarly, Chapter V identifies the need for improved training for regional enforcement staff.

While central office staff have conducted a number of training exercises, it appears that cross-training of regional staff, technical training for permit writers, and training for regional enforcement staff should be priorities on which the agency should focus its financial and human resources. In addition, DEQ may benefit from a more comprehensive, formalized training program coordinated by central office technical staff. Such a program might include development of standard training materials for new staff, training modules, videos, and other types of material for various technical subjects within the agency.

DEQ Needs to Institute Auditing Programs

DEQ currently lacks adequate internal auditing programs. DEQ does not have an auditing program for its regionalized functions, with the exception of VPDES and VPA water permits. In addition, DEQ has abolished its internal audit function.

DEQ Needs to Implement Programmatic Audits of Regional Operations. As noted in Chapters III and V, DEQ has an audit program for Virginia Pollution Discharge Elimination System and Virginia Pollution Abatement permits, but it does not currently have an audit program for air permits, enforcement, compliance, or the Virginia Water Protection Permit program. The air audit program has not operated for more than two years. In addition, neither the compliance nor the enforcement program have developed an auditing program. Both the ROSCO committee and DEQ's director of program support and evaluation recommended the creation of a comprehensive audit program for all permitting, compliance, and enforcement programs. DEQ management should place a priority on the creation of these programs.

As noted in the Chapter III discussion of the water permit audit program, one issue for DEQ management to consider is the extent to which regional offices will be required to act on significant audit findings in permitting, compliance, and enforcement. DEQ should develop a protocol for regional response to significant audit findings. DEQ should report this protocol, as well as the status of its audit programs and the findings from its audits, to the House Conservation and Natural Resources Committee and the Senate Agriculture, Conservation, and Natural Resources Committee prior to the 1998 General Assembly.

DEQ Does Not Have an Internal Audit Function. As part of the reorganization of DEQ, the internal audit function was eliminated. DEQ management explained that, as the agency was undergoing reviews by both JLARC and the Auditor of Public Accounts, this function was not needed. However, the legislative program evaluation performed by JLARC staff and the annual audits conducted by the Auditor of Public Accounts cannot replace the internal controls provided by a full-time internal auditor. DEQ should take steps to re-institute this function to ensure that its services are delivered in the most cost effective, efficient manner. In addition, the internal audit function could assist programmatic staff in developing effective audit programs for permitting, compliance, and enforcement programs.

Standardized Guidance Development

One concern noted by both central office and regional DEQ staff is inconsistent agency guidance practices. The water division at DEQ has traditionally produced guidance that is dated, numbered, and cross-referenced to other applicable guidance documents. On the other hand, guidance for the air and waste programs is less formalized and less well documented.

DEQ's director of program support and evaluation noted his intent to standardize guidance procedures, based on the water division model. DEQ management should place a priority on moving forward with this initiative. DEQ should consider assigning at least one water division staff member experienced in guidance preparation to the air and waste divisions to assist them in organizing their process for guidance promulgation.

Organization of Central Office Staff Along Functional Lines

The ROSCO committee suggested that DEQ consider the organization of central office staff to determine whether this organization appropriately reflected the functional alignment (permitting, compliance, remediation) of regional staff. As noted in JLARC's 1996 interim report on DEQ, organizing central office along media lines while the regional offices are organized along functional lines is inconsistent. DEQ's efforts to promote multimedia environmental solutions and cross-training among media would benefit from a functional organization where staff in similar functions from all three media worked together. As noted in the next section, reorganization of the central office staff along functional lines would also allow for the elimination of two high-level management positions.

In examining DEQ, virtually all of the central office staff could be appropriately placed in five divisions: the current divisions of administration and grants management/ intergovernmental affairs, as well as newly created divisions of permitting, compliance/ monitoring, and remediation. This new administration division would encompass the staff of the current administration division as well as the current human resources and training staffs. The grants management and intergovernmental affairs division would

remain unchanged. The new permitting division would encompass the current water, waste, and air permitting offices as well as the current division of scientific research, and the office of small business assistance in the air division. The new compliance/monitoring division would include the current office of enforcement staff, the current offices of data analysis and mobile sources, and air monitoring offices from the air division; the water quality assessment and construction assessment offices from the water division; and the compliance section of the office of technical assistance from the waste division. The remediation division would consist of the remainder of the waste office of technical assistance (except for the compliance section), the office of spill response and remediation, and the office of Superfund and federal facilities restoration.

DEQ's Top Management Reporting Relationships Should Be Reconsidered

Since June 1994, DEQ's six regional directors have reported directly to the agency head. This reporting relationship was meant to emphasize regional autonomy from central office oversight. However, the reporting relationship between the regional directors and the agency head is problematic in three respects. First, there is high turnover among agency heads as well as a lack of technical knowledge on the part of DEQ's agency heads. Second, a large number of direct reports for DEQ's agency head raises concerns about span of control. Third, there is a need for the DEQ manager charged with insuring regional consistency to have sufficient authority to exercise this responsibility.

Agency Head Turnover. Turnover among State agency heads has increased in recent years. Recent JLARC reports pointing to this phenomenon include reviews of the Department of Personnel and Training and the Department of Social Services ADAPT project. DEQ has been no exception to this general tendency. DEQ has existed for less than four years and has had three agency heads during this time.

Turnover among agency heads is potentially problematic in its own right for a State agency. Having the regional directors report to the agency head compounds the problems of agency head turnover, because senior technical officials of long tenure in their positions are reporting to a short tenure political appointee who may not have a technical background. This complicates efforts to resolve technical disagreements among DEQ regions with regard to permitting, compliance, monitoring, or enforcement activities.

Difficult Span of Control for DEQ's Agency Head. DEQ's director currently has 21 positions, including the six regional directors, reporting directly to him. These positions include:

- the deputy director,
- the director of program support and evaluation,
- the confidential assistant for policy and administration,
- the special assistant to the director,

- an administrative staff assistant,
- the director of administration,
- the director of external affairs,
- the director of intergovernmental affairs and compliance assistance,
- the director of enforcement,
- the director of scientific research,
- the director of human resources,
- two agency management lead analysts,
- a budget manager (a wage employee),
- an environmental program planner (a wage employee), and
- six regional directors.

A span of control of 21 is unusually large for an agency head, given the agency head's responsibilities for policy formulation and dealing with the agency's multiple constituencies and three citizen boards (by statute the director is the principal staff member for the State Water Control Board, State Air Pollution Control Board, and the Waste Management Board). JLARC's 1995 *Review of the Implementation of House Bill 776* examined the number of direct reports to the agency head in the 61 executive branch agencies subject to the provisions of House Bill 776. JLARC found that of these 61 agencies, only 14 agencies had more than 10 direct reports to the agency head. Of these 14 agencies, only four (including DEQ) had 15 or more direct reports to the agency head. The average number of direct reports for the 61 agencies reviewed was 8.5 (the median number of direct reports was eight).

Options for a More Appropriate Reporting Relationship for the Regional Directors and a Reduced Number of Direct Reports for the Agency Head. DEQ should consider options for reducing the agency head's span of control from 21 to a more manageable number. One option recommended by JLARC staff is to revise the reporting relationship for the agency's six regional directors to have the regional directors report to the director of program support and evaluation. Another option discussed in the next section is to reduce the number of top management staff in the agency, thereby reducing the director's number of direct reports. DEQ should consider pursuing both of these options.

Recommendation (42). **DEQ should more clearly define the role of central office technical staff to focus on technical training of regional staff, providing standardized guidance, regulation development, and ensuring consistency in the regional offices.**

Recommendation (43). **DEQ should reestablish the internal audit function within the agency.**

Recommendation (44). **DEQ should reorganize the agency's central office along functional lines to include divisions of administration, intergovernmental affairs and grants management, permitting, compliance and monitoring, and remediation.**

Recommendation (45). **DEQ should revise the reporting relationships for the agency's regional directors so that the regional directors report to the director of program support and evaluation rather than to the agency head.**

DEQ APPEARS TO HAVE TOO MANY TOP MANAGEMENT STAFF

One concern raised in JLARC staff's 1996 interim report on DEQ is that the agency may have some redundant management positions. In particular, two high-level management positions were identified as duplicative, because they supervised only one other position. The Governor's Commission on Government Reform recommended an average span of control in State government of no less than eight, and it pointed to managers supervising four or fewer employees as particularly problematic from an efficiency standpoint. Since the interim report was completed, DEQ has added several additional management positions in its central office. These include: a deputy director appointed pursuant to House Bill 2194, a confidential assistant to the director also appointed pursuant to House Bill 2194, a special assistant to the director, and a contract management consultant.

In addition, the agency has a substantial number of positions dedicated to top management support, policy, public affairs, and legislative liaison activities. Some of these positions appear to be redundant and may be beneficially reallocated to the agency's core responsibilities such as compliance and enforcement in the regional offices. JLARC staff estimate that cost savings of approximately $480,000 could be achieved by eliminating surplus top management positions.

Ironically, some of the unnecessary positions identified by JLARC staff in this review replicate positions eliminated by DEQ management in the 1995 reorganization. The April 1995 reorganization plan submitted to the General Assembly indicated that policy, public affairs, and human resources staff were being significantly reduced as a result of eliminating unneeded duplication and layers of management. However, all three of these functions have added staff since the April 1995 reorganization. In fact, the public affairs (now called external affairs) staff is now the same size as before the reorganization (five staff members). Table 21 reflects staffing for these functions before the reorganization, after the reorganization, and presently.

DEQ Has Too Many Senior Policy and Assistant to the Director Positions

One concern raised in JLARC's 1996 interim report on DEQ is that the agency has too many senior policy positions, including two positions that had been created in 1995 (Figure 11). DEQ still has all of the policy positions shown in the JLARC interim report, although the duties for these positions have been reallocated to create a flatter appearance organizationally. The former director of policy and planning is now director of public affairs, supervising three staff. The former director of policy and legislation is

Table 21

Public Affairs, Policy, and Human Resources Staffing* at DEQ

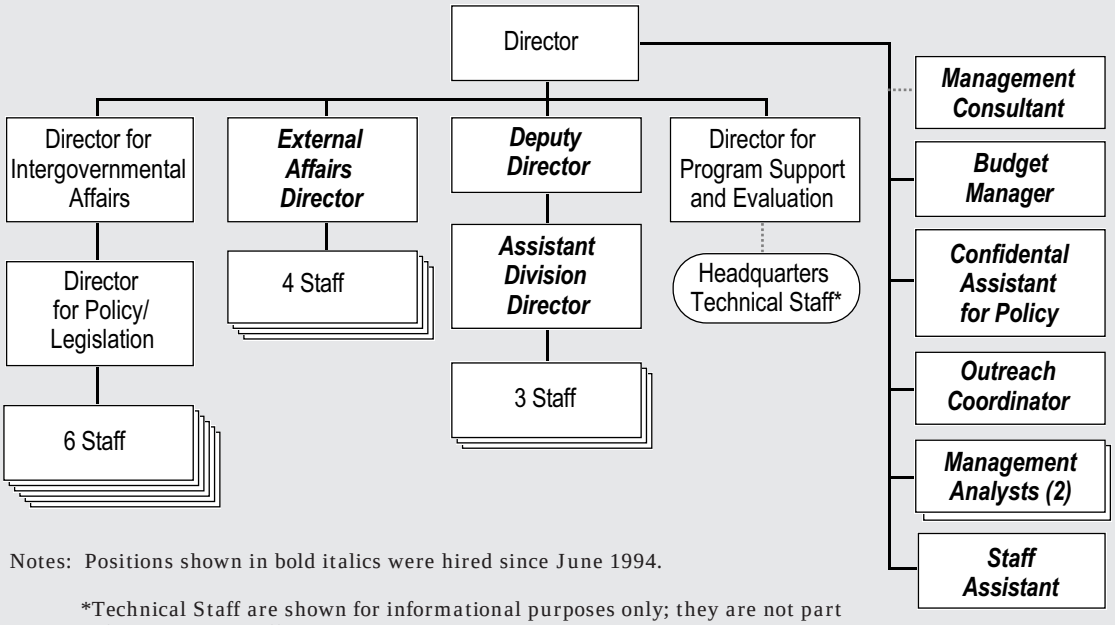
Function	Staffing Prior to April 1995 Reorganization	Staffing in April 1995	Current Staffing
Public Affairs/External	5	2	5
Policy	15	7	12
Human Resources	18	12	16
Total	38	21	33

*Includes only full-time, classified positions and excludes wage employees.

Source: JLARC analysis of DEQ organization charts dated 9/1/96 and 5/1/95 as well as DEQ reorganization plan submitted to the General Assembly, April 1995.

Figure 11

DEQ Director's Office



Notes: Positions shown in bold italics were hired since June 1994.

*Technical Staff are shown for informational purposes only; they are not part of the Director's office.

Source: JLARC graphic based on DEQ organization chart.

now supervising the Superfund Amendments and Reauthorization Act Title III staff and Pollution Prevention staff (a total of six staff); in addition this staff member is coordinating the agency's current strategic planning process. The former assistant director of policy and legislation now supervises three staff in the new policy and legislation unit. In addition, DEQ has added a confidential assistant to the director for policy position and a deputy director position, who now oversees policy and legislation. Finally, DEQ is considering adding an assistant to the deputy director position.

The addition of the deputy director position gives DEQ the opportunity to achieve staffing efficiencies in top management by eliminating two positions: the director of external affairs and the assistant division director for policy and legislation (the senior staff member within that office). The elimination of these two positions would leave six positions reporting to the deputy director, rather than the current one position.

Further, the role of the two agency lead management analysts in the director's office remains unclear. One of these positions is currently vacant, after the incumbent was promoted to be training manager (the training manager position was recreated in 1996 after the previous incumbent was laid off and the position eliminated as duplicative in the 1995 reorganization). The other position appears to focus on safety issues and space planning and divides his time between the Tidewater Regional Office and central office (although he is considered a central office employee, his home is in Virginia Beach, so he works from the Tidewater Office two days a week). The time needed for space planning should ease, due to the completed relocation of all of the regional offices and the collocation of all of central office staff. At a minimum, DEQ should abolish the vacant agency lead management analyst position. DEQ should also consider eliminating the currently filled lead management analyst position.

Finally, there are also two wage employees in the director's office whose functions appear to be duplicative of other positions. The budget manager position appears to have concentrated on space planning. As noted above, this is less of a priority now that DEQ's office moves are substantially complete. The newly hired assistant to the director (outreach coordinator) is responsible for contacts with environmental groups (though none have yet been made), research, and staff assistance to the director during travel. These responsibilities potentially overlap with other staff and do not appear to be essential when compared to other resource needs of the agency such as enforcement and compliance staff (to be discussed below). It is recommended that the outreach coordinator position be eliminated.

Reorganization of DEQ Central Office Along Functional Lines Could Allow Elimination of At Least Three Top Management Positions

A previous recommendation in this report suggests realigning DEQ central office along functional lines into divisions of administration, permitting and environmental planning, compliance and monitoring, and remediation. The suggested configuration of the central office would allow for the elimination of at least two high level positions: the director of human resources and the director of enforcement.

Elimination of the Director of Enforcement Position. Under the suggested organizational configuration, DEQ's central office enforcement staff would report to the director of compliance and monitoring. The need for a separate director of enforcement would be eliminated. Moreover, the combination of enforcement and compliance staff in one division would mirror the organization of the agency's regional offices and would allow for greater staff synergy in achieving compliance assistance and proactive enforcement.

Elimination of the Director of Human Resources Position. Under the proposed organizational configuration for DEQ central office, the director of human resources position could be eliminated. At present, the director of human resources supervises only three positions: a secretary, the training manager and a human resources manager. The proposed JLARC organizational configuration would place the human resources and training functions under the agency's director of administration. This would allow the director of human resources position to be eliminated and would further streamline the agency's top management.

Substantial Cost Savings Could Be Achieved by Eliminating Positions Noted Above and by Reviewing Other Expenditures

JLARC staff identified approximately $480,000 in potential cost savings from the above recommendations on eliminating excess top management positions at DEQ. These savings are summarized in Table 22. In addition, two other expenditures should be reviewed by DEQ. These include a satellite television service and management consulting services.

Satellite Television Service Could be Eliminated. In the fall of 1996, DEQ acquired satellite television service for four of its top managers: the director, deputy director, director of external affairs, and assistant division director for policy and legislation. DEQ management has said that this service is intended to allow DEQ to track federal legislation using CSPAN, CNN, and other cable news and public affairs channels. However, in interviews with JLARC staff, the assistant division director for policy and legislation and the director of external affairs stated that their responsibilities for tracking federal legislation are limited, as these duties are handled by the staff of the Virginia Liaison Office.

The satellite television service cost $500 to be installed and now costs $80 a month. While the total cost of the service is a small percentage of DEQ's appropriation, this service appears to be a questionable expenditure of public funds. DEQ management should reconsider its acquisition of this satellite television service and cancel the relevant contract as soon as possible.

Management Consulting Services Should be Reviewed Prior to Being Renewed. During the past two years, DEQ has awarded four contracts totaling more than $200,000 for management consulting services to an accountant. The first two of these contracts were awarded as sole source contracts in the amount of approximately

Table 22

Potential Cost Savings Identified by JLARC Staff

Position Title	Pay Grade
Director of Enforcement	Grade 18
External Affairs Director	Grade 17
Assistant Division Director, Policy and Legislation	Grade 16
Director of Human Resources	Grade 16
Lead Management Analyst	Grade 13
Lead Management Analyst	Grade 13
Budget Manager	Wage
Environmental Program Planner	Wage
Total Savings	$487,410

*Wage employees are assumed to work 1,500 hours in a given year.

**Assumes employee benefits cost of 25 percent of base salary for classified employees and 7.65 percent for wage employees.

Source: JLARC analysis, DEQ salary information provided 7/9/95 adjusted for pay raises granted State employees as of 12/1/95 and 12/1/96.

$5,000 each. In justifying the need to award the first of these contracts as a sole source contract, the DEQ director wrote the following on November 14, 1994:

> This specific service can only be offered by an organization or individual familiar with DEQ's current programs and structure as well as the ideology and tenants [sic] of the Governor's Office and the Secretary of Natural Resources.

In reviewing state procurement guidance, ideological compatibility does not appear to be an appropriate criterion for awarding a sole source contract. A 1995 Division of Purchases and Supplies (DPS) report also raised concerns about the second DEQ sole source contract with this consultant, noting that the contract did not include any deliverables and appeared to duplicate work the individual had been paid to do on the first sole source contract.

The deliverables for a subsequent, larger contract of $98,400 consisted of monthly one or two page memos to the agency head describing accomplishments. In reviewing these memos, JLARC staff noted that many of the accomplishments noted by the consultant duplicate accomplishments claimed by DEQ management staff in justifying their own positions: development of the competition survey, space planning, and subletting of the Innsbrook office facility. DEQ's latest contract with this consultant was finalized in May 1996 and is for more than $100,000 for 12 months, with a renewal option.

DEQ awarded the contract using competitive negotiation to this consultant after the consultant was determined best qualified by a panel consisting only of the DEQ deputy director.

Recommendation (46). **DEQ should reduce its top management staff by eliminating the following positions: director of enforcement, director of external affairs, assistant division director for policy and legislation, director of human resources, two agency lead management analyst positions in the director's office, and two wage positions in the director's office: budget manager and outreach coordinator.**

Recommendation (47). **DEQ should move the staff of the human resources division to the administration division. The human resources manager and training manager should report to the director of administration.**

Recommendation (48). **DEQ should place the staff of the office of enforcement under the newly created compliance division recommended previously.**

Recommendation (49). **DEQ should discontinue its satellite television service.**

Recommendation (50). **DEQ should carefully scrutinize deliverables for any management consulting services prior to renewing contracts. DEQ should also consider readvertising for such services, rather than renewing existing contracts.**

RESOURCE PLANNING

JLARC staff analysis suggests that DEQ resource planning needs improvement. As noted above, DEQ appears to have a surplus of top management staff. At the same time, the DEQ regional offices appear to have significant staffing needs in the areas of compliance, monitoring, and computer support. DEQ should consider reallocating the cost savings from reducing management staff to providing needed additional staffing in the regional offices for inspectors, enforcement staff, and computer resource support.

Regional Resource Needs

JLARC staff interviews with regional directors and other regional staff, as well as JLARC analysis of DEQ workload trends, suggests that DEQ regions have two significant resource needs. These needs are additional inspector positions and a computer resources position for each regional office. Addressing these resource needs will help improve the efficiency and effectiveness of DEQ's regional operations.

DEQ Needs More Inspectors. As noted in Chapter IV, DEQ inspection totals have declined significantly, largely as a result of staff shortages. According to interviews with DEQ regional directors, agency management places a priority on approving permit writer positions, and is less inclined to approve regional inspection positions. While permit processing is appropriately a priority of agency management, an effective, adequately staffed inspection program should be an equal priority, because a permit is meaningless unless it is complied with. As noted in Chapter V, DEQ management intends to emphasize compliance assistance, which adds to the resource demands for inspection staff.

DEQ management should place a priority on adding additional inspector positions, as well as to filling any inspector vacancies that occur. One complicating factor in filling inspector vacancies is the pay grade structure within DEQ, in which inspectors are compensated at a significantly lower rate than permit writers. DEQ inspectors are currently grades 9 and 11, while permit writers are mostly grades 12 and 13. The difference in pay at the top of the pay scale for the two occupations is approximately $10,000. Over time, this has led to the permit staff recruiting from the inspector staff, as experienced inspectors apply for permit writer positions in order to earn more pay. DEQ requested that the Department of Personnel and Training (DPT) re-grade the inspector positions, but the request was not approved due to concerns expressed by other agencies that use the inspector series.

DEQ should pursue creation of an agency-specific class with DPT, with a pay grade for inspectors either equivalent to permit writers, or, at a minimum, with a top grade of 12. DEQ should also consider filling entry level inspector positions at the grade 11 level in order to attract higher quality applicants. Upgrading the pay for inspector positions and hiring additional inspectors would signal that the agency values compliance as much as it does permit processing. The result would be an enhanced compliance program.

DEQ Needs Additional Enforcement Staff. Chapter V discusses problems identified by JLARC staff in DEQ's enforcement program. One concern is that DEQ lacks adequate regional enforcement staff. Two regional directors noted that the lack of water enforcement staff creates significant bottlenecks in their regions, preventing the regional staff from expeditiously pursuing water enforcement cases. As Chapter V notes, staffing concerns regarding the compliance auditor position have also retarded water enforcement in two of DEQ's regional offices.

A previous recommendation suggests eliminating the central office director of enforcement position as redundant. These savings should be reallocated towards hiring more front-line enforcement staff in the regional offices.

DEQ Should Consider Placing a Computer Resources Position in Each Regional Office. In recent years the day-to-day work of DEQ's regional offices has become heavily reliant on networked personal computers. At the same time, DEQ's central Office of Information Services (OIS) has experienced a reduction in authorized staff as well as significant employee turnover. The result of these staff losses, as well as

the workload increase caused by DEQ's office moves, has been a perceived problem with computer support in the regional offices.

While DEQ regional management staff acknowledge the helpfulness of the central office OIS staff, they note that an on-site computer resources position would assist regional staff in training, provide for rapid resolution of routine problems, and relieve central office staff from the need to travel to distant regional offices to resolve routine problems. Creation of a computer resources position in the regional offices would also free up certain computer literate inspector and permit writer staff who currently are performing ad hoc computer resources duties.

Central and Regional Office Space Planning

DEQ's space planning appears to be shortsighted. Requests for Proposals for space were canceled for four of DEQ's regional offices in 1995, in order to reduce the space requirements. The result of this action was approximately a one-year delay in colocating DEQ regional offices. While some short-term cost savings have been accomplished, DEQ appears to have planned insufficiently for regional space needs. Several DEQ regional directors noted that they will not have room for expected additional staff in their newly opened offices, a problematic situation given the ten-year lease terms on DEQ's offices. In particular, regional directors expressed concern about having adequate space for Title V staff. The need for these staff has been apparent since the adoption of the federal Clean Air Act amendments of 1990.

Moreover, DEQ has been steadily reducing the amount of space allocated to central office staff. Many DEQ central office staff have moved three times since the creation of the agency in 1993. Constant relocation of agency staff potentially disrupts the work flow of the agency and potentially harms agency morale. One motive behind frequent moves of central office staff appears to be to prevent expansion by subsequent administrations. An internal DEQ memo, prepared by the wage budget manager and lead management analyst in the director's office, notes that one purpose of reducing the amount of space leased by DEQ for central office staff was to prevent the possibility of expansion of the agency by later administrations. The memo stated that keeping all ten floors in the central office building at 629 East Main Street would "be the last choice taken "because of the lack of savings and the opportunity to expand by the Department after this administration."

Seeking to limit agency expansion by subsequent administrations does not appear to be an appropriate consideration to take in space planning. DEQ should ensure that its space planning is based on the agency's current and future needs, not a desire to impact the policy of later administrations.

Recommendation (51). **DEQ should consider reallocating the savings realized from eliminating unnecessary and duplicative central office positions to meeting regional resource needs. DEQ should place a priority on hiring additional inspectors and enforcement staff for its regional offices.**

Recommendation (52). **DEQ should consider creating an agency-specific class for environmental inspectors to reduce the gap in pay between permit writers and inspectors within DEQ.**

Recommendation (53). **DEQ should consider allocating a computer resources position to each of the regional offices.**

Recommendation (54). **DEQ's space planning should consider the current and future needs of the agency for space. The department should not view space planning as a means to influence the policy of subsequent administrations.**

STRATEGIC PLANNING

DEQ has recently engaged in a strategic planning process. The process included significant employee participation and culminated in a strategic planning retreat during October 1996 where the agency's senior managers developed a draft strategic plan. This plan is to be finalized in mid-December 1996.

While it would have been optimal for DEQ to have engaged in strategic planning prior to undertaking major reorganization of the agency, the strategic planning process followed by DEQ has been generally inclusive of employee feedback and appears to have been thoughtful. One consequence of the strategic planning process was a draft agency mission statement that emphasizes the agency's statutory mission, rather than economic development. This draft mission statement is:

> The mission of the Department of Environmental Quality is to protect the environment of Virginia in order to promote the health and well being of the Commonwealth's citizens.

In the strategic plan, DEQ management's vision of the agency's role in economic development is addressed in a vision statement which reads in part:

> In order to enhance the quality of life and support sustainable economic development for all the citizens of Virginia, the Department of Environmental Quality strives to operate an efficient, results oriented service delivery system.....

DEQ would be prudent to adopt the draft mission statement as it focuses more closely on the agency's statutory and constitutional mission. However, the agency should also revise its vision statement to emphasize the agency's statutory mission of environmental protection, rather than focusing only on DEQ as a service delivery system promoting economic development. Finally, the strategic planning process offers a number of useful ideas for agency management to attend to. However, with regard to one

issue, concern has arisen that the agency's management may be revisiting decisions made during the strategic planning process.

At the October 1996 strategic planning meeting it was decided that DEQ's waste permitting would remain centralized. However, in November 1996 a task force was convened to study regionalizing waste permitting. The task force consisted of the deputy director, director of human resources, confidential assistant to the director for policy and administration, a regional director, and a regional compliance manager. No central office waste division staff were included in the task force.

Strategic planning is a potentially valuable process and DEQ appears to have used a sound approach in developing its draft strategic plan. However, strategic planning is only useful if the agency's management adheres to the directions identified in the strategic planning process. Revisiting matters considered settled by the strategic planning process (as well as by a number of previous planning exercises) raises concern among agency employees about the agency's commitment to implementing its strategic plan.

Recommendation (55). **DEQ should adopt its draft mission statement, emphasizing the agency's statutory mandate. DEQ should revise its vision statement to address the agency's role in protecting the environment.**

VII. DEQ Performance and Virginia's Air and Water Quality Challenges

DEQ's performance is an important determinant, but by no means the only determinant, of environmental quality in the Commonwealth. This chapter examines air and water quality trends long-term as well as since the creation of DEQ in 1993. Since the creation of DEQ in 1993, air quality has continued to improve, part of a long-term trend set in motion by the adoption of the Clean Air Act in 1972. Two of the Commonwealth's three remaining nonattainment areas for National Ambient Air Quality Standards (NAAQS) are now eligible for redesignation. However, to maintain the favorable trends in air quality, DEQ needs to plan for meeting proposed new federal standards for ozone and particulate matter as well as focusing on implementing the Title V operating permit program.

On the other hand, neither DEQ's own analysis in the 303(d) list nor JLARC staff analysis of DEQ monitoring data (Appendix E) support the assertion that the State's water quality has improved since the creation of DEQ in 1993. There has probably been a long-term improvement in the State's surface water quality since the passage of the federal Clean Water Act in 1972. A combined State, federal, and local investment of approximately $2.1 billion dollars during this time in sewage treatment plant upgrades has helped account for much of this improvement. However, DEQ's lack of leadership in addressing important water quality challenges places the State's future water quality at risk.

AIR QUALITY

Overall, most air quality indicators examined by JLARC staff show long-term trends of improvement (from 1981 to 1992). These trends can be attributed to several factors, including policy choices (for example, the phase-out of leaded gasoline and the mandating of reformulated gasoline in certain urban areas by the federal government), technological improvements, federal regulation pursuant to the Clean Air Act, as well as the State's enforcement of the State Air Pollution Control Law and applicable regulations.

Since the creation of DEQ, the trend towards improving air quality has continued.

The State's current air quality situation can be summarized as follows:

- In the years up to and including 1992, concentrations of air pollutants generally tended to be decreasing over time (indicating improvement) in the State's largest metropolitan areas.

- Since 1993, when DEQ was created, concentrations of air pollutants have generally tended to follow the long-term trends.

- For five out of six criteria air pollutants as defined by EPA, concentrations are below the National Ambient Air Quality Standards (meaning that there is no problem with air quality standards being violated). The one exception is ozone.

- Ozone levels appeared to remain problematic in recent years. Long-term trend lines tended more often to be flat or to have a very gradual downward slope. They also were often very close to the National Ambient Air Quality Standard. In recent years, ozone concentrations have tended to bounce around the trend lines, meaning they were also bouncing around the National Ambient Air Quality Standard — sometimes below it, and sometimes above it (and thereby violating it).

It appears that DEQ's water program could benefit from adopting some of the approaches used by the air program. These include:

- generally conducting unannounced inspections;

- continued use of formal enforcement tools, including penalties;

- a policy of recovering 100 percent of the economic benefit of noncompliance; and

- notably vigorous inspection techniques used in the mobile sources program.

Appendix E lists the supporting technical appendixes for this study, including JLARC staff's analysis of air quality trends. At present, two of Virginia's three remaining nonattainment areas are eligible for redesignation (Hampton Roads and Richmond). Most of Northern Virginia remains a nonattainment area for ozone. However, EPA has recently proposed a revised federal ozone standard. If this proposed rule is adopted, then based on past performance, both Richmond and Hampton Roads will once again be in danger of nonattainment status for ozone under the revised National Ambient Air Quality Standard.

DEQ needs to continue its long-term air quality planning to determine the means to maintain current air quality gains, meet the proposed new federal standard, and obtain further improvement in air quality. At present, the State's approach to air quality planning has focused on stopgap measures to reduce the number of ozone exceedances. These measures include:

- agreements with local industries to reduce production on ozone alert days,
- closing State gasoline pumps in nonattainment areas on ozone alert days, and
- encouraging citizens to carpool on ozone alert days.

Each of these approaches, while potentially helpful for avoiding peak exceedances, does little to contribute to a long-term improvement in air quality. In the short-term, with cooperative weather, they can be sufficient to meet certain air quality levels. DEQ's challenge will be to find the means of obtaining further improvement in air quality on a long-term, systematic basis as the State continues to grow. The State will be aided by federal initiatives, such as reformulated gasoline and emission requirements for new automobiles. The State implementation plan identifies other, longer-term measures if the State's air quality does not continue to meet standards. These measures include a mobile inspection and maintenance program for Richmond and Hampton Roads (modeled on the existing program in Northern Virginia) as well as enhanced emission requirements for industry. However, it is not clear to what extent the State is prepared to implement these programs, should they become necessary.

DEQ's difficulty in implementing the Title V program raises concern about the agency's ability to adapt to changing regulatory requirements. As noted in Chapter III, Virginia is the only State who's Title V program submittal has been disapproved. The State's continuing resistance to the "standing" component of the program as well as continuing delays in hiring Title V staff raise concern about the State's ability to implement other air quality programs that may be needed in the future.

WATER QUALITY

Water quality may have improved steadily from 1972 to the early 1990's, as a result of the combined federal, State, and local investment of more than $2.1 billion in sewage treatment plant upgrades under the auspices of the Clean Water Act. By the time DEQ was created by the General Assembly in 1993, wastewater treatment systems throughout the State had been upgraded to a level of secondary treatment and only a small percentage of the Commonwealth's waters were listed as impaired in the 1994 303(d) list (although this list is not exhaustive in identifying impaired waterways).

The significant capital investment in wastewater treatment plant upgrades meant that DEQ's challenges in protecting water quality shifted from requiring upgrades to secondary treatment under the Clean Water Act to the following:

- providing leadership on point source nutrient reductions to help meet the State's commitment to reduce these nutrients by 40 percent, and promote the health of Virginia's tributaries and the Chesapeake Bay;

- identifying the impaired waterways in the Commonwealth;

- dealing with long-term cases of noncompliance and enforcing the water pollution laws in a certain, timely, consistent manner to encourage continued compliance by the regulated community;

- implementing an effective groundwater regulatory program in the State's groundwater management areas; and

- conducting water supply planning to ensure an adequate supply of drinking water as the Commonwealth continues to experience rapid population growth.

The State continues to experience difficulty in addressing long-term noncompliance and does not have a consistent, credible enforcement program, even in cases where point sources of pollution are causing impairment of waterways. DEQ continues to grapple with the role of metals and other toxics in water quality, in the face of significant opposition from the regulated community. Despite growth in biological monitoring programs over the past decade, DEQ has yet to expand its biological monitoring program sufficiently, and DEQ has yet to establish a credible groundwater regulatory program. Finally, DEQ has neglected water supply planning, leaving a critical gap in the Commonwealth's environmental programs. DEQ's lack of leadership in these areas puts the State's future water quality at risk.

Data Do Not Support the Assertion that Water Quality Has Improved Since the Creation of DEQ

DEQ data and other water quality data do not support the contention that water quality has been improving statewide since the creation of DEQ in 1993. JLARC staff examined DEQ monitoring data as reported in the 305(b) report, monitoring data from the U.S. Geological Survey (USGS), DEQ's 303(d) impaired waterways list, as well as monitoring data and modeling for the Chesapeake Bay Program. Both DEQ and USGS data show mixed results for water quality in recent years, with a trend towards an increase in fecal coliform violations.

Chapter IV of this report identifies several shortcomings in DEQ's 303(d) list, which is frequently cited by DEQ management as evidence of improving water quality. These shortcomings include: inconsistency in monitoring among regional offices and lack of central office oversight of regional monitoring, failure to monitor certain streams in Northern Virginia believed by DEQ staff to be impaired, lack of metals data, and an over-reliance on chemical monitoring to the detriment of biological monitoring. In addition to the shortcomings noted by JLARC staff regarding the 303(d) list, the percentage of impaired waters identified in the 1996 list has actually increased to approximately five percent from about three percent in the 1994 303(d) list. Therefore, the increase in impaired waters between the 1994 and the 1996 303(d) list is inconsistent with the assertion of improved water quality.

Time-Trend Analysis of DEQ Ambient Water Quality Monitoring Data: Fecal Coliform, Dissolved Oxygen, pH. At best, the patterns over time observed statewide (shown in Table 23) can be summarized as being mixed:

- Among monitoring stations reporting sufficient data from the FY 1988 - FY 1995 period, more stations reported increases in fecal coliform bacteria

Table 23

Virginia Statewide Totals for the Number of Monitoring Stations by Indicator, FY 1988 - 1995

Indicator	Improved*	Worse**	Mixed	No Violations	Same	Total
Fecal Coliform	74 (23%)	112 (35%)	61 (19%)	48 (15%)	27 (8%)	322
Dissolved Oxygen	46 (12%)	35 (9%)	26 (7%)	270 (69%)	13 (3%)	390
pH	82 (21%)	17 (4%)	50 (13%)	224 (58%)	15 (4%)	388

*Monitoring stations with decreasing percentages of samples violating water quality standard over time.

**Monitoring stations with increasing percentages of samples violating water quality standard over time.

Source: 1990, 1992, 1994 and 1996 305(b) reports.

violations — cited by DEQ as the "leading cause" of river and stream impairment — than reported decreases.

- Samples measuring dissolved oxygen show mixed results. Among the monitoring stations with samples violating dissolved oxygen standards, slightly more stations saw improved conditions than worse conditions, while a comparable number also had a pattern of mixed results (showing both substantial improvement and worsening over the years).

- More monitoring stations reporting pH violations showed improvement than worsening of pH levels from FY 1988 to FY 1995.

Finally, it should be noted that a majority of monitoring stations reported no violations of dissolved oxygen or pH levels during the entire time period, although the low number of samples taken at many stations prevents concluding that the streams monitored by these stations are free from impairment.

These trends appear to vary, however, when examining the results by individual river basin. Exhibit 5 summarizes the patterns observed in the individual river basins. In some basins, the overall picture appears to indicate improvement on these indicators. In others, conditions overall appear to be mixed or getting worse. However, these summary data provide only partial geographic information regarding where violations of the water quality standards are occurring. These data may indicate improvement or digression in specific places, but they do not support the notion of an overall statewide improvement pattern.

Exhibit 5

Summary of Results Observed in Individual River Basins

River Basin	Fecal Coliform	Dissolved Oxygen	pH
Potomac	11% Improved 49% Worse 33% Mixed/Same 7% No Violations	0% Improved 3% Worse 10% Mixed/Same 87% No Violations	25% Improved 0% Worse 12% Mixed 63% No Violations
James	24% Improved 26% Worse 23% Mixed 27% No Violations	11% Improved 8% Worse 7% Mixed/Same 75% No Violations	19% Improved 7% Worse 22% Mixed/Same 51% No Violations
Rappahannock	20% Improved 50% Worse 10% Mixed 20% No Violations	0% Improved 22% Worse 8% Mixed/Same 70% No Violations	26% Improved 0% Worse 13% Mixed/Same 61% No Violations
York	31% Improved 46% Worse 16% Mixed/Same 7% No Violations	26% Improved 0% Worse 21% Mixed 53% No Violations	15% Improved 5% Worse 30% Mixed/Same 50% No Violations
Small Coastal Basins and Chesapeake Bay	28% Improved 12% Worse 36% Mixed 24% No Violations	31% Improved 19% Worse 17% Mixed 31% No Violations	42% Improved 2% Worse 8% Mixed 48% No Violations
Chowan	24% Improved 0% Worse 36% Mixed/Same 40% No Violations	33% Improved 19% Worse 4% Same 44% No Violations	26% Improved 15% Worse 11% Mixed/Same 48% No Violations
Roanoke	13% Improved 58% Worse 20% Mixed/Same 9% No Violations	6% Improved 8% Worse 10% Mixed/Same 76% No Violations	12% Improved 2% Worse 24% Mixed/Same 61% No Violations
New	33% Improved 33% Worse 16% Mixed/Same 18% No Violations	0% Improved 4% Worse 4% Mixed 92% No Violations	8% Improved 8% Worse 12% Mixed/Same 72% No Violations
Tennessee - Big Sandy	46% Improved 25% Worse 28% Mixed/Same 1% No Violations	8% Improved 0% Worse 12% Mixed/Same 80% No Violations	4% Improved 0% Worse 9% Mixed 87% No Violations

Source: Tables 5 through 13, JLARC Technical Appendix *Longitudinal Analysis of DEQ Monitoring Data: Rivers and Streams.*

Table 24

Virginia Statewide Totals: Number of Biological Monitoring Stations by Category, FY 1991 - 1995

Category	Number of Monitoring Stations	Percent of Monitoring Stations
Unimpaired	49	(32%)
Unchanged	50	(33%)
Improved	35	(23%)
Worse	17	(11%)
Total N	151	

Source: 1992, 1994, and 1996 305(b) reports.

Analysis of DEQ Benthic Monitoring Data. Trends over time observed among DEQ biological monitoring stations continuously operating since FY 1991 are shown in Table 24. Approximately one-third were classified as unchanged and another one-third classified as unimpaired. Twenty-three percent of the stations showed improvement in their water quality, while eleven percent showed a worsening in their water quality.

These results from the biological monitoring stations should be treated with caution for a number of reasons. One is that DEQ has been utilizing Rapid Bioassessment Protocols (on which the biological monitoring data are based) only since the fall of 1990. Another is that the biological monitoring stations are much more unevenly distributed in many of the river basins, compared to ambient water quality monitoring stations (those measuring fecal coliform, dissolved oxygen, and pH). As a result, while biological conditions may be improving or worsening in some specific locations, the data do not support any generalizations about a statewide trend. As pointed out in Chapter IV, DEQ's regional offices do not all use the same protocol in assessing the health of the biological community.

U.S. Geological Survey Water Quality Monitoring Data. The results from the USGS monitoring data over time do not support the notion that water quality in rivers and streams is showing a broad statewide trend of improvement. Results from all water quality indicators examined are generally mixed. Substantial change may be occurring in specific places, where some specific places may be getting better while others are getting worse. When taken together with the results from the time-trend analysis of DEQ monitoring station data, these findings indicate that while trends may be occurring at a relatively few specific locations, the data do not support generalizing these location-specific trends to the statewide level, the river basin level, or even the sub-basin level.

Lakes and Reservoirs. JLARC staff examined historical data regarding the trophic status of 247 lakes from FY 1987 to FY 1995. Trophic state refers, in part, to the aging process resulting in the accumulation of nutrients, increased plant growth from these nutrients, and siltation. However, trophic state is also impacted by point and non-point sources of pollution. The data do not support the contention that lakes in Virginia are becoming cleaner. The trophic status of 210 of the 247 lakes remained unchanged during this time period. Further, 125 of the 210 lakes remained eutrophic over this eight-year period. In other words, the majority of lakes in Virginia have high nutrient enrichment, which can over-stimulate the growth of algae and aquatic plants, and have remained in this state over the entire FY 1987 through FY 1995 time period.

DEQ's Water Program Is Not Meeting Major Challenges

Earlier chapters of this report have presented significant shortcomings in DEQ's water quality programs. These include weaknesses in DEQ's 303(d) list, misuse of the 303(d) list by agency management to generalize about water quality, and a weak water enforcement program.

Significant Weaknesses Exist in DEQ's 303(d) List. Chapter IV finds significant analytical weaknesses in DEQ's 303(d) *Impaired Waterways List*, which is often cited by DEQ management as an indicator of improving water quality. These weaknesses include: (1) absence of metals data, (2) lack of biological monitoring when compared to chemical monitoring, (3) the lack of monitoring in certain Northern Virginia streams believed to be impaired by DEQ staff, (4) inadequate oversight of regional monitoring programs, and (5) DEQ's uneven application of a statistical method so as to identify potential overstatement of impairment without identifying potential under-statement of impairment. Eighty-three percent of DEQ's sampling stations have too few samples to demonstrate either impairment or absence of impairment according to current DEQ protocol (Appendix D). Chapter IV also addresses this issue. Thirteen percent of DEQ's sampling stations demonstrate impairment when testing for over-estimation of pollution levels under DEQ's binomial distribution methodology. Using the same procedures but testing for under-estimation of pollution levels, three percent demonstrate freedom from impairment. It is noted that these figures reflect sampling stations, not stream miles. Sampling stations are not evenly distributed among monitored stream miles, so the 13 percent of stations demonstrating impairment translates into the five percent of stream miles impaired cited in the 1996 303(d) list.

DEQ's director of water monitoring emphasized that the 303(d) list is not meant to be a measure of water quality or a "report card" on the success of an environmental agency's water program. Rather, the 303(d) list serves to identify the agency's top priorities for addressing water quality problems. Exclusion from the 303(d) list does not necessarily imply a waterway is not impaired, only that it is not considered a high priority for DEQ to address.

Water Enforcement Program Is Weak. The traditional goal of water enforcement in Virginia has been to have a program that is timely, consistent, and

certain. Chapter V of this report demonstrates significant shortcomings on the part of DEQ's water enforcement program in achieving these goals. DEQ is erratic in its enforcement approach, does not address long-term cases of noncompliance in a timely manner, is slow to take enforcement action against local government and State agencies, and does not take strong action in cases of nonreporting or falsification. Moreover, DEQ does not recover the economic benefits of noncompliance, potentially creating an uneven playing field where entities who violate State and federal water pollution laws and regulations gain an unfair economic advantage over those entities that comply with law and regulation.

DEQ's adversarial relationship with the EPA and problematic relationship with the Office of the Attorney General, together with a policy of avoiding civil penalties, severely limit the ability of the agency to enforce the State Water Control Law and the federal Clean Water Act. JLARC staff have identified several cases in which DEQ's lax enforcement approach has contributed to environmental damage, including impairment of State waters.

DEQ Lacks Adequate Water Resource and Water Supply Planning. Section 62.1-44.40 of the *Code of Virginia* requires DEQ to "submit an annual report to the Governor and the General Assembly on or before October 1 of each year on matters relating to the state's water resources policy and the status of the state's water resources, including groundwater." Since the creation of DEQ, no such reports have been submitted. In fact, in a written response to JLARC staff's request for the most recent copy of this report, DEQ responded "the agency has not prepared a report on the Commonwealth's water resources policy in the last ten years."

DEQ currently does not conduct groundwater monitoring, with the exception of suspected contamination from solid waste sites, hazardous waste sites, or petroleum products. The absence of groundwater quality monitoring is particularly problematic, as a significant portion of the State's population obtain their drinking water from groundwater sources. Despite a clear statutory mandate to report on groundwater quality, DEQ has failed to systematically conduct groundwater monitoring. The DEQ deputy director told the State Water Commission in October 1996 that DEQ has included groundwater quality information as part of another report, however, this report was not produced when requested by JLARC staff. DEQ staff noted in their internal comments on the agency strategic plan that no such report has been produced since at least 1989.

DEQ has also not engaged in water supply planning, creating a significant gap in services in the natural resources area. A number of Virginia localities, including Virginia Beach, several Peninsula communities, and portions of the Eastern Shore have experienced problems with water supply. Despite these problems, DEQ has not been involved in water supply planning.

Moreover, DEQ has ignored the explicit statutory mandate in §62.1-44.40 to report annually on the State's water resources policy. DEQ should comply with this statutory mandate. DEQ could use the annual report as a vehicle for articulating its

solutions to the problems noted in this report with the State's water pollution control program.

Finally, DEQ needs to revisit its Water Quality Management Plans, many of which were prepared in the 1970s. Indeed, water resources planning could be beneficially incorporated into an update of the agency's Water Quality Management Plans.

Recommendation (56). **DEQ should begin complying with its statutory mandate to prepare a report on the Commonwealth's water resources policy as required in §62.1-44.40 of the *Code of Virginia*.**

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