REPORT ON THE MANAGEMENT OF MUNICIPAL SOLID WASTE IN THE COMMONWEALTH OF VIRGINIA

A HISTORICAL REVIEW

SUBMITTED TO
GOVERNOR JAMES S. GILMORE, III
FOR
THE CITIZENS OF THE COMMONWEALTH

COMMONWEALTH OF VIRGINIA
RICHMOND
NOVEMBER, 1998

November 13, 1998

The Honorable James S. Gilmore, III
Governor
Commonwealth of Virginia
Third Floor, State Capitol
Richmond, Virginia 23219

Dear Governor Gilmore:

As requested, I am forwarding to you a report detailing the state of solid waste management in Virginia, entitled, Management of Municipal Solid Waste in the Commonwealth of Virginia: A Historical Review. This report has been compiled by the Office of Policy and Legislation at the Department of Environmental Quality, with the cooperation of private citizens, environmental groups, local government representatives and industry representatives. The report provides background information on federal solid waste management law, Virginia solid waste management law and comparative information on other states.

Very truly yours,

John Paul Woodley, Jr.

John Paul Woodley, Jr.
Secretary of Natural Resources

Executive Summary

This report examines the state of solid waste management in the Commonwealth of Virginia and presents findings from a review of the historical as well as the current regulatory and public opinion perspective. This report focuses on the past and current practices as well as policy considerations with regard to the importation and disposal of solid waste in the Commonwealth. A diverse group of people representing all facets of solid waste and solid waste management were interviewed during the course of the project.

This report is the most comprehensive examination of the management of solid waste in the Commonwealth of Virginia that has been compiled to date. As the regulatory picture continues to change and more and more accurate information is gathered the findings and numbers presented in this document may be refined. This report serves as a historical point in time document for the current state of solid waste management in Virginia.

Findings are presented in sections on a historical perspective on solid waste, a background on the federal regulations, a history of Virginia's solid waste management efforts, the current state of solid waste management in Virginia, an identification of key issues, a compilation of thoughts on solid waste management collected during the interview process, and an examination of the "Commerce Clause" of the United States Constitution.

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Part I: Introduction

A. Introduction

The purpose of this paper is to outline past and current practices, as well as the ongoing public discussion of policy considerations, with regard to the importation and disposal of solid waste in the Commonwealth of Virginia. In recent months, Virginia has been identified as a potential leader in the importation of waste, which means it is vital to ensure that the Commonwealth's municipal solid waste program is adequate to meet the current and future needs of its citizens, and that the program be adapted if it is not.

To be sure, Virginia is facing a growing municipal solid waste management challenge. As Virginia's population continues to increase, more and more residential as well as commercial waste is being generated. In addition, as the nation's population grows, waste disposal solutions are taking on more of a regional wasteshed perspective, meaning that waste should remain within the region that is generated. The Northeast corridor, of which Virginia is a part, is a region that generates considerable amounts of solid waste and has some of the highest population levels in the country. For this reason, it can be assumed that solid waste will continue to increase in the foreseeable future.

Currently, Virginia is the number two importer of municipal solid waste in the nation, behind only Pennsylvania. According to the *Interstate Shipment of Municipal Solid Waste: 1998 Update*, prepared by the Congressional Research Service, Virginia imported approximately 2,800,000 tons of municipal solid waste in 1997; Pennsylvania, which ranks first, imported 6,340,891 tons in 1997. During that same period, Virginia exported approximately 100,000 tons of its own municipal solid waste to out-of-state facilities. The question for Virginia is to determine the most effective, safe policies to manage its own solid waste, and ensure that the volume of waste being disposed of in Virginia will not lead to shortages of landfill space or unchecked expansion of landfill capacity. In addressing this issue, Virginia must consider what the balance may be between the options of landfilling solid waste and incinerating it in local in-state facilities.

B. Project Description

In order to gain a perspective of the issues surrounding the management of solid waste in the Commonwealth, a diverse group of people representing all facets of solid waste and solid waste management were interviewed during the course of the project. Representatives from environmental, industrial, local government, and citizen groups were interviewed as a part of this project to determine the key issues of concern. Their views are reflected in the section entitled "Thoughts on Solid Waste Management." Some of the issues that were identified as matters to be considered in addressing solid waste management include: costs & revenues, facility siting, landfill capacity, long-term liability, regulation & inspection, technology, tourism, transportation, and groundwater contamination. The suggestions presented represent the opinions of individuals from sectors of the affected population, such as citizens, environmental groups, members of the

solid waste industry, and governmental entities. Reference materials collected during the course of the project were reviewed and pertinent information was incorporated into the document.

C. Structure of Document

This document presents information on solid waste management in the following sections: a historical perspective on solid waste; a background of the federal solid waste management program; an examination of the history of Virginia's solid waste management regulations; the current state of solid waste management in Virginia, including a summary of the State's current practices and authority for solid waste regulations; identification of key issues; a compilation of thoughts on solid waste management collected during the project; a look at Virginia as a site for the disposal of municipal solid waste; and an examination of the "Commerce Clause" of the United States Constitution.

Part II: Background

A. Historical Perspective

Since the turn of this century, technological advances have enabled the United States to develop disposable products. Cumbersome, expensive products have been replaced with convenient, inexpensive, consumer-friendly products. These more convenient disposable products have contributed, among other things, to an increase in the volume of waste disposed of in the United States. Fast-paced lifestyles in the 1990's have led to increased use of disposable convenience products such as plates, cups, utensils, beverage and food containers, diapers, razors, and even cameras and clothing. In addition, our society is greatly concerned with the safety and quality of products, resulting in a perception that products made with virgin materials are somehow more "sanitary," are of better quality and perform better than products made with recycled or "used" materials. The credibility of recycled products is on the rise, which may allow the United States to continue to realize more and more benefits from their use. Today, Americans are more cognizant of resource limitations than in the past and are beginning to incorporate recycling into their every day lifestyles.

Prior to 1970, open dumping[1] and open burning[2] were common. Since 1970, extensive improvements have been made to protect citizens against solid waste contamination. Landfills are now covered daily; are closed out with a proper cap and re-vegetated to prevent infiltration of

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[1] Placing, discharging, depositing, injecting, dumping, or spilling solid waste so as to present a threat of a release of harmful substances into the environment or present a hazard to human health. (VR 672-20-10)

[2] The combustion of solid waste without: control of combustion air to maintain adequate temperature for efficient combustion; containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and, control of the combustion products' emission. (VR 672-20-10)

rainwater; have gas vents to minimize gas accumulation; and include wells to provide long-term groundwater monitoring. Financial assurance is required of all owners and operators of facilities to cover the costs associated with the eventual closure of the site and its post-closure care. Should all precautions fail, the entity responsible for the landfill must ensure that sufficient funds will be available to effect any corrective action to remedy any problems that arise. Even so, there remains public concern that the environmental protections in place could unforeseeably fail and result in contamination of the environment surrounding a landfill. Other concerns regarding the existence of landfills include litter, truck traffic, odors, loss of economic value of surrounding land, and aesthetic damage to the landscape.

Incineration of solid waste has been looked at as an alternative to landfilling solid waste. However, there is also some concern that the combustion of solid waste may result in unwanted emissions from the incinerator stack, such as hydrochloric acid, nitrogen oxides, sulfur oxides, dioxins, furans, and vaporized metals such as lead. Incinerators are equipped with pollution control devices to address these emissions, but concern remains regarding emission levels and disposal of the ash that results from burning the solid waste.

B. Solid Waste - Defined

Solid waste, as used in this document, refers to any material with a diminished use potential due to physical or chemical modification or any material that is secondary or an unintended consequence of some other primary activity. In other words, solid waste is essentially any altered solid material that is a byproduct of some activity, such as the empty box and container that are left after a frozen meal is consumed. In addition to disposal or abandonment, this concept incorporates both products that have lost their primary value (off- specification or contaminated batches) and by-products of a process that may be ultimately recycled or discarded depending on the economics. The boundary that determines when it is best to recycle and when it is best to dispose is usually vague and changes frequently depending on the economic cost/benefit of each approach. Hence, waste management includes: waste that is disposed of, such as trash that is picked up on the curb; waste that is abandoned, usually considered litter; and waste that is recycled, such as tin cans or glass bottles.

In 1976 the United States Congress passed the Resource Conservation and Recovery Act (RCRA) which defined the term “solid waste” for purposes of the Act as:

> *“... any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities... " Title 10, § 1004(27) of RCRA.*

The same definition of “solid waste” is found in § 10.1-1400 of the Virginia Waste Management Act.

The term solid waste**,** as defined above, goes beyond the confines of the common use of the term "solid." The definition includes not only things commonly considered to be garbage and refuse, such as household trash, but also other forms of waste, such as liquids, semisolids and contained gases. This broad definition stemmed from the intent of Congress to craft environmental legislation that would regulate all wastes left unregulated by the Clean Air Act (CAA) and the Clean Water Act (CWA). This broader language gave Congress much more latitude in regulating all types of waste.

In addition, for purposes of this document, the term "municipal solid waste landfill" means a publicly- or privately-owned facility that accepts household solid waste for disposal, as opposed to incineration. Such facilities may also accept other types of waste, including, commercial solid waste, nonhazardous sludge, construction and demolition waste, and industrial waste.

C. The Federal Program

The 1970's represented a time of increasing awareness of the importance of our natural resources. The federal government began developing legislation to provide guidance for states on how to structure programs that would adequately address emerging environmental issues. One such piece of legislation was the Resource Conservation and Recovery Act of 1976 (RCRA). It originated in the 94th Congress as the result of interest expressed by municipalities and environmental, public interest, and industry groups in addressing issues such as lack of landfill capacity and its impact on municipal government, environmental protection, and industrial expansion. These issues were not viewed as an immediate threat to public health and safety, but rather as a future threat to the economic health of the nation.

The House Subcommittee on Transportation and Commerce examined issues surrounding solid waste disposal in conjunction with consideration of the Resource Conservation and Recovery Act, and found that approximately three billion tons of material were discarded annually in the United States. As adopted, the premise of the Resource Conservation and Recovery Act was that the need to manage solid waste is a result of our industrial society. According to the Subcommittee's report that accompanied the legislation, the true costs of disposal should be borne by those benefiting from the products that generate the waste. It was thought that this cost allocation would lead to the development of more advanced technologies to reduce and dispose of waste.[3]

The Resource Conservation and Recovery Act authorized the Environmental Protection Agency (EPA) to establish a comprehensive federal regulatory program to control the handling and disposal of wastes. The primary goals of the Resource Conservation and Recovery Act are to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure

[3] H.R. Report No. 94-1491, 94th Cong., 2nd Sess. (1976)

that waste is managed in an environmentally sound manner. The statute also called for improving solid waste management by states and localities and mandated the phasing out of open dumps. Final passage of RCRA was prompted by concern that disposal of increasing amounts of solid waste had created serious problems for local communities; that disposal of solid and hazardous wastes without careful planning and management could be dangerous to public health and the environment; and, that open dumping of wastes was particularly harmful because it contaminates drinking water supplies and pollutes air and the land. Unlike the federal Clean Air Act and the Clean Water Act, which allow certain permitted minimal releases of pollutants to the environment while attempting to minimize pollutant generation, RCRA was structured to eliminate all releases of any pollutants from solid waste disposal facilities to the environment, but did not address solid waste generation.

The Resource Conservation and Recovery Act regulates the management of solid waste[4] (e.g., garbage) and hazardous waste[5]. The RCRA municipal solid waste program regulates owners and operators of municipal solid waste landfills. The regulations stipulate minimum criteria that each landfill must meet in order to continue operating. The RCRA hazardous waste program regulates commercial businesses as well as federal, state and local government facilities that generate, transport, treat, store, or dispose of hazardous waste. Each of these entities is regulated to ensure proper management of hazardous waste from the moment it is generated until its ultimate disposal or destruction (cradle-to-grave).

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[4]RCRA Solid Waste: According to the EPA regulations, solid waste means any garbage, or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities.

[5]RCRA Hazardous Waste: Wastes that exhibit certain characteristics may be regulated by RCRA. A waste may be considered hazardous if it is ignitable (i.e., burns readily), corrosive, or reactive (e.g., explosive). Waste may also be considered hazardous if it contains certain amounts of toxic chemicals. In addition to these characteristic wastes, EPA has also developed a list of over 500 specific hazardous wastes. Hazardous wastes takes many physical forms and may be solid, semi-solid, or even liquid.

The original substantive provisions of RCRA can be divided into three main categories: Subtitle C, which addresses federal or state regulation of hazardous wastes; Subtitle D, which addresses state control, pursuant to federal guidelines, of non-hazardous solid wastes; and Subtitle E, which addresses federal programs in the areas of research and development, also known as "R & D," technical and financial assistance for state and local governments and disposal facilities, and procurement to reduce solid wastes. At the federal level, funding and administrative resources were concentrated on Subtitle C, which governed hazardous waste disposal, more so than subtitles D and E.

Subtitle D of the Resource Conservation and Recovery Act directed the Environmental Protection Agency (EPA) to develop and publish guidelines for solid waste management, including minimum criteria for states to use in developing solid waste management plans and guidelines for states to abide by in classifying open dumps. States are responsible for administering and enforcing solid waste programs developed in accordance with EPA regulations. The costs associated with these new EPA regulations have made it too expensive for smaller landfills to remain in operation. Therefore, more trash is being moved toward the larger landfill facilities that have the ability to implement the requirements. Regulations for the development of state "Solid Waste Management Plans"[6] were published almost three years after enactment of the Resource Conservation and Recovery Act. Therefore, much of the initial state effort was guided by incomplete and sometimes contradictory draft instructions from EPA. Federal assistance to the states was minimal in the beginning years of RCRA implementation, and was totally phased out with the promulgation of the hazardous waste management regulations in 1980. In 1984, Congress passed amendments to RCRA, known as the Hazardous and Solid Waste Amendments (HSWA), which required EPA to be more active in the development and implementation of municipal solid waste management plans. On October 8, 1991, EPA published the municipal solid waste landfill criteria. These criteria required states to issue permits or documents of prior approval for municipal solid waste facilities.

1. Solid Waste Management Plans

The federal solid waste management plan program under Subtitle D of RCRA was voluntary. Those states that undertook development and implementation of EPA-approved plans were eligible for federal technical and financial assistance. Each plan was required to outline steps the state wanted to take to ensure that the solid waste within its borders was managed in an environmentally sound manner, and resources were conserved and recovered where possible. Key components of these plans involved (1) using the technical criteria provided by the EPA to identify inappropriately managed facilities, termed "open dumps", which had to be closed or upgraded, and (2) developing a regulatory scheme that would ensure facilities operate properly.

Congress recognized that there may not be any available alternatives for certain

[6] Part 256, Title 40, Code of Federal Regulations, July 31, 1979.

facilities that are classified as open dumps. Therefore, the Resource Conservation and Recovery Act (RCRA) provided that state plans could include a schedule for phasing out such disposal practices over a 5-year period, beginning with promulgation of the federal open dump criteria. Thus, state plans were designed to be vehicles to establish an extended compliance schedule for specified open dumps that could not be closed immediately.

The EPA's role with respect to state plans was limited to setting the minimum regulatory requirements that states had to follow in designing their plans, approving plans that complied with these requirements and administering a grant program for states with approved plans. Thus, the main responsibility for developing and implementing solid waste management plans rests with each state. There is no statutory provision that requires states to develop plans and no provision for implementation of a federal solid waste program in states without such a plan. In states without EPA-approved solid waste management plans, however, there is no legal provision for the phase-out of open dumps. Therefore, an open dump located in such a state is vulnerable to citizen suits because open dumps, unless they are being phased-out under a state plan, are illegal.

2. Criteria for the Classification of Facilities

Criteria for the Classification of Solid Waste Disposal Facilities and Practices, commonly called "Subtitle D Criteria", are technical standards which set out minimum requirements for environmentally acceptable facilities. Facilities that are unable to meet these minimum criteria are to be classified as open dumps and were to be upgraded or phased out over a statutorily set period of five years.

The criteria are essentially performance standards that cover the following subject areas:

- floodplains;
- endangered species;
- surface water;
- groundwater;
- waste application limits for land treatment facilities;
- disease transmission;
- air emissions; and
- safety.

Using the Criteria as a benchmark, each state was to evaluate the solid waste facilities therein to determine which were open dumps and, therefore, had to be closed or upgraded. For each facility that failed to comply with one or more criteria, the state was required to complete an Open Dump Inventory Report form that was to be sent to the Bureau of Census. At the end of each fiscal year the Bureau compiled all reports and sent

them to EPA for publication of its Open Dump Inventory. The inventory was last published in 1985.

The Criteria were initially promulgated in 1979[7] and immediately became subject to litigation revolving around open dump classification procedures. After lengthy negotiations between the industry groups and EPA, a settlement was produced under which EPA amended its regulations to require that the state provide opportunity for public participation in determination of whether a facility is classified as an open dump.[8]

Compliance with the Criteria and, thus, the ban on open dumping, can be enforced through citizen suits, as provided for in § 7002 of RCRA, or by the state. EPA gained authority to take legal action against non-complying parties after passage of the Hazardous and Solid Waste Amendments (HSWA).

As a result of the HSWA, the Subtitle D Criteria and the mechanisms to enforce them were to be reevaluated. The HSWA required EPA to submit a report to Congress by November 8,1987, assessing (1) whether the Criteria were adequate to protect human health and the environment from groundwater contamination and (2) whether additional enforcement authority should be provided. Furthermore, EPA was required to revise the Criteria by March 31,1988, to address facilities that received hazardous household waste or hazardous waste from small quantity generators. At a minimum, the revisions were to require groundwater monitoring as necessary to detect contamination; establish criteria on the acceptable location of new and existing facilities; and provide for corrective action, as appropriate. In addition to revising the Criteria, the HSWA required establishment of a permit program or other system of prior approval for facilities receiving small amounts of hazardous waste by November 8, 1987. This permit program was meant to ensure that such facilities would be in compliance with the Criteria. Within 18 months of the promulgation of the revised Criteria, each state was to modify its permit program accordingly. If a state failed to develop and implement an appropriate permit program by September 30, 1989, EPA was given authority to enforce the Criteria at facilities accepting household or small quantity generator hazardous waste.

EPA has met the HSWA mandates to submit the report to the Congress and to notify the states of the permit program requirements. The deadline to promulgate the Criteria was missed by three and a half years; final Criteria were adopted on October 9, 1991. The newly promulgated Criteria amended the 1979 Criteria by excluding the municipal waste facilities from the Code of Federal Regulations (CFR) Part 257

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[7] Part 257, Title 40, Code of Federal Regulations (Sep.13, 1979).

[8] 46 *Federal Register* 47048, Sep.23, 1981.

requirements for open dumps and by publishing totally new Criteria for the municipal solid waste disposal facilities. These Criteria spelled out the federal siting, design and operation requirements for new and expanding landfills.

The 1991 Criteria were designed to be self-implementing. In the states that do not receive or seek approval for their programs from EPA, the operator of a landfill is responsible for ensuring that the facility complies with all provisions of the rule, for documenting such compliance, and for making this documentation available to the state upon request. Enforcement of the rules in states without an approved solid waste management plan can occur through the citizen suit provisions of RCRA or, if EPA finds the state program wholly inadequate, EPA is responsible for enforcement. To promote state adoption of the programs that are at least as stringent as the federal requirements and submission of applications for EPA approval, EPA is allowing approved states flexibility in specifying alternative requirements and schedules in many areas.

a. Applicability of Criteria:

The 1991 Criteria apply to any landfill that accepts municipal solid waste, sewage sludge, or municipal waste combustion ash. All landfills that receive wastes on or after October 9, 1993, must comply with all the federal requirements. Landfills that cease operation prior to that date must observe only the federal closure requirements. Facilities that stopped receiving wastes before October 9, 1991, do not fall under the new rules.

b. Location Restrictions:

The new rules expand on the location restrictions contained in the 1979 Criteria and, in some cases, establish outright bans on locating and operating new and existing facilities in six unsuitable areas:

1. airports;
2. floodplains;
3. wetlands;
4. fault areas;
5. seismic impact zones; and
6. unstable areas.

c. Operating criteria:

The new rules impose ten operating requirements on landfills:

1. procedures for excluding the receipt of regulated hazardous waste;
2. cover material requirements;
3. disease carrier control, known as “vector” control;
4. explosive gases control;

5. air emission control;
6. access control;
7. runoff/runon control;
8. requirements to control surface water releases;
9. restrictions on acceptance of liquids; and
10. record-keeping requirements.

A state with an approved plan may allow use of alternate cover materials and may grant temporary waivers from the daily cover requirements when extreme seasonal climatic conditions make the requirements impractical.

d. Design Criteria:

In states without approved plans, a composite liner and a leachate collection system that is capable of maintaining less than 12 inches of leachate over the liner is required. In states with approved plans, the liner and leachate collection system design is required to ensure that the concentration of 24 organic and inorganic constituents in the uppermost aquifer do not exceed maximum contaminant levels at the point of compliance. The alternative to this performance standard is the federal design. The design criteria apply to new landfills and to lateral expansions of existing landfills.

e. Groundwater Monitoring:

The federal groundwater monitoring requirements consist of four steps. The first of these is the establishment of a *groundwater monitoring system.* Such a system must have a sufficient number of wells installed at appropriate locations and depths that yield groundwater samples from the uppermost aquifer.

The second step is the establishment of a *detection monitoring program* which consists of semiannual monitoring of wells during the active life of the facility through the post-closure care period. The minimum detection monitoring program includes monitoring of 15 heavy metals and 47 volatile organics.

Results of sampling events are required to be statistically analyzed to determine if there is a significant increase over background for one or more constituents. If that is the case, the operator must establish an *assessment program*, unless the operator can demonstrate that a source other than the landfill is the cause of that increase or is the result of sampling, analytical, or statistical error. Within 90 days of triggering the assessment program, the operator must sample and analyze the groundwater for an additional 213 constituents.

The operator is also required to establish a *groundwater protection standard* for any constituent found in the assessment program. This standard must be based on the maximum contamination levels (MCL) contained in the Safe Drinking Water Act. For constituents for which no MCLs were developed background levels were to be used as a standard. Approved states may set the protection standard on the basis of health-based risks.

After a statistical analysis of the assessment monitoring results, the

operator must identify and pursue one of the allowed choices:

1. Return to detection monitoring if a source other than the landfill has been demonstrated to be the cause of the increase;

2. Return to detection monitoring if the concentration of all constituents are shown to be at or below background levels for two consecutive sampling events;

3. Continue assessment monitoring if the constituent concentrations are above background values, but are below the groundwater protection standards; or

4. Initiate an assessment of corrective measures if one or more of the constituents are detected at levels above the protection standard.

f. Corrective Action Program:

The corrective action program requires that operators characterize the nature and extent of any release; assess the corrective action measures; select an appropriate corrective action; and implement the remedy.

g. Closure and Post-closure Care:

The closure criteria require operators to prepare a written closure plan and place it in the operating record; notify the state when the closure is to occur; install a final cover system designed to minimize infiltration and erosion; and make a notation on the landfill deed that landfilling has occurred on the property. Following the closure of the unit, the operator is required to conduct post-closure care for a period of 30 years in accordance with a prepared post-closure care plan. The post-closure care requirements include:

1. Maintaining the integrity and effectiveness of the final cover system;

2. Maintaining and operating the leachate collection system;

3. Monitoring groundwater and maintaining the groundwater monitoring system; and

4. Maintaining and operating the gas monitoring system.

h. Financial Assurance:

Operators of landfills are required to show financial assurance for closure, post-closure care, and known corrective actions. The requirement applies to all operators, except state and federal government entities.

D. History of Virginia's Regulations

Virginia's formal municipal waste program started in 1971 with an amendment to the Health Code and the adoption by the Board of Health of its eight-page regulation that required landfills to apply for and receive a permit, prohibited open dumping, required daily cover and

established basic siting criteria. It also required that landfills be designed in a manner that was environmentally acceptable and would not create nuisances. As time went on, the permitting requirements were adjusted under this set of general performance standards to account for technological advances. The original regulation did not require corrective action for leaking facilities. These regulations were in force until 1988.

It was determined that more specific regulations governing operation of solid waste facilities were necessary at about the same time Congress passed the 1984 Hazardous and Solid Waste Amendments to the federal Resource Conservation and Recovery Act, which required the Environmental Protection Agency to revise its Guidelines for Open Dumps (Part 257 of Title 40 of the Code of Federal Regulations). One of the later EPA drafts was used by the Virginia Waste Management Board as a model for its new comprehensive solid waste management regulations adopted in 1988. These regulations established more definitive siting standards, required double liners, leachate collection systems, closure and post-closure care, groundwater monitoring, and corrective actions for facilities that affected groundwater. The old, unlined facilities were required to close by 1992. In many respects, these regulations were more stringent than those finally promulgated by the EPA in 1991.

Virginia was the second state to obtain approval of its solid waste management plan under EPA's RCRA Subtitle D program. As a prerequisite for EPA approval, Virginia had to amend its regulations in 1993 to conform to the federal guidelines. The standards for the municipal waste facilities required by the amended regulations were identical to those contained in the 1991 Guidelines published by EPA. One of the federal concepts that was introduced was the grand- fathering of older, unlined facilities so long as they expanded only vertically. This option was not available under the regulations Virginia had in place in 1988. This relaxation was codified by one of the changes made to the Virginia Waste Management Act by the General Assembly in 1993.[9] According to §10.1-1408.1N of the Virginia Waste Management Act:

> *...To the extent consistent with federal law, those facilities which were permitted prior to March 15, 1993, and upon which solid waste has been disposed of prior to October 9, 1993, may continue to receive solid waste until they have reached their vertical design capacity, provided that the facility is in compliance with the requirements for liners and leachate control in effect at the time of permit issuance, and further provided that on or before October 9, 1993, the owner or operator of the solid waste management facility submits to the Director:*
>
> *1. An acknowledgment that the owner or operator is familiar with state and federal law and regulations pertaining to solid waste management facilities operating after October 9, 1993, including post-closure care, corrective action and financial responsibility requirements;*
>
> *2. A statement signed by a registered professional engineer that he has*

[9] HB 1205

reviewed the regulations established by the [Health] Department for solid waste management facilities, including the open dump criteria contained therein, that he has inspected the facility and examined the monitoring data compiled for the facility in accordance with applicable regulations and that, on the basis of his inspection and review, has concluded: (i) that the facility is not an open dump, (ii) that the facility does not pose a substantial present or potential hazard to human health and the environment, and (iii) that the leachate or residues from the facility do not pose a threat of contamination or pollution of the air, surface water or ground water in a manner constituting an open dump or resulting in a substantial present or potential hazard to human health or the environment; and

3. A statement signed by the owner or operator (i) that the facility complies with applicable financial assurance regulations, and (ii) estimating when the facility will reach its vertical design capacity.

In accordance with this provision of the Virginia Waste Management Act (VWMA), and EPA's regulation grandfathering certain solid waste facilities, some of the old, unlined facilities remain in operation. Later amendments of this section of the VWMA reduced the regulatory requirements for construction, demolition and debris landfills and for non-hazardous industrial waste disposal facilities.

The financial assurance requirements were put in place in 1987 and were amended in 1997 to bring the requirements up to-date. The financial assurance requirements mandate, among other things, that owners and operators of solid waste landfills demonstrate financial responsibility for the costs of closure, post-closure, and corrective action associated with their facilities. These regulations are equivalent to the most recent federal regulations but are broader in scope as they require financial assurance for all solid waste facilities, regardless of type.

Amendment 2 to the Virginia Solid Waste Management Regulations, which resulted from a petition from 40 municipalities, addressed numerous revisions to the regulations. Public comment on the approximately 530 proposed revisions to the regulations, which were proposed in November 1996, are currently under review by the Department of Environmental Quality.

1. Solid Waste Management in Virginia

As statutory and regulatory standards at the state and federal level evolved, so did the content of the solid waste program and procedures implementing the standards.

As noted earlier, prior to 1971 there were neither legal nor regulatory requirements for solid waste management in Virginia. In 1967, the Bureau of Vector Control in the Department of Health received a U.S. Public Health Service grant to close or consolidate open dumps in Virginia. Without a legal mandate, the Bureau was able to close about 800 open dumps across the state. This phase of the effort culminated in 1971 when the Health Code was amended and regulations were adopted to establish the basis for the solid waste program. The 1971 amendment required the Health Department to

issue permits to all solid waste disposal facilities. Virginia's permitting procedures also evolved with time. One-page permits describing the owner and the location of the facility issued in 1971 gradually changed to very detailed documents several inches thick. Similar evolution took place in the requirements for local government approvals of facilities, and public participation in the permitting process. The current requirements of Virginia's solid waste management program are summarized below.

a. Pre-Application Requirements:

Section 10.1-1408.1 of the Virginia Waste Management Act was amended as recently as 1997 to require each applicant for the Department of Environmental Quality's (DEQ) permit to furnish the following documents before DEQ may deem the application complete:

1. Certification from a local governing body for the area in which the facility is to be located that the location and operation of the facility are consistent with all applicable ordinances;

2. A disclosure statement which includes:

a. Personal data and description of business experience of all key personnel;

b. A listing of all permits or licenses required for the collection, transportation, treatment, storage or disposal of solid waste or hazardous waste issued to or held by any key personnel within the past ten years;

c. A listing and explanation of any notices of violation, prosecutions, administrative orders (whether by consent or otherwise), license or permit suspensions or revocations, or enforcement actions of any sort by any state, federal or local authority, within the past ten years, which are pending or have concluded with a finding of violation or entry of a consent agreement, regarding an allegation of civil or criminal violation of any law, regulation or requirement relating to the collection, transportation, treatment, storage or disposal of solid waste or hazardous waste by any key personnel, and an itemized list of all convictions within ten years of key personnel of any of the following crimes punishable as felonies under the laws of the Commonwealth or the equivalent thereof under the laws of any other jurisdiction: murder; kidnaping; gambling; robbery; bribery; extortion; criminal usury; arson; burglary; theft and related crimes; forgery and fraudulent practices; fraud in the offering, sale, or purchase of securities; alteration of motor vehicle identification numbers; unlawful manufacture, purchase, use or transfer of firearms; unlawful

possession or use of destructive devices or explosives; violation of the Drug Control Act, Chapter 34 (§ 54.1-3400 *et seq*.) of Title 54.1; racketeering; or violation of antitrust laws;

d. A listing of all agencies outside the Commonwealth which have regulatory responsibility over the applicant or have issued any environmental permit or license to the applicant within the past ten years, in connection with the applicant's collection, transportation, treatment, storage, or disposal of solid waste or hazardous waste;

e. Any other information about the applicant and the key personnel that the Director may require that reasonably relates to the qualifications and ability of the key personnel or the applicant to lawfully and competently operate a solid waste management facility in Virginia; and

f. The full name and business address of any member of the local governing body or planning commission in which the solid waste management facility is located or proposed to be located, who holds an equity interest in the facility.

3. If the applicant proposes to locate the facility on property not governed by any county, city or town zoning ordinance, certification from the governing body that it has held a public hearing to receive public comment on the proposed facility.

4. If the applicant proposes to operate a new sanitary landfill or transfer station, a statement including a description of the steps taken by the applicant to seek the comments of the residents of the area where the sanitary landfill or transfer station is proposed to be located regarding the siting and operation of the proposed sanitary landfill or transfer station. The public comment steps shall include publication of a public notice once a week for two consecutive weeks in a newspaper of general circulation serving the locality where the sanitary landfill or transfer station is proposed to be located and holding at least one public meeting within the locality to identify issues of concern, to facilitate communication and to establish a dialogue between the applicant and persons who may be affected by the issuance of a permit for the sanitary landfill or transfer station.

5. If the applicant is a local government or public authority that proposes to operate a new municipal sanitary landfill or transfer station, a statement including a description of the steps taken by the applicant to seek the comments of the residents of the area where the sanitary landfill or transfer station is proposed to be located

regarding the siting and operation of the proposed sanitary landfill or transfer station. The public comment steps shall include the formation of a citizens advisory group to assist the locality or public authority with the selection of a proposed site for the sanitary landfill or transfer station, publication of a public notice once a week for two consecutive weeks in a newspaper of general circulation serving the locality where the sanitary landfill or transfer station is proposed to be located and holding at least one public meeting within the locality to identify issues of concern, to facilitate communication and to establish a dialogue between the applicant and persons who may be affected by the issuance of a permit for the sanitary landfill or transfer station. For local governments that have zoning ordinances, such public comment steps as required under §§ 15.1431 and 15.1493 shall satisfy the public comment requirements for public hearings and public notice.

These documents must accompany the applicants Notice of Intent which should state what action the applicant requests DEQ to perform. If the documents are found to be complete and acceptable, the applicant will be notified that he may submit Parts A and B of application.

b. Part A Application:

Part A application provides the information essential for assessment of the site suitability for the proposed new facility. It contains information on all siting criteria applicable to the facility and a geo-technical and hydro-geological report describing the surface and subsurface conditions at the site. It is accompanied by applicable maps and site descriptions.

The geo-technical report must describe the procedures used in drilling and recording of the borings and the results of analyses performed. It should contain interpretations of the data on each soil unit detected underneath the site.

The hydro-geologic report must describe water table elevations, direction and rate of groundwater flow and the methods used in making the measurements. The report also contains the site geologic map based on the data collected during the site investigation.

Upon receipt of a complete Part A application, DEQ conducts a technical review. If approved, the applicant is notified to submit Part B of the application.

c. Part B Application:

Part B application contains detailed engineering design and construction, operating, contingency, and closure and post-closure care plans for the proposed facility. These plans are to be accompanied by the design report, the operations manual and financial assurance documentation.

The engineering design plans submitted in support of the Part B

application must be complete and sufficient to construct the facility. In addition they should show detailed drawings for drainage control structures, access roads, fencing, leachate and gas control systems, buildings, signs and other construction details. The plans must be accompanied by a design report that consists of the following parts:

1. Data about owner and operator;
2. Proposed acreage, site life and capacity;
3. Types, quantities, and sources of waste; and
4. Description of the design to include major site features, traffic routing, liner and leachate systems, groundwater monitoring and construction specifications.

Part B must also contain a closure plan that describes those measures to be accomplished to close the facility when the useful life of the units at the facility is reached. The plan must show how the facility will be closed to meet the requirements of the regulations. The closure plan must be accompanied by a closure and a post-closure care cost estimate which are used to determine the level of financial assurance that will be required from the owner or the operator of the facility.

The operation manual contains detailed instructions to the site operator dealing with initial site preparation, daily operation, development of phases, closing instructions, inspection plan, closure and post-closure care, safety plan, control of unauthorized wastes, and emergency contingency actions.

The emergency contingency plan delineates procedures for responding to fire, explosions or any unplanned releases of harmful constituents to the air, soil or surface water. This emergency plan must be submitted to the local police and fire departments and to the nearby health care facilities.

d. Permit Review and Issuance:

Once DEQ receives all the information that is required to issue a permit, the staff performs a technical review of the documentation submitted. Based on the information received and its own verification of the data, the staff drafts a permit and advertises the availability of the draft permit in the local newspapers and on the radio and holds a public hearing in the locality. Major permit amendments are handled in the same manner. After the hearing, the Director of DEQ is required to determine, after investigation and evaluation of comments by local government that the proposed facility poses no substantial present or potential danger to public health (§10.1-1408.1D). After the permit is issued, the operator may begin construction. When the construction is complete, DEQ staff inspects the facility to ensure that the facility has been constructed in accordance with the approved design. The operator may then start accepting the waste.

e. Compliance and Enforcement:

All active solid waste management facilities are inspected quarterly to assure compliance with the permit or, in the case of older facilities, with the requirements of the regulations. Should the inspector find deficiencies in operation, he is required to issue either a Letter of Noncompliance in case of minor discrepancies or a Notice of Violation in cases that require significant effort to correct. Facilities are re-inspected after compliance is achieved. Continuous non-compliance is reported to enforcement.

Part III: Current State of Solid Waste Management in Virginia

A. Municipal Solid Waste Landfills in the Commonwealth

1. Number of Active Landfills

Currently there are 70 active municipal solid waste landfills in the Commonwealth. These landfills occupy approximately 22,238.6 acres. Operating landfills currently occupy approximately .0008 (eight ten-thousands of 1 percent) of Virginia's land. Table 1 provides a list of these 70 solid waste management facilities that includes the facility name, permit number, county/city, permit issue date, facility category, total acreage, total active acres, estimated daily tonnage, and estimated total capacity (where available) of each of the landfill facilities. Virginia's active municipal solid waste landfills range in age from 3 to 27 years old, based on their permit issuance date. Figure 1 is a map of Virginia that identifies those Virginia counties and/or cities where these landfills are located.

Out-of-state municipal waste is disposed of in nine of Virginia's landfills. These facilities are known as "regional" landfills. Figure 2 identifies the Virginia counties and/or cites where these "regional" landfills are located. The sources and amounts of such wastes received by Virginia's regional landfills from in-state as well as out-of-state sources are presented in Table 2. A total of approximately 993,720 tons of municipal solid waste was disposed of in these "regional" landfills during the fourth quarter of 1997. Of this, approximately 314,281 tons, or 32 percent, was from in-state sources. The data summarized in Table 2 was reported by the DEQ as the result of the newly established reporting requirements placed on the facilities by the 1997 General Assembly. Information is currently available only for the last quarter of that year because the reporting requirements went into effect on July 1, 1998.

2. Inactive and Closed Landfills

There are a number of original "open dumps" and older landfill sites in Virginia built prior to regulation of solid waste disposal. Approximately 800 of these sites stopped operation in the late 60's and early 70's. Tables 3 and 4 provide a list of the closed and inactive landfill sites that opened before the effective date of the current regulatory program, but were in operation when the regulations went into effect and therefore fall under the current closure requirements. The 213 closed and 33 inactive sites are identified in Tables 3 and 4, respectively, by facility name, permit number, county/city, permit date, permit revoked date, operator, date of last waste accepted, formal closure date, and size of

site. Virginia's closed municipal solid waste landfills and inactive[10] sites range in age from 9 to 27 years and from 7 to 27 years, respectively, based on their permit issuance dates. A number of these sites were in existence well before the federal or State regulations were in place and well before a permit was required; therefore, the actual age of some of these sites is not known and the age is determined by the date of permitting.

3. Estimates of Tonnages and Capacities for Landfills in Virginia

Starting with 1988, landfill permits issued by DEQ specify the acreage of the individual cells[11] that can be constructed and operated under the terms of that permit, regardless of the total acreage of the site. Based on the actual permitted area and the estimates of the design height of each cell (usually designed with a side slope grading of 3:1), it is possible to estimate the total volume of waste that may be disposed of at the facility. Rough calculations were performed for privately owned or operated facilities. An initial air space capacity[12] estimate of 300 million tons was calculated using this very imperfect method. These figures do not include reserve capacity, which is generally acreage owned by a facility for which the facility has a Part A permit, but not a Part B permit. Hence, the land may be available for future use, subject to approval of permit amendments that address issues such as the facility's operating plan. Also, because the facilities are currently in operation and have utilized some of the capacity included in this calculation, the permitted remaining capacity is somewhat less, depending on the number of years in operation and the rate of intake. Based on the data collected in 1997, the current rate of intake and the best estimate by the Department of Environmental Quality's (DEQ) Solid Waste Division, current available permitted design capacity amounts to approximately 20 years, at which time additional landfill space would need to be permitted. DEQ's Solid Waste Division is currently working with existing solid waste management facilities to refine these numbers, in order to get the best and most accurate numbers for permitted design capacity in the future.

DEQ does not place daily limits on the amount of waste that can be disposed of at a facility. Some permitees provide DEQ with information on their daily intake based on

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[10]Inactive sites are sites undergoing final closure action.

[11] Cells are lined and permitted portion(s) of the facility designed for the disposal of solid waste. The area were waste is being disposed of on the site.

[12]Air space capacity is the total capacity of a site allowing for the vertical expansion of the site above normal grade.

non-binding provisions in their permits. Some local host governments, through the DEQ permit, place daily limits on intake.

Table 1: Virginia's Municipal Solid Waste Landfills

Facility Name	Permit #	County/City	Permit Date	Facility Category	Total Acres	Active Acres	Daily Tonnage	Capacity
Loudoun Co. LF	#001	Loudoun	05/17/71	County	125		250 T/D	
Mecklenburg Co. LF	#014	Mecklenburg	07/19/71	County	146		20-30 T/D	
Augusta Co. Svc. Auth..	#021	Augusta	09/20/71	County	200		190 T/D	
Scott Co. LF	#023	Scott	09/27/71	County	60		45 T/D	
Independent Hill LF	#029	Prince William	10/29/71	County	525		600 T/D	
South Boston SLF	#031	South Boston	11/29/71	City	60		25 T/D	
Martinsville LF	#049	Martinsville	02/08/72	City	103.6		320-350 T/D	
Rockingham Co. SLF	#062	Rockingham	05/23/72	County	55		<50 T/D	
Franklin Co. SLF	#072	Franklin	09/05/72	County	425		130 T/D	
Stafford Co. LF	#074	Stafford	10/13/72	County	60.9			
Rockbridge Co. SLF	#075	Rockbridge	09/22/72	County	160		120 T/D	
Appomattox Co. SLF	#086	Appomattox	02/17/73	County	240	40	42 T/D	
Page Co. SLF	#089	Page	02/16/73	County	0		50-60 T/D	
Orange Co. LF	#090	Orange	02/26/73	County	125		40-60 T/D	
Accomack Co. SLF	#091	Accomack	03/05/73	County	113	113	50-75 T/D	
Halifax Co. SLF	#092	Halifax	03/14/73	County	0		115 T/D	

I-95 LF	#103	Fairfax	04/20/73	County	300		1,350 T/D	
Ivy SLF	#125	Albemarle	09/18/73	County	350		393 T/D	
Fauquier Co. LF	#149	Fauquier	02/04/74	County	40		117 T/D	
Covington-Peters Mtn. SLF	#178	Allegheny	01/03/75	City	66		70 T/D	
Caroline Co. LF	#182	Caroline	03/10/73	County	60		40 T/D	
Louisa Co. SLF	#194	Louisa	12/05/75	County	81		30 T/D	
Waynesboro City LF/Municipal Solid Waste Balefill	#204	Waynesboro	06/01/76	Private	60	20	70 T/D	
Lunenburg Co. SLF	#227	Lunenburg	07/01/77	County	40		31.5 T/D	
Petersburg City LF	#228	Petersburg	07/18/77	City	100		200 T/D	
Culpeper Co. LF	#251	Culpeper	06/26/78	County	287		60 T/D	
Campbell Co. LF	#285	Campbell	10/26/79	County	160		130 T/D	
Nottoway Co. SLF	#304	Nottoway	07/07/78	County	111.6	20.1	55 T/D	
Hanover Co. LF - 301	#314	Hanover	12/23/80	County	375	35	90-110 T/D	
Newport News #2 LF	#386	Newport News	10/19/82	City	115	77	570 T/D	
Mid-County LF	#397	Montgomery	04/13/83	County	103			
VA Beach LF #2 - Mt Trashmore II	#398	Virginia Beach	01/28/83	City	300	100	800 T/D	
Greensville Co. LF	#405	Greensville	06/24/83	County	30.8		70 T/D	
Quantico LF	#411	Stafford	05/06/83	Federal	10		10-15 T/D	
SPSA	#417	Suffolk	09/12/83	State	308	146.6	1,140	

Regional LF							T/D	
Fluvanna Co. SLF	#429	Fluvanna	04/02/84	County	67.9		25 T/D	
Madison Co. SLF	#442	Madison	08/13/84	County	12.5		7 T/D	
Accomack Co. LF - Northern Site #2	#461	Accomack	02/01/85	County	149.5	24.4	45 T/D	
Shenandoah Co. SLF	#469	Shenandoah	04/05/85	County	180		141 T/D	
Bristol Debris LF	#500	Bristol	08/27/86	State	10.6			
Northampton Co. LF - Oyster Site	#507	Northampton	06/23/87	County	174	70	42 T/D	
Carroll-Grayson-Galax Regional LF	#508	Carroll	07/15/87	County	70	14.7	50 T/D	919,630 CUBIC YARDS
Wise Co. LF	#513	Wise	11/09/87	County	0		140.3 T/D	
Rappahannock Co. LF	#520	Rappahannock	10/22/88	County	99			
Frederick County SLF	#529	Frederick	08/03/89	County	55		300-350 T/D	
Chambers LF	#531	Charles City	09/18/89	Private Contractor	626.7	289	5,000 T/D	
Maplewood Recycling & Waste Disposal Facility	#540	Amelia	06/12/92	Private Contractor	800		500 T/D	
Springfield Road LF	#545	Henrico	12/15/92	County	191			
Livingston LF #2	#547	Spotsylvania	01/13/93	County	538		150 T/D	
NRRA Solid Waste Facility	#548	Pulaski	01/19/93	State	552			
Old Dominion SLF & Resources Management Facility	#553	Henrico	04/22/93	Private Contractor	268	70		
King and	#554	King & Queen	06/02/93	Private	373	227		21.6

Queen SLF				Contractor				MILLION CUBIC YARDS
Smith Gap Regional SLF	#555	Roanoke	06/25/93	State	640			
Lynchburg SLF	#558	Lynchburg	11/04/93	City	75.1	36.2	260 T/D	4.4 MILLION CUBIC YARDS
Bedford County SLF	#560	Bedford	12/03/93	County	229	16.2		1.2 MILLION CUBIC YARDS
Atlantic Waste Disposal SLF	#562	Sussex	12/29/93	Private	700	25		2.6 MILLION CUBIC YARDS
Amherst County SLF	#563	Amherst	01/21/94	County	275	38	56 T/D	1.1 MILLION CUBIC YARDS
Tazewell County SLF	#564	Tazewell	03/02/94	County	1260	34		
City of Bedford (Hylton Site)	#569	Bedford	06/10/94	County	24.5	9		0.38 MILLION CUBIC YARDS
Pittsylvania County SLF	#571	Pittsylvania	09/13/94	County	450	8.8	125 T/D	700,000 CUBIC YARDS
Middle Peninsula LF and Recycling Center	#572	Gloucester	08/15/94	County	510	240	2,000 T/D	
Corral Farm Landfill	#575	Fauquier	09/23/94	County	155.8	155.8		
Big Bethel LF	#580	Hampton	05/12/95	Private Contractor	303	208	2,000 T/D	4,930996 CUBIC YARDS
Botetourt Co. LF	#582	Botetourt	05/11/95	County	40	25	50-75 T/D	500,000 CUBIC YARDS
Brunswick Waste Management Facility	#583	Brunswick	04/17/95	Private	854			
Prince Edward								

County SLF	#584	Prince Edward	06/06/95	County	102	18.7	42 T/D	
King George County LF and Recycling Facility	#586	King George	08/17/95	Private Contractor	290.5	290.2	4,000 T/D	45.5 MILLION CUBIC YARDS
Shoosmith SLF	#587	Chesterfield	12/06/95	Private Contractor	200	84		11.6 MILLION CUBIC YARDS
Bristol Quarry Balefill	#588	Bristol	02/13/96	State	138	5.6	400 T/D	
Rappahanock Regional Solid Waste Management Board SLF	#589	Stafford	07/15/96	State	0			1,200,000 CUBIC YARDS
TOTALS	**70**				**22,238.6 + Acres**	**2,441.3+ Acres**	**22,801.8+ Tons per Day**	**96.6+ Million Cubic Yards**

Source: Department of Environmental Quality, Department of Waste Management Data Base: 1997 & 1998 Data

LF/Landfill: A sanitary landfill, an industrial waste landfill, or a construction/demolition/debris landfill.

SLF/Sanitary Landfill: An engineered land burial facility for the disposal of household waste which is located, designed, constructed and operated to contain and isolate the waste so that it does not pose a substantial present or potential hazard to human health or the environment. A sanitary landfill also may receive other types of solid waste, such as commercial solid waste, nonhazardous sludge, hazardous waste from conditionally exempt small quantity generators, and nonhazardous industrial solid waste.

4. How Virginia's Landfills are Financed

Virginia's existing landfills are financed through a number of different mechanisms. Landfills owned and operated by local governments are paid for through the local tax base or through fees paid to a local authority, such as a public service authority. Privately owned and operated landfills are paid for by the operator, who recovers the operating expenses through hauling and tipping fees. Some local governments contract with private companies to handle that locality's solid waste.

Figure 1

Virginia Counties and Cities with Municipal Solid Waste Landfills

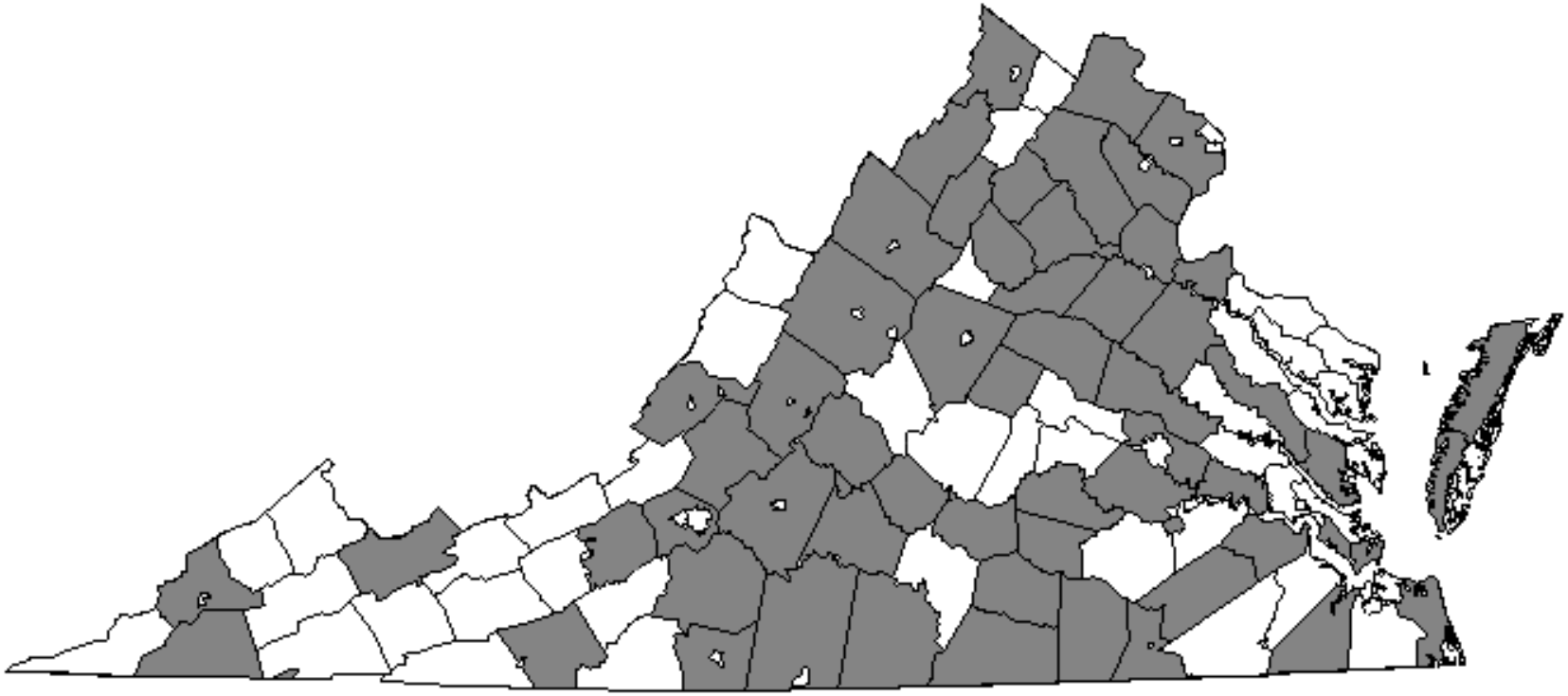

Figure 2

Virginia Counties and Cities with Landfills That Accept Out-Of-State Waste

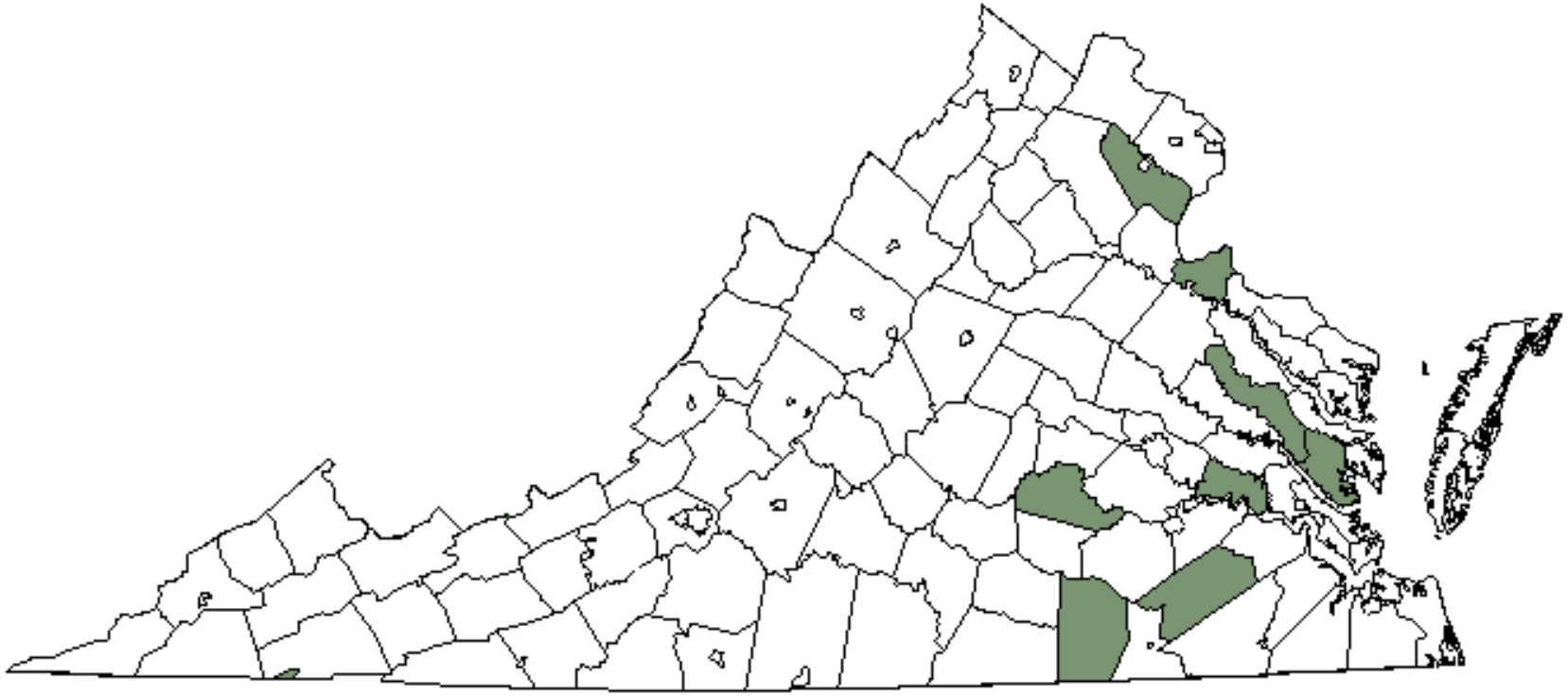

Table 2

Landfills Receiving Municipal Waste from Other States

Site Name (Owner)	Amount of Waste Received in 4th Quarter 1997 (tons) from:											
	Virginia	DC	DE	MA	MD	NC	NH	NJ	NY	PA	TN	WV
Prince William County LF (Prince William Co.)	41,160	17,315										
Bristol LF (City of Bristol)	15,890										523	261
Chambers LF (Charles City Co.)	72,335		9,071		5,651			4,794	57,460	28,690		
Maplewood LF (Amelia Co.)	30,629								99,345			
King & Queen Co LF (BFI)	55,190	49,943										
Atlantic Waste SLF (Eastern Env. Svcs.)	34,463	6,771		204	31,869	50	340	3,055	167,246	312		
Middle Peninsula LF (Gloucester Co.)	41,050	44,660			4,105				36,867			
Brunswick LF (Allied Waste)	4,427					2,862			9,573			
King George LF (King George Co.)	19,137	42,603	212		55,657							
TOTALS	**314,281**	**161,292**	**9,283**	**204**	**97,282**	**2,912**	**340**	**7,849**	**370,491**	**29,002**	**523**	**261**

Source: Department of Environmental Quality, Department of Waste Management Data Base: 1997 & 1998 Data

LF - Landfill

SLF - Sanitary Landfill

Table 3

Virginia's "Closed" Landfills

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
NORTHAMPTON CO LF	#002	NORTHAMPTON	05/17/1971		County		10/21/1982	70
HENRY CO LF	#003	HENRY	06/08/1971		County	06/30/1979	06/30/1979	27
CAMPBELL LF	#009	CAMPBELL	06/21/1971		City	10/01/1979	06/30/1982	No Data
LYNCHBURG LF	#010	LYNCHBURG	06/28/1971		City	09/01/1980	09/01/1980	50
FRANKLIN LF	#012	SOUTHAMPTON	07/12/1971		City		02/01/1995	12
GRAYSON CO LF	#013	GRAYSON	07/19/1971		County	12/31/1986	07/10/1987	40
BUTLER CAMPGROUND	#015	ISLE OF WIGHT	08/02/1971		Private	07/18/1978	08/31/1982	2
PETERSBURG	#016	PETERSBURG	08/10/1971		City	06/30/1974	06/30/1974	No Data
M&B CAMPGROUND-NORTHAMPTON	#017	NORTHAMPTON	08/24/1971		Private	07/15/1986	02/26/1987	5
RUSSELL CO-CARBO SITE	#018	RUSSELL	09/13/1971		Private	07/23/1982	10/12/1982	20
DICKENSON CO LF-CLINCHO SITE	#019	DICKENSON	09/13/1971		County	07/23/1982	10/12/1982	10
MIDDLESEX COUNTY LF	#020	MIDDLESEX	09/20/1971		County		07/26/1993	59.2
SMYTH CO LF	#022	SMYTH	09/27/1971		County	06/01/1980	06/30/1980	80
MADISON CO LF	#026	MADISON	10/14/1971		County	12/30/1984	01/08/1985	10
CARROLL CO LF	#028	CARROLL	10/22/1971	12/29/1988	County	12/31/1988	10/06/1988	75
BEDFORD CO SLF	#030	BEDFORD	11/05/1971		County	10/09/1993		40
CITY OF	#032	FREDERICKSBURG	12/03/1971		City		06/11/1995	96.6

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
FREDERICKSBURG								
BRUNSWICK CO LF	#033	BRUNSWICK	12/07/1971		County	06/30/1973	06/30/1973	No Data
GLOUCESTER CO SLF	#034	GLOUCESTER	12/07/1971		County	09/30/1993	04/19/1995	59
CHERRY HILL LF	#035	PRINCE WILLIAM	12/05/1971	10/12/1982	County		10/12/1982	50
GOOCHLAND LF	#036	GOOCHLAND	12/29/1971		County		12/01/1982	No Data
WALKER SITE-TAZEWELL CO	#037	TAZEWELL	12/29/1971	10/12/1982	County		10/12/1982	No Data
BRUSHY MTN LF-MONTGOMERY CO	#039	MONTGOMERY	12/29/1971		Federal	12/31/1973	06/30/1974	20
FREDERICK CO-WINCHESTER SLF	#040	FREDERICK	12/30/1971		County/ City	10/08/1993	10/01/1994	207
CULPEPER LF	#042	CULPEPER	01/05/1972		Town		06/30/1984	50
ALTAVISTA LF	#043	CAMPBELL	01/07/1972		Town	06/30/1980	06/30/1981	4
BLAND CO LF-CLARK SITE	#045	BLAND	01/12/1972	10/12/1982	Private	12/31/1976	10/12/1982	No Data
ARLINGTON CO LF	#046	ARLINGTON	01/18/1972	10/12/1982	County		10/12/1982	No Data
SMITHFIELD LF-COFER	#047	ISLE OF WIGHT	01/20/1972		Private		01/07/1983	3.8
PULASKI TOWN LF	#048	PULASKI	01/28/1972		Town	06/30/1975	06/30/1985	No Data
IVANHOE SITE-WYTHE CO	#050	WYTHE	02/11/1972	10/12/1982	County		10/12/1982	No Data
THOMAS SITE-AMHERST CO	#051	AMHERST	03/10/1972		County	11/01/1988	11/01/1988	No Data
ADKINS SITE LF-BUCHANAN CO	#052	BUCHANAN	03/14/1972		Private	07/23/1982	10/12/1982	No Data
I-66 LF	#053	FAIRFAX	03/23/1972		County		06/30/1988	125

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
RADFORD CITY LF	#054	RADFORD	04/10/1972		City	12/17/1988	12/01/1988	100
FAIRFAX COUNTY-LORTON LF	#055	FAIRFAX	04/17/1972	10/12/1982	County		10/12/1982	No Data
UNITIZED SYS CO	#056	MECKLENBURG	04/17/1972	12/01/1982	Private		12/01/1982	No Data
TOWN OF CHRISTIANSBURG	#057	MONTGOMERY	05/01/1972	06/18/1986	Town	12/01/1984	06/18/1986	29
ORANGE CO LF	#061	ORANGE	05/12/1972	08/31/1982	County		08/31/1982	No Data
GALAX LF	#067	GALAX	08/01/1972		City	10/09/1993	09/30/1993	60
PATRICK COUNTY LF	#070	PATRICK	08/14/1972		County	10/08/1993	01/03/1994	79
WILLIAMSBURG LF	#071	WILLIAMSBURG	08/18/1972		City	10/31/1983	06/19/1986	11
GLOUCESTER	#073	GLOUCESTER	09/08/1972	12/02/1982	County		12/02/1982	No Data
ALLEGHANY CO LF	#076	ALLEGHANY	10/04/1972	10/14/1982	County		10/14/1982	No Data
NEW KENT CO LF	#077	NEW KENT	10/11/1972		County		06/30/1983	24
SHENADOAH CO LF	#078	SHENANDOAH	10/13/1972		County	06/30/1985	10/01/1986	26
GREENSVILLE CO LF #1	#080	GREENSVILLE	10/26/1972		County	06/30/1985	06/30/1985	25
CAMPBELL CO-CARWILE LF	#081	CAMPBELL	10/30/1972		Private	10/01/1979	06/30/1982	15
JF LOVE	#083	BUCKINGHAM	11/22/1972		Private	06/30/1979	06/30/1979	156
LUNENBURG CO LF	#084	LUNENBURG	12/08/1972	12/02/1982	County	12/31/1987	12/02/1982	100
COUNTY OF CHESTERFIELD	#085	CHESTERFIELD	12/11/1972	01/22/1986	County	12/31/1986	01/22/1986	57
ISLE OF WIGHT LF	#087	ISLE OF WIGHT	02/12/1973		County			97
FLOYD CO LF	#088	FLOYD	02/13/1973		County	10/08/1993	10/08/1993	50

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
POWHATAN CO LF	#094	POWHATAN	03/22/1973		Govern.	06/30/1986	06/30/1986	94
WASHINGTON CO LF	#095	WASHINGTON	04/02/1973	03/15/1983	County	12/31/1988	03/15/1983	100
JAMES CITY CO LF	#096	JAMES CITY	04/05/1973		County	07/15/1982	07/15/1982	202
CHANCELLOR LF	#097	SPOTSYLVANIA	04/11/1973		County	09/01/1990	11/21/1988	20
LEE HILL LF	#098	SPOTSYLVANIA	04/11/1973		County		01/01/1984	45
LIVINGSTON LANDFILL NO. 1	#099	SPOTSYLVANIA	04/11/1973	09/10/1996	County		06/01/1995	15
BERKLEY LF	#100	SPOTSYLVANIA	04/11/1973		County	10/01/1993	06/01/1995	15
CHARLOTTE CO SLF	#101	CHARLOTTE	04/17/1973		County	10/08/1993	03/08/1995	87.4
CHARLES CITY CO LF	#102	CHARLES CITY	04/20/1973		County	06/01/1988	05/31/1994	15
BLAND CORR FAC LF	#104	BLAND	04/23/1973	08/08/1973	Govern.		08/08/1973	No Data
WYTHE CO LF	#105	WYTHE	04/30/1973		County	04/09/1994	09/30/1993	85
LYNCHBURG FOUNDRY, A MEAD COMPANY	#106	CAMPBELL	05/07/1973		Private			5
CRAIG COUNTY LF	#108	CRAIG	05/18/1973		County	10/08/1993		10
VPI & SU	#109	MONTGOMERY	05/30/1973		Govern.	06/30/1989	10/06/1994	4.4
DINWIDDIE CO SLF	#110	DINWIDDIE	06/15/1973		County	04/01/1994	04/25/1995	65
BLACKSTONE LF	#111	NOTTOWAY	06/25/1973	05/17/1982	County		05/17/1982	17
YORK CO LF #1	#112	YORK	06/25/1973		County	11/15/1983	01/25/1984	25.9
BRUNSWICK CO LF	#113	BRUNSWICK	06/25/1973		County	10/08/1993		50
PATRICK CO LF	#114	PATRICK	06/25/1973		Private	12/31/1987	10/15/1982	No Data
TAZEWELL CO LF-BALL								

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
SITE	#116	TAZEWELL	06/27/1973		County	12/31/1993	12/31/1994	50
CREW LF	#117	NOTTOWAY	06/29/1973	06/21/1982	County		06/21/1982	75
MATHEWS CO LF	#118	MATHEWS	07/27/1973		County	11/19/1974	11/19/1974	No Data
CENTRAL GARAGE LF	#119	KING WILLIAM	08/08/1973		County		05/23/1985	8
GREENE CO LF	#120	GREENE	08/21/1973		County	06/01/1980	06/01/1980	7
DANVILLE LF	#122	DANVILLE	09/10/1973		City	09/30/1993	12/22/1994	100
FLUVANNA CO LF	#124	FLUVANNA	09/17/1973		County	06/30/1982	06/30/1982	70
ALBEMARLE CO-KEENE LF	#126	ALBEMARLE	09/18/1973		County	08/18/1990	08/01/1994	125
CHATHAM SLF	#127	PITTSYLVANIA	09/20/1973		County	06/30/1984	06/30/1984	No Data
BFI CHARLES CITY ROAD LANDFILL	#129	HENRICO	09/28/1973		Private	10/01/1993	12/19/1996	63
COVINGTON LF	#130	COVINGTON	10/19/1973		City		08/31/1982	No Data
GILES CO LF	#131	GILES	10/19/1973		County	10/08/1993		25
COUNTY OF CHESTERFIELD	#132	CHESTERFIELD	11/13/1973		County	06/30/1976	06/30/1977	No Data
BRISTOL LF	#133	BRISTOL	11/13/1973		City	07/23/1982	10/12/1982	22.9
LOUISA CO LF	#134	LOUISA	11/14/1973		County	12/01/1975	06/30/1976	No Data
SPRINGFIELD RD LF#1 (SEE #496)	#135	HENRICO	11/14/1973		County	01/01/1991	11/01/1994	100
NINE MILE RD LF	#136	HENRICO	11/14/1973		County	11/01/1978	12/18/1978	40
PETERSBURG LF	#137	PETERSBURG	11/19/1973		City	06/30/1974	06/30/1974	No Data
AMELIA CO LF	#139	AMELIA	11/29/1973		County	06/30/1981	06/30/1981	10

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
BOTETOURT CO LF	#141	BOTETOURT	12/07/1973		Federal		07/12/1983	20.2
BATH CO SLF	#142	BATH	12/12/1973		County	10/08/1993	06/16/1995	45
DOTSON CREEK LF-WISE CO	#143	WISE	01/08/1974		County	10/12/1982	10/12/1982	45
MECHANICSVILLE LF	#144	HANOVER	01/10/1974		County	07/01/1974	07/01/1974	31
ELMONT LF	#145	HANOVER	01/10/1974		County	07/01/1974	07/01/1974	No Data
MONTPELIER LF	#146	HANOVER	01/10/1974		County	06/01/1981	06/01/1981	17
CAROLINE CO LF	#147	CAROLINE	01/18/1974	08/31/1982	County		08/31/1982	No Data
WEST POINT LF	#148	KING WILLIAM	02/04/1974		Town		12/08/1982	No Data
CHESTERFIELD COUNTY	#150	CHESTERFIELD	03/04/1974	12/02/1982	County		12/31/1987	No Data
ACCOMACK CO LF-NORTH #1	#151	ACCOMACK	03/05/1974		Govern.	10/14/1986	11/02/1988	54
PITTSYLVANIA CO	#152	PITTSYLVANIA	03/15/1974		County	12/01/1988	12/20/1988	90
KING WILLIAM CO LF	#153	KING WILLIAM	03/15/1974		County	02/01/1988	05/21/1994	15.5
CHESAPEAKE CITY LF-CIVIC CTR	#154	CHESAPEAKE	03/22/1974		City	03/01/1985	10/05/1988	48
COVINGTON CITY LF	#155	COVINGTON	03/28/1974		City		08/31/1982	No Data
HERCULES-AQUALON LF	#156	HOPEWELL	03/29/1974		Private	12/31/1987	12/19/1988	3
WISE CO LF - APPALACHIA	#157	WISE	04/29/1974		Private	06/30/1992	07/01/1991	87
WASHINGTON DIST-WESTMORELAND	#159	WESTMORELAND	05/29/1974		County	06/30/1981	06/30/1981	15.4
BAYNESVILLE LF-WESTMORELAND CO	#160	WESTMORELAND	05/29/1974		County	06/30/1981	06/30/1981	10

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
WESTMORELAND CO LF	#161	WESTMORELAND	05/29/1974		County	06/30/1981	06/30/1981	No Data
TEMPLEMAN LF-WESTMORELAND CO	#162	WESTMORELAND	05/29/1974		County	06/30/1981	06/30/1981	14.6
WHITE OAK LF	#163	STAFFORD	06/18/1974		Private	06/30/1983		15
ROANOKE VALLEY SLF	#165	ROANOKE	06/27/1974		Govern.		12/02/1996	260
PETERSBURG LF	#166	PETERSBURG	07/15/1974		City	06/30/1979	06/30/1979	No Data
ESSEX CO LF	#167	ESSEX	07/25/1974		County	10/08/1993	10/08/1993	50
CAMPBELL # 1	#168	CAMPBELL	05/25/1974		Private	10/01/1979	06/30/1982	20
H W BRYANT SLF	#169	BUCKINGHAM	08/15/1974		Private	05/20/1990	07/01/1990	20
PIEDMONT STATE HOSP	#170	NOTTOWAY	08/26/1974		Govern.			50
RANDOLPH LF	#172	LOUDOUN	08/27/1974		Private	06/30/1984	06/30/1985	22
TRI-COUNTY LF	#175	NORTHUMBERLAND	11/20/1974		County	06/01/1993		70
MID-COUNTY LF-MONTGOMERY CO	#177	MONTGOMERY	12/03/1974		County	06/30/1982	06/30/1985	90
GOOCHLAND CO SLF	#179	GOOCHLAND	01/03/1975		County	10/06/1993	10/05/1993	49
COUNTY OF AMHERST	#181	AMHERST	02/27/1975		County	06/30/1995		90
REEVES BROS LF	#189	ROCKBRIDGE	09/25/1975	08/31/1982	Private		08/31/1982	8.3
CHESTERF PAPER SITE	#191	CHESTERFIELD	10/20/1975		Private		06/30/1988	50
CITY OF BEDFORD	#196	BEDFORD	12/16/1975		City	12/12/1993		92
BFI LF	#197	CLARKE	01/13/1976		Private	10/26/1982	06/30/1994	14.6
BLAND CO LF-DEHART SITE	#205	BLAND	06/01/1976		County	06/26/1991	09/30/1993	16

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
CENTRAL SITE	#206	SOUTHAMPTON	07/13/1976		County	09/15/1985	02/26/1987	25
HIGHLAND CO LF	#208	HIGHLAND	08/05/1976		County	04/09/1994		31
NELSON CO LF	#209	NELSON	08/12/1976	10/12/1982	County		10/12/1982	56
EMPORIA LF	#210	GREENSVILLE	09/16/1976		City	06/30/1976	11/01/1985	31
SHOOSMITH SLF	#211	CHESTERFIELD	09/29/1976	12/06/1995	Private Contractor			200
NORTHAMPTON CO LF	#213	NORTHAMPTON	10/25/1976		County		03/23/1983	21
NORTHAMPTON KMC FOODS CO LF	#215	NORTHAMPTON	11/04/1976		Private	07/20/1984	10/11/1985	10
MADISON HEIGHTS LF	#216	AMHERST	01/03/1977		County	10/01/1981	11/01/1981	18
CLIFTON CLARK LF	#220	RAPPAHANNOCK	05/20/1977		Private	06/30/1987	01/31/1987	7
BRISTOL LF	#221	BRISTOL	05/24/1977	12/19/1988	City	12/31/1987	11/16/1988	22.9
PULASKI COUNTY BOARD OF SUPERVISORS	#229	PULASKI	08/08/1977		County	11/01/1988	01/02/1997	95
PULASKI TOWN LF	#230	PULASKI	08/09/1977		Town	06/30/1988	12/14/1988	500
EAST RICHMOND RD	#236	RICHMOND CITY	11/28/1977		City			100
FT LEE	#237	PRINCE GEORGE	12/15/1977		Federal	06/30/1984	06/30/1985	6.4
FT LEE SLF	#239	PRINCE GEORGE	01/05/1978		Federal		09/12/1983	No Data
NELSON CH SLF	#242	NELSON	02/27/1978		Private	06/30/1991	06/30/1992	35
GEORGETOWN LF	#244	HANOVER	03/16/1978		County	07/01/1974	07/01/1974	15
YORK CO LF	#245	YORK	04/03/1978	07/23/1980	County		07/23/1980	56.1
NOTTOWAY CO LF	#247	NOTTOWAY	06/09/1978		County			No Data

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
STATE FAIR GROUNDS SLF	#252	HENRICO	08/09/1978		Private	10/02/1985	10/02/1985	2
COUNTY OF KING & QUEEN	#253	KING & QUEEN	09/01/1978		County	10/09/1993	12/03/1996	10
FT PICKETT	#256	NOTTOWAY	09/27/1978	12/06/1982	Federal		12/06/1982	No Data
RUSSELL CO LF-COPPER RIDGE	#258	RUSSELL	09/28/1978		County	12/31/1992	01/01/1993	No Data
DICKENSON CO LF	#261	DICKENSON	11/14/1978		County	06/01/1993	09/30/1993	68
BLAND CORRECTIONAL CENTER	#265	BLAND	04/02/1979		Govern.	07/23/1982	10/12/1982	2
BIG BETHEL RD LF	#268	HAMPTON	06/04/1979		Private			No Data
HAMPTON CITY LF	#269	HAMPTON	06/21/1979		City	12/31/1985	11/25/1987	No Data
LYNCHBURG CITY LF	#273	LYNCHBURG	07/19/1979		City	10/08/1993	01/01/1994	45
CAMP PEARY	#275	WILLIAMSBURG	08/27/1979		Federal	10/16/1990	09/30/1994	7
OCEANA NAVAL AIR STN	#278	VIRGINIA BEACH	09/06/1979		Federal	10/01/1993		11
NEWPORT NEWS CITY LF	#282	NEWPORT NEWS	01/07/1980		City		11/22/1988	15
YORKTOWN-NAVAL WEAPONS STN	#287	YORK	12/04/1979		Federal	12/07/1982	06/30/1983	No Data
FT EUSTIS	#289	NEWPORT NEWS	01/17/1980		Federal	06/20/1989	02/22/1996	10.8
EAST RICHMOND RD SLF	#290	RICHMOND CITY	02/08/1980		City	09/03/1983	09/03/1983	130
SOUTHAMPTON CORRECTIONAL FAC	#291	SOUTHAMPTON	02/08/1980		Govern.	04/01/1986	08/28/1989	7
WILLIAMS PAVING CO-BIG BETHEL	#299	HAMPTON	05/20/1980		Private			10
WYTHEVILLE TOWN LF	#300	WYTHE	06/02/1980		Town	04/09/1994	12/09/1997	75

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
SMYTH CO LF-DOSS SITE	#301	SMYTH	06/02/1980	10/26/1982	County	12/31/1982	10/26/1982	11.7
MENCHVILLE RD LF-NEWPORT NEWS	#303	NEWPORT NEWS	06/27/1980		City	05/30/1984	11/22/1988	73
FT BELVOIR LF (CULLUM WOODS)	#308	FAIRFAX	10/02/1980		Federal		11/16/1995	19
SUFFOLK CITY LF - HOZIER RD	#310	SUFFOLK	10/16/1980		City	01/01/1985		66
WESTMORELAND CO	#316	WESTMORELAND	01/13/1981		County		07/28/1995	96
CHESTERFIELD - NORTHERN AREA	#318	CHESTERFIELD	01/25/1981		County			81
HENRY CO LF	#320	HENRY	01/30/1981		County	05/31/1993	06/23/1995	50
SOUTH BOSTON LF	#321	SOUTH BOSTON	03/05/1981		City		12/06/1982	15
CENTERVILLE TPK-MT TRASHMR II	#324	VIRGINIA BEACH	05/28/1981		City		06/30/1983	111
LOVINGSTON-NELSON CO	#328	NELSON	06/30/1981		County	10/01/1993	02/01/1995	35
FT AP HILL SLF	#332	CAROLINE	08/24/1981		Federal		07/31/1992	25
FT PICKETT	#333	NOTTOWAY	08/31/1979		Federal	09/30/1993	10/01/1993	15
DUBLIN SLUDGE LF	#334	PULASKI	09/14/1981		Town	11/30/1988	11/30/1988	3
FARMVILLE LF	#337	PRINCE EDWARD	12/07/1981		County		03/07/1984	27
SOUTHAMPTON CO LF-BOYKINS	#338	SOUTHAMPTON	02/01/1982		County	09/15/1982	12/13/1982	No Data
CARTERSVILLE SLF	#339	CUMBERLAND	03/19/1982		County	12/15/1990	06/01/1994	20
POQUOSON LF	#340	POQUOSON	03/19/1982		City	06/30/1984	11/08/1985	No Data

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
MADISON DIST SLF	#342	CUMBERLAND	03/19/1982		County	09/01/1993	08/01/1995	15
CRAIGSVILLE TOWN SLF	#348	AUGUSTA	10/12/1982		Town	10/01/1992	11/18/1993	No Data
WILLIAMS BIG BETHEL RD LF	#349	HAMPTON	05/10/1982		Private			No Data
AMELIA CO SLF	#350	AMELIA	05/10/1982		County		02/10/1995	19.8
JAMES CITY CO LF	#351	JAMES CITY	05/10/1982		County	05/19/1994	06/26/1995	122
KING AND QUEEN COUNTY-BOARD OF SUPERVISORS	#354	KING & QUEEN	05/11/1982		County	10/09/1993	11/03/1997	No Data
SALEM	#358	SALEM	06/09/1982		City	10/04/1993		No Data
QUANTICO MCB LF	#360	PRINCE WILLIAM	07/02/1982		Federal		06/30/1983	28
VIRGINIA BEACH-MT TRSHMR II	#367	VIRGINIA BEACH	08/05/1982		City		02/13/1984	32.3
BRADFORD LF	#372	MANASSAS	08/20/1982		Private		06/30/1983	No Data
ROBERTSON LF	#374	PRINCE WILLIAM	01/14/1983		Private		06/30/1982	No Data
HYLTON ENTERPRISES	#375	PRINCE WILLIAM	08/20/1982		Private		04/04/1986	No Data
SOUTHAMPTON CO LF-IVOR #2	#392	SOUTHAMPTON	12/07/1982		County		05/24/1989	6.1
HERCULES-RAAP PLT LF	#401	PULASKI	04/13/1983		Federal	06/30/1992	06/30/1993	No Data
CHESTERFIELD - SOUTHERN AREA	#402	CHESTERFIELD	04/08/1983		County			70
WASHINGTON CO LF	#406	WASHINGTON	03/23/1983		County	10/09/1993	06/30/1993	63.8
LOUDOUN CO LF	#448	LOUDOUN	11/02/1984	07/09/1986	County			133

Facility Name	Permit #	Location	Permit Date	Permit Revoked	Operator	Date of Last Waste	Formal Closure Date	Acres
GRAYSON CO LF	#459	GRAYSON	01/16/1985		County	09/30/1993	03/21/1995	15
BYRD FOODS LF	#464	ACCOMACK	03/12/1985		Private	06/30/1985	12/15/1989	4.6
EDWARDS AGRICULTURAL LF	#478	ISLE OF WIGHT	07/16/1985		Private	09/17/1986	10/10/1989	5
TAZEWELL CO LF	#488	TAZEWELL	10/31/1985		County	12/31/1993	12/31/1994	55.2
SPRINGFIELD RD LF-HENRICO	#496	HENRICO	05/28/1986		County	06/30/1985	06/30/1985	86.4
KENNETH MARTIN	#497	POWHATAN	04/28/1986		Private			63
RUSSELL CO LF(NO PERMIT RECORD	#499	RUSSELL	06/03/1986		County			26
CHANCELLOR SLF-EXPANSION	#503	SPOTSYLVANIA	11/05/1986		County		12/04/1992	34
KING WILLIAM CO LF	#505	KING WILLIAM	02/06/1987		County	10/09/1993	06/16/1995	14.8
STAFFORD CO LF	#509	STAFFORD	07/21/1987	07/15/1996	County			75
PITTSYLVANIA CO	#512	PITTSYLVANIA	11/21/1987		County			No Data
PETERSBURG LF	#518	PETERSBURG	12/07/1987		City			No Data
BOTETOURT CO SLF	#519	BOTETOURT	03/08/1988		County		04/23/1992	20
ORANGE COUNTY LF	#532	ORANGE	09/27/1989	07/01/1992	County			No Data
TOTALS	**213**							**8,057.7+**

Source: Department of Environmental Quality, Department of Waste Management Data Base: 1997 & 1998 Data

LF - Landfill /SLF - Sanitary Landfill

Permit Revoked: Any permit issued by the Director may be revoked when any of the following conditions exist: (1) The permit holder violates any regulation or any condition of a permit where such violation poses a threat of release of harmful substances into the environment or presents a hazard to human health; (2) The facility is maintained or operated in such a manner as to constitute an open dump; (3) The facility; (3) The facility constitutes an open dump because of its location, construction or lack of protective measures; (4)Leachate or residues from the facility pose a threat of contamination or pollution; (5) The person to whom the permit was issued abandons, sells, leases or ceases to operate the facility; (6) The owner or operator fails to maintain a financial assurance mechanism; (7) As a result of changes in key personnel, the Director finds that the requirements necessary for issuance of a permit are no longer satisfied; (8) The applicant has knowingly or willfully misrepresented or failed to disclose material facts in applying for a permit; and, (9) Any key personnel has been convicted crimes punishable as felonies under the laws of the Commonwealth.

TABLE 4

Virginia's "Inactive"Landfills

SWMF NAME	PERMIT #	COUNTY	PERMIT DATE	PERMIT REVOKED	Operator	LAST WASTE	CLOSE DATE	ACRES
KING GEORGE LF	#005	KING GEORGE	06/18/1971		County			40
CHASE CITY SLF	#025	MECKLENBURG	10/01/1971		Town	06/30/1992		20
LEE CO LF-JONESVILLE DIST	#027	LEE	10/14/1971		County	04/09/1994		100
MONTGOMERY CO LF	#038	MONTGOMERY	12/29/1971		County	10/01/1993		144
WAKEFIELD LF	#044	SUSSEX	01/07/1972		Town	11/01/1990		120
CITY OF HARRISONBURG SLF	#059	HARRISONBURG	05/01/1972		City	06/30/1994		52
KIM-STAN SLF	#082	ALLEGHANY	11/22/1972		Private	05/01/1990		56
SUSSEX COUNTY LF-ROBINSON RD	#107	SUSSEX	05/11/1973		County	10/01/1993		25
PRINCE GEORGE CO	#158	PRINCE GEORGE	05/13/1974		County	04/01/1994		50
MATHEWS CO LF	#174	MATHEWS	11/19/1974		County	10/09/1993	08/09/1994	8
WARREN CO SLF	#184	WARREN	04/29/1975		County	03/31/1994		85
SUSSEX CO LF-GIN HILL	#193	SUSSEX	10/30/1975		County	06/30/1987		10
FARMVILLE TOWN LF	#195	PRINCE EDWARD	12/15/1975		Town	10/08/1993		51
HOPEWELL CITY LF	#201	HOPEWELL	04/29/1976		City	09/30/1993		25
BUCHANAN CO LF	#218	BUCHANAN	01/10/1977		County	04/09/1994		80
HOOVER COLOR CORP	#233	PULASKI	09/15/1977		Private	07/01/1992		5.5
HENRICO CO SLF #3	#246	HENRICO	05/10/1978		County	12/31/1990		160

SWMF NAME	PERMIT #	COUNTY	PERMIT DATE	PERMIT REVOKED	Operator	LAST WASTE	CLOSE DATE	ACRES
COUNTY OF KING & QUEEN	#249	KING & QUEEN	06/21/1978		County	10/09/1993	12/03/1996	17
BROOKMAN LF #2	#262	MONTGOMERY	01/23/1979		County	05/02/1986		16.8
WILLIAMS PAVING CO-ARMISTEAD	#263	HAMPTON	02/26/1979		Private	06/18/1986		0
GREENE CO SLF	#266	GREENE	05/16/1979		County	03/31/1994		63
YORK CO LF # 2	#298	YORK	05/15/1980		County	10/08/1993		92
NORTHERN AREA LF	#302	CHESTERFIELD	06/10/1980		County			65
CHESTERFIELD	#313	CHESTERFIELD	11/12/1980	11/12/1980	County		11/12/1980	0
BOTETOURT CO LF	#319	BOTETOURT	01/30/1981		County			20
RANDOLPH DIST SLF	#341	CUMBERLAND	03/19/1982		County	12/18/1991		15
SMYTH CO-PARKER FIELD SITE	#381	SMYTH	09/03/1983		County	04/09/1994		169.8
CONTRACT V84235, POULTRY DISPOSAL SITE, GWNF	#431	ROCKINGHAM	04/20/1984		Federal	09/20/1984	06/30/1984	3.4
NRRA INGLES MTN. SLF	#479	RADFORD	07/31/1985		Govern.			18
BRISTOL CITY LF	#498	BRISTOL	04/30/1986		City			8.1
RUSSELL CO LF	#515	RUSSELL	11/10/1987		County	04/09/1994		0
SANIFILL SANITARY LANDFILL	#521	HAMPTON	08/11/1988		Private			303
NRRA INGLES MTN. SLF	#535	RADFORD	01/04/1991		Govern.			29.2
TOTALS	**33**							**1,851.8**

Source: Department of Environmental Quality, Department of Waste Management Data Base: 1997 & 1998 Data

LF - Landfill/SLF - Sanitary Landfill

Permit Revoked: Any permit issued by the Director may be revoked when any of the following conditions exist: (1) The permit holder violates any regulation or any condition of a permit where such violation poses a threat of release of harmful substances into the environment or presents a hazard to human health; (2) The facility is maintained or operated in such a manner as to constitute an open dump; (3) The facility; (3) The facility constitutes an open dump because of its location, construction or lack of protective measures; (4)Leachate or residues from the facility pose a threat of contamination or pollution; (5) The person to whom the permit was issued abandons, sells, leases or ceases to operate the facility; (6) The owner or operator fails to maintain a financial assurance mechanism; (7) As a result of changes in key personnel, the Director finds that the requirements necessary for issuance of a permit are no longer satisfied; (8) The applicant has knowingly or willfully misrepresented or failed to disclose material facts in applying for a permit; and, (9) Any key personnel has been convicted crimes punishable as felonies under the laws of the Commonwealth.

B. Solid Waste Regulation - Current Practices and Authority

Virginia has developed its solid waste management program over the past 20 years to regulate the process by which facilities dispose of solid waste and monitor its decomposition. As technology has advanced, the requirements placed on facilities have been modified. Below is a summary of some of the current regulatory and enforcement practices in Virginia for solid waste management.

1. Virginia Waste Management Board:

   a. supervise and control waste management activities of the Commonwealth;

   b. promulgate regulations;

   c. collect permit fees, but not more than actual cost of processing permits;

   d. issue orders and regulations to meet "emergency" to protect public health and natural resources and environment;

   e. clean up sites and seek reimbursement of costs; and

   f. collect, manage and disburse funds collected as a result of violations of laws and regulations that govern responding to incidents and cleanups.

2. Department of Environmental Quality (DEQ):

   a. permit and fee required for sanitary landfill;

   b. various disclosures must be made by applicant;

   c. financial assurance regulations;

   d. groundwater monitoring;

   e. certification of facility operators;

   f. upon "consent" of owner or custodian, inspect facility;

   g. if inspection entry refused, seek inspection warrant from circuit court;

   h. revocation and amendment of permits for various violations;

   i. Class 4 felony to abandon solid waste management facility; and

   j. regulate water transport of non-hazardous waste and assess fees to cover administrative and enforcement costs.

3. Enforcement:

   a. civil penalty of $25,000 by circuit court;

   b. willful non-compliance and refusal to comply with regulations - Class I misdemeanor (1-5 years and up to $25K fine);

   c. with consent of violator, can impose civil charge in lieu of civil penalty;

   d. Board can issue an order to require the facility to come into compliance with the law after 30 day notice and a hearing;

e. Board can issue a special order that carries a penalty of 12 months and up to a $10,000 civil fine after 2 notices of the same violation; and

f. statute of limitations runs 3 years from "discovery" of offense (not its commission).

Part IV: Identification of Key Issues

By talking with regulators, the regulated, environmental groups, and concerned citizens, a list of issues regarding the management of solid waste disposal has been identified, and is summarized below:

A: Landfill Capacity Issues

Based on the current volumes of solid waste being landfilled, and existing fully-permitted capacity at landfills in Virginia, capacity at these landfills will be reached in approximately 20 years. Existing capacity, and any additional capacity must be managed effectively and efficiently. Available capacity will decrease according to the volume of waste disposed of in Virginia. How do we manage existing capacity to best provide for Virginia's future?

B: Long-Term Liability Issues

Virginia's current waste management strategy requires that landfill owners and operators maintain financial resources sufficient to cover the cost of any required remedial action at each landfill property throughout a minimum 30 year post-closure period. How should we provide for cleanup of problems that might occur after the 30 year post-closure period?

C: Regulation/Inspection Issues

Virginia's waste industry companies have established their own policies with regard to the periodic internal inspection and regulation of their facilities. Periodic and routinely scheduled inspections of waste loads coming into their facilities and adherence to state regulations are part of the required day to day operation of these sites. How do we ensure that there is no unauthorized waste deposited in landfills in Virginia?

D: Revenue Issues

Nine privately owned regional facilities have been permitted in Virginia. These facilities receive municipal solid waste generated in- and out-of-state. These facilities have been established in areas where they have been approved by the locality. The locality receives "host" fees and solid waste management services as a part of the agreements. Host localities use the fees they receive for local projects such as new schools, road improvements, industrial parks, public infrastructure developments and improvements and the development of parks. What impact will different types of regulation have on these localities, and on the cost to citizens of waste disposal in other localities as well?

E: Siting Issues

As the facilities for the management of municipal solid waste increase in size and in the volume of waste that is handled on a daily basis, there is growing concern over

where these facilities will be sited. In some areas, landfills are identified as "Locally Undesirable Land Uses," (LULUs) with citizens adopting a "Not In My Backyard," (NIMBY) position with regard to a facility being located in their neighborhood. Virginia's existing regional landfills are all located in areas where a local landfill permitting process exists and conscious decisions were made over time by the governing bodies of those jurisdictions to site these facilities in their jurisdictions. Facility operators were invited into the community, usually to resolve a problem with the closure of an existing landfill site and to provide funds for local improvements. Are the state and local siting requirements sufficient to ensure local public input in siting decisions? Are the regulations sufficient to ensure that the safety and health of Virginia's citizens are guaranteed where these facilities are located?

F: Technology Issues

The nine regional landfills located in Virginia have adopted "best available technology" (BAT) for handling municipal solid waste. Even so, is the technology used in the construction of these facilities sufficient to protect the health and safety of Virginia's current residents as well as future generations?

G: Transportation Issues

Hauling waste by truck impacts Virginia's roads because heavy trucks, particularly on smaller rural roads, increase the necessity for repairs. These waste loads, whether by truck, rail car or barge, have the potential for leakage and spillage of contents. Are Virginia's regulations sufficient to control this issue? What is the potential impact of waste transport on Virginia's tourism business and rural highways?

H: Groundwater Contamination Issues

There are currently 250 permitted landfills in the Commonwealth that are required to monitor groundwater for possible contamination. Of these, 120 are in operation; the remainder are either inactive or closed. Of the total number of landfills conducting some level of groundwater monitoring, 58 are sanitary landfills and 24 are construction debris/industrial landfills that are performing detection (Phase I) monitoring[13] and 116 are sanitary landfills and 52 are construction debris/industrial landfills are performing assessment (Phase II) monitoring[14]. Tests at 168 of the 250 landfills show some apparent contamination of the area groundwater. If it is determined that the landfill is not the cause of the apparent groundwater contamination, the landfill will be removed from the

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[13]Detection Monitoring: Groundwater monitoring which includes consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of the groundwater quality at the site and provide background data on the quality of groundwater underlying and adjacent to the facility.

[14]Assessment Monitoring: Groundwater monitoring that is implemented whenever a statistical significant increase over background groundwater quality has been detected through the facilities groundwater detection monitoring program. This monitoring is undertaken to determine the extent, the source and the nature of the pollutant.

assessment monitoring list. However, it is anticipated that a majority of the 168 groundwater contamination problems being assessed result from landfills either (1) built prior to regulation and, therefore, without a liner, or (2) with improperly designed liners installed prior to 1988.

According to DEQ's Solid Waste Division records, no landfill with a Subtitle D liner has had to enter the assessment monitoring program. The older facilities tend to be in an assessment or Phase II monitoring cycle, while the recent facilities, which have been permitted since 1988 tend to be conducting detection or Phase I monitoring only to monitor for possible groundwater contamination.

How should Virginia address the issue of older leaking landfills? What does the Commonwealth need to do to protect its groundwater resources and to plan for the cleanup of these resources should a problem occur?

Part V: Thoughts on Solid Waste Management

A: Introduction

During the course of this project, materials were collected from interviews and conversations with a diverse group of people interested in and affected by solid waste management decisions within the purview of the State. The individuals identified below contributed their time and invaluable insight to the information gathering process for this project. In addition, several excerpts from various literature sources and newspapers have been examined and distilled for presentation here. These comments and materials have been categorized as follows: Citizen Representatives; Environmental Groups; Governmental Entities; Industry Representatives; and Literature/Newspaper Sources. Below are summaries of the comments and opinions of participants who, in some cases, requested that their written comments be included.

B: Citizen Representatives:

1. Ed Baber - Resident, Charles City County:

As a citizen of the Commonwealth and as a resident of Charles City County, Mr. Baber felt it was his responsibility to express his side of the solid waste issues being debated. He lives close to the Charles City Landfill. He says that yes there is noise and yes, at times, there are odors, but they sound like and smell like money to him.

He appreciates very much the economic opportunities that their landfill has provided to the county. He does not appreciate people who have not been involved in the process and who don't live near or downstream/downwind from a landfill facility trying to dictate what a locality should do or can do with their landfill.

When the Charles City Landfill site was being considered, they looked at the concept of making changes to their zoning ordinance that would allow private enterprise to come in and operate multiple landfills in their county. A local decision was made not to allow this option. The tipping fees that they collect for having the landfill operating in their county has been a huge economic benefit.

He appreciates the comments of the Secretary expressing his desire and intent to

protect the safety, health and environment for the Citizens of the Commonwealth, but he feels that solid waste and landfills are a local issue. If a locality decides on an approach to solve their economic as well as solid waste management problems, then they should be allowed to proceed with their "informed" decision.

2. David Bailey - Attorney-at-Law:

Mr. Bailey represents several plaintiffs in landfill cases. According to Mr. Bailey, court decisions don't tell you much. You have to see how the problem is perceived by the citizens of the Commonwealth and by those affected by these landfills, and then weigh those perceptions. He feels that there is a very decided lack of confidence in the government's ability to manage landfills because there is a much too friendly relationship between government and the waste industry. The overriding feeling is that the citizens don't want them located in their backyards. Citizens feel that they have no choice but to fight. Added to that, he thinks that there is a strong dislike for recycling programs in Virginia. Because of regulatory and financial assurance requirements, localities are in a financial bind, which makes them vulnerable to accepting economically feasible, large landfills, themselves accepting waste from a wide geographic area. The local government then points to the financial rewards of the facility being located in their community. Nevertheless, property values around the facilities are impacted and there is a lack of assistance to these owners.

The financial concerns of cleanup, sufficient flow to ensure profitability (and revenues to the locality), and the continuity of the supply of solid waste raise the question of financial stability of the industry. The Department of Environmental Quality (DEQ) should be interpreting the statutes more liberally, particularly as to siting and environmental impact issues. Ordinary citizens can't prove groundwater contamination because of the expense involved in sample collection, monitoring and testing, as well as the difficulty in tracing the contamination back to the landfill.

The DEQ decision to give the barge operator transporting waste to the Barge Port Facility on the James River a five-year permit was a bad decision because it allowed the operation of barges without the legislatively required sealed containers. In part, this was viewed as a bad decision by DEQ because it was based on the idea that the restriction could not be imposed until the implementing regulation is promulgated.

With present levels of imports, the current facilities are obligated for the next 20 years; this will result in the need for newer and larger facilities. As some communities are looking to garbage as a revenue source, the availability of land, the friendly reception by local government and the economics of the situation are all contributing to a "trash" state perception.

3. Jerry Cable - Resident, Charles City County:

Mr. Cable believes that we should not let waste be transported on Virginia's waterways and we should put a moratorium on waste imports until the issue is resolved. He questions the viability of the Charles City County landfill against leaking and believes that the second liner is already leaking. He also believes that the containers delivering waste from New York by barge are leaking. Many questions exist, such as the

acceptability of environmental risk, the amount of out-of-state waste accepted, and the environmental liability versus operator profitability.

In addition, Mr. Cable prepared the following text for inclusion in this report:

a) Virginia cannot allow municipal or medical waste or any other hazardous waste product to be transported on Virginia waterways. The transport of solid and regulated medical waste on waters of Virginia poses a substantial threat to human health and the environment. Unlike rail and truck transport, the clean-up and control of an open water spill will be impossible.

b) All present and planned shipments on Virginia waterways should be stopped until we are positive that it can be accomplished safely. The Governor should immediately intervene to assure the safety of Virginia citizens and the environment. Please note the following:

1) The present containers leak and those proposed by the regulations will not protect the public and the environment, particularly after accidents. The high gross tonnage expected to be shipped to the Trash Port at Shirley Plantation (45,000 to 60,000 tons per week) will result in major accidents on the James River and other Virginia Rivers.

2) Fact: The containers leak and those proposed to deliver waste to Shirley Plantation were leaking into Virginia waterways. DEQ failed to recognize the problem and to respond in a timely manner. The safety and welfare of the public and environment was compromised.

3) Fact: No organization has assumed responsibility or is in a position to inspect and monitor shipments on Virginia waterways. The existing barges are not inspected nor are they equipped to collect and control spills.

4) Fact: DEQ does not have the funds, facilities, equipment, or personnel to inspect, monitor and respond to spills or accidents on our waters.

5) Fact: DEQ has focused on single site permits and has failed to evaluate the overall flow of this material and its potential impact on Virginia's total environment. Most importantly, DEQ was willing to allow continued shipment of municipal solid waste (MSW) and provide additional permits with full knowledge that the permit holder was in violation of existing permits and was polluting state waters with hazardous materials.

6) The permit at Shirley Plantation should be remanded, a public hearing held and the issue reviewed by DEQ, the Governor and the General Assembly before any further shipments are allowed.

c) DEQ's staff should consist of scientists, engineers and other related professionals focused on protecting the citizens of Virginia and its environment; not the promotion of business at the expense of public safety and the environment. For example, the main incentive for the waste companies to ship via water is to cut shipping costs and therefore to increase profits; public safety and the environment cannot be compromised merely to satisfy the corporate bottom line.

Virginia has a choice!

d) DEQ is not and should not be a policy maker. Policy is the responsibility of the public and its representatives, the Governor and the General Assembly. Policy debate about Virginia's landfills is intense and growing and will be addressed by the 1999 Virginia General Assembly. It would be a miscarriage of public trust for major policy decisions to be made by an agency in this process.

e) Virginia has not evaluated the economic or environmental impact of high volume shipments of MSW by barge to Virginia, and has not made or implemented adequate plans to monitor or control these shipments.

C. Environmental Groups:

1. Patti Jackson - James River Association:

Ms. Jackson suggested that Virginia look at what Georgia proactively has done in the areas of reservoir management and siting and in landfill management and siting. The biggest problem in Virginia is that there doesn't seem to be a defined state policy for dealing with solid waste, partially out of concern with the "commerce clause." There are potentially a large number of abandoned landfills in Virginia with no clear direction on what is going to happen to them. Those landfills were state-of-the-art when they were constructed. Now they are problems. What is going to happen to today's state-of-the-art facilities? Will there be problems in the future? Nothing is fool-proof. Problems may surface after the 30 year post-closure period. Who will be available to pay then?

The industry has moved into communities that didn't have the money or the resources available to handle their own waste problems. They turned poor communities into "trash revenue" communities. Communities have seen some short-term economic development take place, but what happens in the long-term? Charles City County didn't get a lot of opposition to the landfill. They are currently spending the monies from the landfill for local improvements and infrastructure needs. In the long term, when problems arise, if the locality does not have the resources available, it will have to turn to the state. There could be environmental problems for the state because the state didn't take a pro-active role in the process and in dealing with this issue.

There is a perception problem that goes along with large volumes of trash being disposed of in the state. The image of Virginia as a dumping ground is an aesthetic issue. A large number of trash trucks could have an adverse impact on Virginia's lucrative tourism industry ($11.4 billion per year). We could gain a tarnished image of our natural and historic resources. Resolution is needed at the state level.

One of the worst things that has happened is the allowance of vertical expansion of landfills as a means of expanding capacity.

The Virginia Code needs to be looked at to determine what tools are available to manage these facilities. (Groundwater, Chesapeake Bay regulations, economic impact on tourism, etc.) A historic context is important. Traffic of trucks, rail and barges through important historical sites could have an impact on our tourism business. There should be some serious consideration of historic impacts before additional sites are created.

There was a Hazardous Waste Siting Bill generated in the late 1980's that contained some siting criteria that might be appropriate for consideration. The State should encourage regional cooperation for landfill needs and financial assurance to address the landfills beyond the 30-year post-closure period. A fund should be created modeled on the "oil spill" fund or Superfund. There also needs to be a better examination of the cumulative impacts of these facilities; more intense and frequent truck, rail car and barge inspection programs; and more complete groundwater monitoring.

There should be a moratorium on the issuance of any new permits for new landfills and on the expansion of existing landfill facilities until this issue is examined further. We need to create a mechanism to clean up what we have now, the old landfill sites. We need to determine our landfill needs in 20 years. We also need to develop criteria for the siting of these facilities that address regional and state concerns and needs, not just those of the locality. Transportation by all means, rail, barge, and trucks, need to be reexamined. Are the waste haulers taking adequate precautions to protect the health, safety of Virginia's residents and Virginia's environment? A manifest system should be developed similar to that in place for the hazardous waste industry to insure a cradle to grave tracking of solid waste. Finally, there needs to be a moratorium on increased waste hauling and increased capacity needs to be imposed while a Blue Ribbon Commission examines the issue in a short period of time and comes up with a solution to this problem. A process needs to be implemented in Virginia. Where are the best places in Virginia for landfill facilities (based on water- sheds, topography, geography, etc.)? The Governor should encourage Congressman Bliley to let the Flow Control Legislation be discussed in Congress. Flow control would give localities more opportunity to control waste in and into their own communities.

2. Teren MacLeod - Judy Taggart and Associates (JT&A), Vice-President for EnviroScapes:

Public sector organizations have perspectives different from commercial facilities. Funding sources, bonds, and different political support mechanisms further complicate the issue. A key concern is finding a way to continue the long term process of managing waste processing while continuing to provide locally needed services for normal household waste or household hazardous waste. The process today is to build a landfill according to the regulations but then to fill it as rapidly as possible. Ms. MacLeod questions whether the long term commitment through the 30-year closure process is really there.

3. Al Pollard - Former President, Sierra Club of Virginia

Although Mr. Pollard recognizes that the Governor did not create the problem, he believes that this effort must deal with "Fresh Kills" and New York waste to be worthwhile. He offers that because New York has said that it will not send its waste to any state that says it does not want it, the Governor should send a letter to the Mayor of New York City and to the Governor of New York requesting that they hold off on shipping waste while we review our policy. He further offers that it is not a question of whether there is a liability associated with the interstate transportation of waste and the importation of waste into the state, but a question of when there will be a problem.

Actions suggested include: writing the letters referenced above, a letter to Congressman Bliley identifying our concerns, and the freezing of imports of waste at landfills at 1995 levels. Because of the big concern with the transportation of waste, inspectors should be placed in New York to inspect the loads prior to their leaving the state. A more aggressive stream monitoring program is needed to insure the viability of the Commonwealth's water resources. Companies dealing in solid waste should have to fully disclose their environmental records prior to doing business in the Commonwealth. Finally, because each truck on Virginia's roads represents 6,000 cars, state subsidy of trucking should be examined to see if states, by reducing the subsidy, could free money to buy additional landfill space within their own states for waste.

4. Sterling Rives, James River Environmental Protection Group, Inc. & Jim Sharp - Campaign Virginia:

The issue of solid waste effects a diverse group of people from every political, economic, and ethnic background. Virginia is already the #2 importer of solid waste in the country. We are already reporting a significant increase in the amount of waste entering the state. It won't be long before we are #1. A somewhat dubious distinction. Pennsylvania is doing everything possible to push waste away from its borders. That waste stream is being directed towards Virginia. This is a huge political issue. How did it happen? Why did it happen? Who allowed it to happen? Most of the increase has come during Governor Gilmore's watch. However, the stage was set for the increase well before Gilmore became Governor.

Federal legislation is needed to address the "Commerce Clause." However, federal legislation is not needed for a state to exercise its right to adopt a policy dealing with solid waste and the protection of its natural resources. A state's policies have a lot to do with whether a state is a "net importer" or a "net exporter" of solid waste.

Their short term concerns include; the immediate impact of transportation and the effect on communities. Their intermediate concern is the issue of the loss of Virginia's available landfill capacity. And, their long term concern is that we are actually just storing the waste, "what can be done" or "will be done" in the future, when there are problems? Charles City County couldn't pay for the closure of their own small "local" landfill. How are they going to deal with the problems associated with a large "mega" landfill in the future? The costs of future problems will be borne by current and future taxpayers and residents and their children.

Virginia is having to bear a disproportionate share of solid waste. With the increased tonnages being requested for a number of the state's "mega" landfills, it won't be long before Virginia is the #1 importer of municipal solid waste. Virginia is being targeted because, currently, it is the cheapest and easiest place for waste disposal. This has occurred over the last 10 years. The advent of the stronger landfill regulations and the failure of the state to provide funding for localities to address these regulations has led to an opening of the door for the private sector to come in to provide the needed services. There is a glut of available space in Virginia landfills. Therefore, the "garbage revenue

stream" continues to flow and to pick up volume into Virginia.

Only 3 firms now operate "mega"landfills in the state. There is little, if any, competition among these firms. King George is actually accepting tonnage from its competitors. The Attorney General's Office should look at this lack of competition in the waste industry. The majority of waste for these "mega" landfills comes from out-of-state sources. Primarily, the interstate waste issue can only be dealt with legislatively on the National level and withstand constitutional challenges. Congress needs to set the framework to deal with the issue. There needs to be a solid waste platform/agenda/policy. House Resolution 1346 is better than the others being proposed, however, language needs to be added to give the State's Governors the authority to veto a facility or expansion of an existing facility.

The locality and the State need to look at the impact on neighboring communities before a facility or an expansion of a facility is approved. Local referenda should be held to make sure that the community really wants the facility.

West Virginia is using a percent cap regulation to try to get a handle on their waste problems. Full time public facility and truck inspectors are needed to inspect the trucks coming into a landfill and at the landfill work-face to ensure that no "undesirable" waste is being brought in (i.e., medical waste). The waste industry has a history of noncompliance and has had alleged ties to organized crime. Can they be trusted to do what they say they will do? Kentucky is proposing that private landfills be treated as public utilities and therefore fall under the same level of scrutiny and regulations. Truckers and waste industry companies should be required to disclose their records on environmental compliance. States should have the right to revoke a company's charter if violations occur or are persistent. Waste loads should be required to carry a certificate from a public health inspector that there is no unwanted waste (i.e., medical wastes, hazardous waste, etc.,) in the load.

Recognizing this increase in the waste stream entering the state, the Governor needs to determine if the importation of more and more out-of-state waste is an asset or a liability. A public policy statement is needed as soon as possible. Inaction leads to acceptance. Virginia's inaction on this issue and continued acceptance of more and more out-of-state waste affects our image as a state. A letter should be sent to the Governor of New York and to the Mayor of New York City by the Governor of Virginia requesting that there should be no increase in the waste stream entering Virginia from New York, and that there should be a moratorium on any further approvals or contract awards for waste disposal until the study currently underway is completed. If the Governor is serious about doing something, there should also be a moratorium on the expansion of the existing facilities. There should be a hold on what is entering the state. The time for action is now!

The Governor should agree to hold a public hearing on the Trash Port at Shirley, to give the neighbors a forum to voice their views. All the lawsuit is asking for is that a public hearing be held. This facility would bring over 3 million tons of municipal solid waste a year up the James through the Port at Shirley. There are no erosion and sediment control mechanisms in place at the barge port at Shirley. Leachate has been allowed to

drain directly into the river from the transport barges and from the port area itself. The transportation of waste by barge is a serious concern. A public hearing should be allowed and the permit revisited. One of the reasons that Virginia is so attractive as a waste importer is the availability of river access. The number of tributaries that are available for barge access is greater than most states. Barges are by far the cheapest means of waste transportation.

Financial Assurance: The use of a company's net worth as a means of providing financial assurance should not be allowed. At the end of the 30 year post-closure period, Virginia will be left with a lot of holes in the ground, filled with garbage and with several fleets of rotting, rusting garbage trucks. Landfills do leak at some stage of their lives. The waste industry is volatile. Twenty to thirty years from now, who pays for a problem with these landfills? Long-term financial assurance is needed.

The impacts of a facility can not be isolated to only impacting the facility and the locality where it is sited. It effects a larger population, then the state should be involved (i.e., transportation, barge traffic, truck traffic, transfer station siting, environmental impacts, etc.). We need to slow down the importation of waste. The sheer volume of trucks now using Virginia's roads to transport this increased waste stream is growing every day.

The permit for the expansion of the King & Queen Site should be reconsidered. It is on the headwaters of Dragon Run Swamp and Dragon Run. We need to look at the effect on Virginia's natural resources, not on the revenues that the expansion will generate for the locality. The headwaters of Dragon Run will be piped through the landfill to accommodate the expansion.

Some states are looking at the available landfill sites and capacity in Virginia as a means of preserving their own landfill capacity for their own future use. Virginia requires that localities recycle portions of their waste streams as a means of preserving Virginia's landfill capacity. Now this "reserve" capacity is being used up by out-of-state waste.

The major problem plaguing Public Landfills is the reduction of the flow of trash and a corresponding reduction in the available revenues from the site. This loss of revenue will cause an inability of the localities to pay their bonds. A bail out will be needed in some cases, if the trend continues, or taxpayers will end up paying the difference. The problem with flow control is that no one knows what can be done; Prince William County has enacted a homeowner fee to try to control some of the flow and to reclaim some revenues, and Chesterfield put restrictions and limitations into their conditional use permits for the facility, indicating that they would prefer not to take out-of-state waste. Fairfax County is considering enacting flow control legislation.

The state needs to take an aggressive action. Virginia is in a key position to affect the National debate on Solid Waste. We have to deal with this in a meaningful way. Time is vital. Action by the Governor is needed now.

5. Kay Slaughter - Southern Environmental Law Center:

The problem is that any regulations proposed will have to deal with solid waste uniformly regardless of its origin. The primary concern is with the impact of solid waste on the environment, particularly water resources. Transportation is also a concern, particularly the inspection of interstate waste shipments. She also is concerned about the number of abandoned landfills and how we will clean them up. Finally, she asks whether waste should be handled on the model of the federal regulation of radioactive waste with an eye toward getting states to focus on "homegrown" waste.

D. Governmental Entities:

1. Rob Arner - Northern Virginia Planning District Commission:

They had developed a 1998 Northern Virginia Solid Waste Status report which identified the types of waste being handled by the local/municipal solid waste authorities and by local governments. Local governments are very concerned about the competitive nature of the business and with Privatization. The Northern Virginia Planning District Commission (NVPDC) and the Northern Virginia Waste Management Board (NVWMB) sent a letter on June 5 to the United States Justice Department expressing concern over the merger of Waste Management Inc. and USA Waste Services, Inc., since this merger could result in significant market domination by the resultant large company and severely limited waste collection competition in Northern Virginia.

With the increasing privatization and market domination of several firms, local governments feel threatened that they will pay higher prices for refuse/recycling services in the future. Virginia municipalities that have privatized many solid waste management services have seen the need to continue their involvement in this area to insure that there is continued competition for municipal solid waste services. Once a local government gives up its trucks and other expensive capital equipment, it becomes difficult for them to get back into the waste business because replacing equipment becomes too costly.

The NVWMB and NVPDC Regional Resources Subcommittee approved a motion to contact our Virginia Legislative Delegation to amend the Virginia Code section under Counties, Cities and Towns, 15.1-28.02: displacement of private waste companies. A locality or combination of localities shall give (strikeout five and add three years) notice to a private company before the locality or combination of localities engages in the actual provision of the service that displaces the company. (Continue to replace five years with three years throughout this section.

The NVPDC has been exploring the implications to private sector financial assurance requirements. The NVWMB and NVPDC's Regional Resources Subcommittee requests that the state explore the long-term environmental and economic implications of private landfills in Virginia. Some statewide study could forecast any potential long-term costs and possible trust fund mechanisms to deal with any potential future problems. Also, the study will evaluate the adequacy of "captive" financial assurance requirements and post-closure funds if market failure does occur.

The potential long-term costs of landfills are not reflected in current market prices. Unfortunately, under present regulations for private landfills, there is a serious question as to whether adequate funds will be available to correct any future

environmental problems. Financial assurance provided by private sector owner or operators of landfills can use captive insurance companies (wholly-owned subsidiaries formed exclusively to "prove" the financial stability of their parent organization) to demonstrate to regulators that they qualify at face value for closure and post-closure obligations. This use of captive insurance companies is a popular corporate mechanism for avoiding long-term financial responsibility to underwrite landfilling operations. These captive insurance companies often have minimal capitalization and obligations for reserves.

More importantly, the use of captive insurance companies does not accomplish the transfer of risk, and therefore nullifies the original purpose of using insurance to demonstrate financial assurance. Without the transfer of risk there is no guarantee that these corporations can fulfill the financial obligations required for closure and post-closure care of landfills.

The use of captive insurance, rather than commercial insurance, to demonstrate financial assurance for closure and post-closure care of landfills is due to the reluctance of the insurance industry to provide affordable policies. Underwriters feel the risk is unacceptable due to the long-term environmental risk associated with landfill operations, and the high cost of clean up.

Mandating more stringent financial assurance requirements for private landfills can guarantee that future clean-up funds are available. Such requirements should additionally guarantee that proper funding mechanisms are in place in order to assure that necessary remediation or maintenance can continue even beyond 30 years after a landfill is closed. This would provide protection should the owner or operator go out of business or become financially unable to address any environmental problems that might arise. This is especially critical with respect to safeguarding ground water. If landfills are improperly designed, constructed, or maintained, they can contaminate water resources.

To best protect the public interest, private sector landfill operations should be held fiscally responsible for the long-term consequences of their operations. This responsibility should include up-front funds for corrective action and the demonstration of adequate financial safeguards for corrective action, closure, and post-closure care. Trust funds, commercial insurance policies, letters of credit, and surety bonds are the only viable financial instruments that ought to be used to demonstrate the long-term availability of adequate and guaranteed funds whenever they may be needed.

Putting together a dialogue of all the affected organizations and agencies impacted by the present flow of waste in Virginia is important to get a complete understanding of the present dynamics. Also, recycling mandates, household hazardous waste programs and public education place local governments in a new era in managing numerous parts of the waste stream now with limited financial resources.

2. Randy Boyd - Attorney/Resident, Charles City County:

About 10 years ago, Charles City County was presented with what seemed to be an insolvable problem. DEQ informed them that they had to close their landfill. They looked at all the available options and alternatives. Ultimately, they put out a request for

proposals for vendors to run their landfills and up front indicated their willingness to accept out-of-county as well as out-of-state wastes. They do not distinguish between the source of the waste as long as it meets their criteria. After an extensive process, Chambers was selected as their landfill service provider. They feel that there have been dramatic results and benefits from their actions. The "host" fees generate anywhere from $2 ½ to $6 million per year for the county. They have collected over $20 million in fees since the landfill opened. Their tax rate has fallen from $1.29 to $.72. It has allowed for the construction of a brand new school system and has dramatically helped the county financially as well as environmentally.

The degree of safety and environmental integrity goes well beyond what the state requires. They feel that they now have a better and safer disposal system in place for their waste than when they were operating their own landfill. The downside is that they have a very large landfill in their community and there have been some odor problems. The odor problems have been or are being addressed. He feels that the state ought to be supportive of allowing localities the right to control their own wastes and their own landfills.

They want to have safe, effective, low-impact transport of waste to the county. Barge transport is the safest. Barge transport is important to them. It is, for them, the cheapest method of transport. The development of the Barge Facility will serve not only the waste haulers but also the local farmers, who want to transport their products to market.

They know that eventually the landfill will have to go away/live out its usefulness so they are trying to support and develop infrastructure in the county which will be there long after the landfill. Landfills, when done properly can be closely controlled and can also be an economic benefit. The key is that as long as it doesn't impact another jurisdiction, a locality should be able to do what it wants to do.

3. Bill Britton - Director of Planning, Charles City County:

Charles City County has been the only county that has physically gone out for bids and received 4 bids for the handling of their solid waste. Through a competitive negotiation process, they established that they would not have to pay for the landfill, that they would not have to operate the landfill, and that they would not have to pay for the disposal of their wastes. They selected the vendor based on these conditions and on the best proposed site environmentally. The Chambers site had stricter environmental measures/controls proposed than either the federal or State requirements. Chambers agreed to other things including; using only the main roads for the transportation of waste to the site, a commitment to look at transportation by rail, provided economic development monies which the county has used for the purchase of several parcels of land for an industrial park. They have built a new school system and are building and enhancing their park facilities. The community was very unstable before the landfill went into operation.

Approximately 50 percent of their waste stream comes from in-state sources. They do control the type of waste and the amount being landfilled. They want the total term of the landfill to be used. They are afraid that it will ultimately come down to a restriction on the amount of out of state waste or a prohibition on accepting out of state

waste. This action would drastically affect their community.

4. Commerce Committee Staff:

Virginia is still identified as the #2 importer of municipal solid waste behind Pennsylvania. They indicated that they did not think that there would be any action on the issue of solid waste management at the federal level this year. Governor Ridge from Pennsylvania issued a broad range of restrictions dealing with municipal solid waste. His proposal to "permanently reduce waste disposal capacity and to improve waste hauling safety" includes; a three year freeze in issuing permits for new waste disposal capacity, a cap on waste disposal capacity that would permanently reduce capacity by one-third, a transporter approval requirement for all transporter vehicles with a gross vehicle weight over 56,000 pounds, and a requirement for host community agreements to be in place before the Department of Environmental Protection (DEP) could issue a permit for a new or expanded municipal waste, construction waste or commercial residual waste landfill or a resource recovery facility. They suggested that Virginia might be able to use such things as an increased and more vigilant enforcement and inspection requirement to try to come to grips with this problem.

Although they have many questions regarding the issue of interstate waste, they recognize the difficulties raised by the Commerce Clause. The public needs to be educated on the issues involved and the overall issue needs to be resolved. There should be sensible and rational legislation allowing states to handle the issue.

5. Walt Gulevich - Environmental Quality, Assistant Division Director, Office of Waste Programs, DEQ:

The loss of flow control[15] prevents localities from forcing waste to come to their landfills. A means of stemming and controlling the flow of waste equally maybe a good solution to the problem. We need to treat all waste equally - no matter its source. Maybe a uniform increase in tipping fees across the board would help. Waste is a very emotional issue. Garbage is a commodity. Industry is trying to be a better citizen than local government. Prohibition of the expansion of highways and access systems as a means of controlling the location of landfills, might be an option. The amount of compliance is probably never enough. The increase in the number of inspectors recently has helped compliance issues.

6. Stewart Leeth - Assistant Attorney General:

The Supreme Court's Interpretation is that Solid Waste is an Article of Commerce and that it is a Violation of the Commerce Clause as well as unconstitutional to ban out-of-state waste solely on the basis of its origin. A number of measures have been tried; including, larger fees for out-of-state waste and local county ordinances which try to restrict these wastes, but they have all been overturned. The primary problem is that there is no data as to why interstate waste is any different from intrastate waste (i.e., Volume?,

[15]Flow Control: Local laws by which local governments direct that the municipal solid waste (including residential, commercial and industrial) generated within their jurisdictions be disposed of and/or processed at designated facilities.

Cost of Disposal?, or, Additional Hazards?). Apparently though, the courts have kept the door open as to limitations on waste if it is done across the board (i.e., a total cap on tonnage disposed on a statewide or per landfill basis, regardless of the source or an imposed fee on the tonnage disposed of regardless of the source, or an imposed per mile transport fee regardless of the source.)

7. Local Government/Authority Meeting (Rob Arner, Northern Virginia Planning District Commission; John Hubbard, Roanoke Valley Resource Authority; Bill Britton, Charles City County; Steve Childress, Rivanna Water and Sewer Authority; John Hadfield, Southeastern Public Service Authority; Dan Mills, SPSA; Larry Land, VA Association of Counties; Tom Smith, Prince William County; Carl Newby, Arlington County; and Arthur Petrini, Rivanna Solid Waste Authority:

A number of concerns were informally discussed, including; competition, long term liability and financial assurance. Municipal and authority sites lost a lot of their waste streams with the loss of flow control. (Roanoke lost 1/3 of their waste stream with the loss of flow control.) Authorities don't have the option and ability to lower their rates rapidly to compete with the private facilities. They are facing an uphill battle trying to compete.

Financial assurance is a good idea if it is done right. The important part is to guarantee that money is there to fix a problem when it occurs. If a locality is accepting host fees then they should have the right to control their own operations and should have to pay for any consequences from their actions. Financial assurance is a major concern. Captive insurance plans are just a shell. There is no money there. At the right time the policy will fail. Then who pays to fix/cleanup the problem? The state can set its own standards for financial assurance. They don't need federal guidance to establish them. They should be consistent and apply equally across the board. The private sector is not addressing financial assurance at the same level or to the same requirements that the public sector is required to. We need to make sure that the people using the landfills today are paying for post-closure problems. After the 30-year post-closure period is over, what happens at the 40-year or beyond mark, when a problem occurs. Who is going to still be around to pay for the cleanup? If there is going to be a problem, its more likely to occur after the 30-year post-closure period.

With so much capacity in Virginia, there is an increasing appetite by the waste industry to accept less and less good waste. What is actually coming into our landfills? Trust funds are required for small landfills. Why not the large regional facilities? The consolidation of the waste firms is effecting competition, driving costs/fees up and providing less money for financial assurance. No one knows the long term effects this consolidation of firms will have. Local governments and the state will ultimately be

responsible for the cost of any long-term cleanup costs after the 30-year post-closure period. Jurisdictions are competing with private industry.

The playing field needs to be leveled. DEQ apparently is applying a rule-of-thumb in establishing their financial assurance requirements for localities and authorities. There is a concern that they are not considering fully the detailed analyses that are being prepared and submitted. They feel that private companies are just being required to submit a piece of paper saying that they are good for this amount of money, while the public sector is having to have the money in the bank. Localities have to put up the cash, not just the assurances. There should be a good faith effort to come up with the real costs associated with financial assurance requirements for each facility. There is a lot of education on financial assurance that needs to take place.

The Carbone decision resulted in the loss of major portions of the waste stream to private landfills and in higher community disposal costs. With no flow control relief, the laws tie the public sectors hands in competing with the private sector. There are 9 large (regional) landfills in the state. There are now only three owners. There is not really any competition between these owners. The private sector is not providing a competitive market. The "Displacement Bill" tied the hands of localities and authorities in dealing with the loss of their waste streams to the private sector.

Localities and authorities made investments and facility improvements and construction based on regulatory issues and mandates, now like the power industry, these improvements and facilities have or are becoming stranded assets.

A policy issue is, "Whether local government should be competing with private industry?" Waste has always been a health and safety issue. Even with the loss of a portion of their waste streams, localities and authorities operating their own facilities have to continue to play fair, have to maintain the same level of services, the same hours of operation. The shift of the waste stream means that local governments get stuck with the less desirable waste, the bad stuff. There is a need for the state to establish a solid waste policy. There are no reporting requirements for recycling programs within the state.

Prince William County does not have an authority, so when they loss flow control, they opted to compete. The community voted, however, that they didn't want the out-of-state waste, so they stopped importing trash. There were twenty haulers prior to the loss of flow control, now there are only six (6). There is a lack of competition in the waste hauling end of the business. They opted to assess a user fee for all users of the landfill instead of a tipping fee. Big haulers are raising their prices. The Prince William County "Only" landfill now has a 60 plus year capacity. Also, there has been a decrease in the amount of truck traffic on the county road systems because of this approach.

There should be a concern about the number of trucks traveling Virginia's roads, hauling waste to regional landfills and through the State. Approximately, 25 percent of these trucks are overweight. Some of the truckers have started running routes that avoid the state scales. This is also a transportation issues: accessibility of roads for larger vehicles, wear and tear on potentially overweight vehicles, overall effect of transportation on Virginia roadways should be considered. The rail-haul system should be looked at as

an alternative to truck transport.

Some of the regular services provided by an authority or locality, such as recycling or household hazardous waste collection, doesn't pay without the additional funds generated by additional waste from out-of-state.

There is a need for an established state policy and guidance for dealing with solid waste. A method for the management of waste should be established. The economics of the waste business should be balanced. There is a need for true and equitable public/private partnerships. Recycling could be funded with fees. The mechanism is already in place, the Recycling Fund, but it is not being implemented.

Landfill operators and host communities should be required to set aside funds to handle future problems. We all want trash to be safe. The costs should be borne by those who produce the trash.

There are a lot of grey areas and regulatory oversight and duplication. Is there any way to identify these areas and to simplify the process? Sometimes it is a question of clearly identifying who the authority or locality is supposed to report information to and in what format and what forms have to be used. There is a need for clarification of and uniformity in the regulatory process. There appears to be a lack of training within some areas of DEQ in dealing with some of the "required" forms and procedures. There is need especially for some form of financial assurance training.

8. Carl Newby, President of Old Dominion Chapter, Solid Waste Association of North America/October 14, 1998):

As the current President of the Virginia Chapter of the Solid Waste Association of North America, Mr. Carl Newby provided the following text delineating four areas of concern:

A) *Financial Assurance Requirements*: The potential long-term costs of landfills are not reflected in current market prices. Unfortunately, under present regulations for private landfills, there is a serious questions as to whether adequate funds will be available to correct any future environmental problems. Financial assurance provided by private sector owner or operators of landfills may not be sufficient to pay for potential long-term environmental costs. All private landfills can use captive insurance companies (wholly-owned subsidiaries formed exclusively to "prove" the financial stability of their parent organization) to demonstrate to regulators that they qualify at face value for closure and post-closure care obligations. The use of captive insurance companies is a popular corporate mechanism for avoiding long-term financial responsibility to underwrite landfilling operations. These captive insurance companies often have minimal capitalization and obligations for reserves.

On the other hand, localities are required to establish cash reserves. Public and private financial assurance requirements should be made as consistent as possible so that there is uniformity in how this program is being administered.

B) *Long-Term Liability*: Local government's first obligation is to protect public health, safety, and the environment. After the 30 years closure period, if a landfill has an environmental problem the public sector will have to bear the burden of costs and responsibility while the private sector may not be around to address the long term liability. Virginia needs to require host communities to address these future liability impacts so not to burden the state as a whole, or the state needs to establish funding now to take care of potential long term environmental problems.

C) *Increased Truck Traffic, Overweight Loads, and Waste Contamination*: Increased truck traffic in the I-95 corridor due to the major increases in trash hauling will have a major impact on the Northern Virginia region. Concerns include air quality issues in our non-attainment region due to the pending construction at the Springfield interchange. Market conditions create significant pressures to overload trucks and/or increases the likelihood of contaminated loads. Anecdotal information suggests significant overloading of trash trucks is a common occurrence. Interstate haulers frequently bypass the Virginia Department of Transportation (VDOT) scales on I-95 by routing their loads onto local roads. Overweight loads are a significant safety hazard to the traveling public and cause significant damage to Virginia's public roads. Recent headlines of trash truck accidents reveal common issues of medical waste and other improper materials being shipped to Virginia's large landfills or megafills.

The trash hauling industry needs to be closely monitored by VDOT, DEQ, and the State Police. Monitoring at this time is insufficient to control abuses.

D) *Leveling the Playing Field*: Private corporations have advantages over public operations due to weak financial assurance requirements, hauling abuses, and other questionable practices. Private corporations undercut local governments' multi-billion dollar investments in integrated waste management programs by diverting millions of tons of waste from public facilities. These public programs support curbside recycling programs, composting, household hazardous waste disposal, and public education. The current trash disposal capacity in the Commonwealth, makes it more difficult for environmentally friendly integrated resource conservation programs to succeed because of the resulting inexpensive disposal fees. Cheap disposal lessens incentives to reduce, reuse, compost and recycle waste. Conservation programs and integrated waste management programs are in jeopardy.

Local governments have invested large sums of money to develop local solid waste plans, yet a state-wide plan is lacking. Information on the flow of waste, environmental safeguards, and economic analysis are important to develop state-wide.

8. Katherine H. Stevenson, Associate Director, Cultural Resource Stewardship and Partnerships (Taken from letter regarding solid waste port Shirley Plantation, south of Richmond, Virginia):

The State Historic Preservation Office of Virginia staff feels that the site chosen for the terminal (a portion of the Shirley Plantation) will not create substantial long-term

damage to the overall property, particularly in view of the fact that it will be re-landscaped at the end of its use as a terminal. In addition, the owner feels that the income from the terminal will enable him to preserve the plantation house, which is the focal point of the landmark.

9. N.C. Vasuki - CEO, Delaware SolidWaste Authority:

They do not do any importing of waste at this time. The new "flow control" rule may impact the way that they currently do business. Virginia is currently the state that everyone wants to send its waste to. NY claims that it doesn't have the landfill space available for the waste, but apparently, Virginia does.

The biggest question and concern is, who is going to take care of these things in 40 or 50 years? The current owners/operators will be gone after the 30 year post closure period is over. Who will maintain the landfills after 30 years? If the operators are gone, then the county becomes liable for any problems and costs. If the county can't afford it then the state becomes liable. The general rule in Solid Waste and in Waste Management is the "Proximity Principle." "Waste that is generated in a given area should be disposed of in close proximity to where it is generated." If this principle were applied, people and localities would be more careful and watchful of what they were generating, disposing of , and recycling.

Virginia should restrict expansion of the existing landfill permits to cover just the immediate and long term needs of Virginia. This has nothing to do with commerce. It has everything to do with the rights of a State to protect its environmental resources. Landfill capacity should be based solely on meeting Virginia's needs for waste disposal. When you import waste, you create additional traffic, there is more effort required in the landfilling process, you have the potential for more emissions, and you degrade the environmental quality of an area.

For the past 19 years, Delaware has maintained a policy of dealing with their own waste and not sending it out of state and not accepting anything from out side the state. Now because of increasing costs and the market provided by Virginia, some of Delaware's private collectors/haulers want to take their waste to Virginia. Delaware does not want that to happen.

Are the localities that are accepting out-of-state waste and collecting "host" fees, putting any of that money away to handle future problems? Long term care is the key issue. Landfills are the classic example of passing costs on to the next generation. That's how we got the Super fund Program, as previous generations didn't want to bear the costs of proper disposal.

New York's thought process is, if we have to build our own landfills, we will have to pay more and create a potential-long term environmental problem. But, if we ship it out of state, then we have to pay less and we minimize our long term environmental concerns. Delaware is very focused on the issue of long-term care. Plans call for their landfill sites to be excavated and the waste screened and sorted every 15 to 20 years and then the same sites reused.

Virginia should adopt a policy of no more expansion. There is plenty of landfill

space available to meet Virginia's own needs. Virginia has a reputation for being very easy with the granting of landfill permits. NY has to have plenty of land available for landfills, they just don't want to spend the money or to have the potential future problems or liability. Toronto is even exporting it's own waste to Michigan, claiming that they don't have the proper or available space for landfills.

Mr. Vasuki says that the Delaware Department of Natural Resources conducted a truck inspection program in the last couple of months, and inspected some 300 trash haulers traveling Delaware's highways. They didn't distinguish between local haulers or pass-through haulers, all trucks were inspected. Of the 300 vehicles inspected, there were 100 with violations. In allowing waste to be transported long distances, it becomes very easy to include improper waste in the loads. Regular inspections are required to minimize this risk. The more traffic into or through a state, the more likely is the occurrence of spills or accidents. Periodic inspections at transfer stations and landfill sites are a necessary part of the "waste management" process.

E: Industry Representatives:

1. Phil Abraham - Director, VECTRE Corporation, representing Browning Ferris Industries (BFI):

He is concerned over the terminology being used and feels that a lot of the time that people are using the term "mega" landfill as a catch-all phrase, when in fact these "regional" landfills are of different sizes and accept different solid waste from different sources. They view things from a "wasteshed" perspective, which includes the states bordering Virginia.

2. Phil Abraham and Jeff Southard, Divisional Vice President, Government Affairs, BFI:

BFI doesn't barge any waste in Virginia and has no plans to barge waste in Virginia. BFI has 2 Subtitle "D" landfills in Virginia (Henrico County and King & Queen County). The Henrico County site is a replacement facility designed and permitted to handle only intrastate waste. More than 26 Virginia jurisdictions are served by the facility. Subtitle "D" drastically changed "wasteshed" boundaries. Economies of scale are affecting the way a locality operates its waste management concerns. Localities just don't have the ability to deal with the volumes of commercial waste being generated. Some of the facilities are offering their capacity to deal with specialized waste in order to benefit from the increased fees involved. New Jersey's regulation of landfills and hauling operations as utilities in the state created the longhaul market/opportunities.

They feel that the idea/concept of the requirement for a "certificate of need" is not constitutional and that it is not the best way to address the issue.

The loss of flow control has created a real problem for localities that had designed their facilities with certain waste streams in mind. Now, they can't direct the waste to their own facilities. There is a lot of capacity existing in Virginia. This increased capacity is leading to economic development opportunities in the state and for "host" benefits for localities that elect to have private industry operate and maintain a "regional facility in their locality. The key is that all of these "regional" landfills went through a

local landfill permitting process and informed decisions were made over time by the governing bodies of those jurisdictions to site these facilities in their jurisdictions.

Virginia has the capacity for handling solid waste and the cost is lower. It is a very competitive market. Virginia has permitted a lot of capacity in the last 5 or 6 years. There is also a lot of capacity in Pennsylvania and Ohio. Virginia has the capacity to deal with longhaul waste. Transportation costs are the key to longhaul waste.

You have to consider local government rights, local government benefits, interstate commerce issues, and the fact that Virginia currently exports some of its own waste, before making a decision on how to deal with "solid waste."

BFI is different from the other companies, primarily because their sites in Virginia serve regional wastesheds. They are concerned about the volume of longhaul waste that some facilities are accepting. There needs to be a reasonable plan designed to meet regional needs. Some public officials and citizens view the increased acceptance and reliance on longhaul waste as a failure to recognize the concerns of the state about capacity and the use of Virginia's environmental resources.

Plans for larger capacity at existing sites and new sites need to consider; greater safety, increased inspections and future liability. Interstate waste is an emotional issue. The driving force is the issue of longhaul interstate waste. While Virginia has sufficient capacity to meet its long term needs, some people are concerned about capacity. People with capacity concerns believe if sites accept more and more longhaul waste in order to keep the waste stream flowing to keep their revenues up, that it will hurt Virginia's ability to deal with their own waste in the long-term. There are a lot of facilities that have disposal contracts with local governments that could be affected, depending on the position and the actions taken by the state. In dealing with the interstate commerce clause there has to be a reasonable and rational basis for the restriction.

3. Phil Abraham and Steve Yob, BFI District VP:

The Old Dominion site opened its gates in 1994. It accepts waste from Central Virginia primarily, with some waste now coming from Albemarle County and Culpeper County. It is a Subtitle "D" facility which does not accept out-of-state waste. Henrico receives $1 million in host fees from the facility each year. The King & Queen site was the result of a competitive bid process which occurred after the Charles City Landfill site. King & Queen County still own the land. BFI leases the property and pays rent to the County ($2 million per year). It serves primarily as a "regional" facility and a "local" facility that accepts some "long-haul" waste. The site was originally restricted to accepting waste from within a 150 mile geographic area around the site. That limitation has recently been lifted. BFI strives to be sensitive to the community and sensitive to public perception.

In an effort to make the King & Queen landfill more efficient, they have applied for and received approval to construct 28 acres of wetlands to replace 7 acres of wetlands that currently occupy the middle of the site. They have established a trust fund with the county to handle any environmental problems that should arise and for environmental and long-term monitoring projects. Both of the sites operated by BFI have or will have

electricity generating plants to utilize the methane gas being generated by the decomposing waste. They have an inspection program in place. They inspect every 5th truck from every generator hauling into the site. They also have radiation detection equipment on site, at the entry/weighing station. They have laboratory capabilities at the weighing stations to test and compare the samples that they collect during the truck inspection process. BFI looks at things from a "wasteshed" basis. Their facilities only accept waste from the "wasteshed" in which the facility is located. A local customer's waste collection costs are currently being subsidized by the fees collected from out-of-state waste.

4. J. Victor "Vic" Arthur, III - Manager, VA Waste Industries Association:

He stressed that they were the Private Sector and they feel that they can do it better than the Public Sector. He said that there had been a report done on at least 7 "regional" landfills looking at the issue of benefits provided. He is interested in the development of Strong Public/Private Partnerships. He is very interested in the status and fate of the Barge Bill. They have gone on record as supporting "Reasonable Regulations." He would like to see that the Private Sector is on an equal footing with the Public Sector.

5. Allen Blakey - Director, Public Affairs, National Office - Environmental Industries Association:

The current atmosphere involving waste management is resulting in the construction of fewer but bigger landfills which is creating a need to draw from a larger and larger area. This is increasing the interdependence of states in the area of waste management. He feels that interstate disposal of waste is a function of the overall environmental protection trend.

6. John Daniel - McGuire, Woods, Battle and Boothe:

This is a very complicated constitutional issue and a high profile issue. The best distinction is that Solid Waste Management Facilities (i.e., landfills) are legal, while "dumps" are illegal by state statute. Learned legislators often interchange the terms without understanding or recognizing the difference. We are dealing with a fairly new concept. Pre-1988 regulations consisted of a 2-page "How-To" document issued by the Health Department. Now we are dealing with 500+ pages of mandated regulations. In Virginia there was an effort to anticipate what the federal regulations (Subtitle D or RCRA) would require. The current regulations are actually more restrictive than those mandated at the federal level. Things have come a long way. Economically, the cost of landfill operation went up with the issuance of the new regulations. Many local governments couldn't afford to stay in the landfill business so it opened the door for private competition. Local governments approached vendors, put out RFPs, and negotiated for the operation of landfills and for the transport and handling of their solid waste. These negotiated contracts provided services for free for the localities acting as "hosts" for the landfill operations. In order to provide these "free" services, the vendor or landfill operator built larger facilities to handle more solid waste from a wider geographic area. Local governments opened the door for increased competition and the interstate

transport of solid waste.

There is currently no state role in determing whether there is enough capacity at any given landfill to accommodate this increased flow of solid waste. In 1990, HB 171 was presented for consideration. This proposed legislation would have required a Certification of Public Need prior to the development and construction of any new landfill facilities. The Virginia Waste Industries Association is for once working hard, in a proactive manner, to address this issue. They are coming up with their own legislative solution to address their concerns and to allow companies to do their business.

7. Michael Kearns - Atlantic Waste:

Since 1987, the industry has become more and more technically proficient, especially with regard to the liner systems. The days of just burying trash in the ground are gone. Landfills have come a long way. It is the system that works. It is the systems that are used at a site that protects the environment (i.e., liners, leachate collection, gas management, ground water monitoring, surface water monitoring, etc.).

Waste management system operators work in a very regulated environment. There needs to be communication between the operators, the Department, and the State. Compliance is important to facilities. Virginia is becoming more and more attractive to out-of-state waste because of its increasing capacity, available land area, bigger landfills, and cheaper rates. Pennsylvania is developing a plan to determine how to handle their disposal needs for a ten-year period. It is important for Virginia to ensure that it has volume available to take care of its own waste. Different modes of transportation of waste need to be examined. Use of the rail system would keep a lot of traffic off of the highways.

Pennsylvania has a system requiring daily reporting of where the waste entering their landfills comes from. Quarterly reports to the state are required from all the landfill operators. Pennsylvania is currently the #1 importer of municipal solid waste, but they also export a lot of hazardous waste.

There are a lot of trade-offs in the waste business. The waste industry provides a service to the state. The state has to ensure that the health and environmental safety factors and concerns are addressed. There has to be a recycling component to make the system work. We are a throw away society. We have to start with our children in order to get a recycling program off and running. For recycling to work we have to create and maintain markets for recycling. There needs to be a solid waste industry as well as regulation. Landfills have systems in place to meet and exceed the safety and environmental requirements. The major problem is that the citizen groups lack the knowledge of what systems landfills have in place to address the safety and environmental concerns.

8. Dr. John Skinner - Executive Director and CEO, Solid Waste Association of North American (SWANA):

The Solid Waste Association of North America is a professional organization with some 7,000 members. They have a large and active organization in Virginia. Their members are from the public sector and include Executive Directors of Waste

Authorities. They do a lot of professional development activities for their members. The biggest issue facing their members was the loss of "flow control" authority several years ago. This resulted in an extreme consolidation in the industry. Public authorities have become much more businesslike and much more market oriented. They are now more business like, more service and more bottom line oriented.

9. Virginia Waste Industries Association (Vic Arthur, Jeff Burrier, Heidi W. Abbott, John W. Daniel, II, Tom McKinley, Jerry Johnson, Howard Burns, Tim Hayes, Chuck Duvall, and L.E. "Butch" Joyce.):

In the mid-80's, local governments managed their own landfills, there were few regulations and very little state oversight. With the release of the new regulations in the late -80's very few localities had the financial resources needed to run and maintain their own landfills. The 1993 version of RCRA Subtitle "D" made it even more difficult for localities to operate their own landfill facilities. This opened the door for the Private Sector to come to help the localities deal with their solid waste. Also, the cost of closure for some existing landfills was too high for the localities to handle. This resulted in an active solicitation by some localities for private vendors to handle their waste. The Charles City County, Public-Private Partnership set the pattern for the future of landfilling operations.

Interstate waste resulted in the development of "regional landfills." Interstate waste provided a sufficient stream of waste per day, which provided for their operation and maintenance and for the benefits that "host" communities currently receive. Regional landfills provide a revenue stream to the localities and to the state. There is no difference between NY waste and local waste.

This is a "zero tolerance/zero defect/zero discharge" industry. It is the only industry that can't discharge into the environment. The liabilities for improper management of a solid waste handling facility are high. There are no economic incentives but to run as tight a ship as possible. Virginia has 9 "regional" landfills. These landfills have excellent environmental compliance records. The waste industry feels that they came into Virginia and turned around a problem and created a plus. The waste industry is a business. Like any factory, they supply jobs, monies, and other revenues to the locality where they are located. We have lost the history of the issue. It has become more of an emotional banner. Privatization and teamwork created the Public Service Authority which brought the fees down.

Historically, local system landfills were nothing more than a hole in the ground. In the '80's Virginia's solid waste regulations were weak at best. Lots of localities didn't have zoning regulations or ordinances. The State Code has been strengthened and localities have sufficient authority so that if they don't want a landfill, then it can't locate there. Every one of the current waste handling/regional landfills is accepted by local government and operates under local restrictions. The industry has inherited a lot of political baggage and has a public perception to improve. The technical requirements for the design of a landfill facility, the certification requirements for facility operators, the continuing training required, the constant inspections and vigilance by the operators and workers results in the creation of both personal and corporate responsibility for the safe

and environmentally sound operation of these facilities. There is a level of professionalism and integrity in this industry that far exceeds that envisioned by the public. It is a matter of perspective and perception. You need to look at it as an industry providing a need and a service to the locality and to the state, like any other industry or service provider. This is an industry that is doing things right. It is very politically damaging to say, "I like landfills."

The long term care requirements for landfills are unlike any other industry requirements. The 30 year post-closure rule is a minimum. There are severe financial assurance requirements that the industry has to provide for the long-term care and maintenance of these facilities. The 'superfund' program resulted from other industries not having to provide financial safeguards for the operation of their facilities and for environmental protection costs. The industry has and continues to operate under an "open door" policy. Anyone can come in to examine their records and facilities, whenever they want. It is all a matter of public record. The biggest problem is educating the public to a level that solid waste management can at least get "off the radar screen."

F: Literature/Newspaper Sources:

1. Newspaper/The Free Lance-Star, Fredericksburg (September 21, 1998):

Waste Management has a number of landfills located throughout rural Virginia. With these landfills in King George County, Gloucester, Amelia, and Charles City County, already accepting out-of-state waste, Virginia is gaining a National reputation as a willing recipient of other people's trash. While other states, including New Jersey are striving to protect their open spaces, Virginia is digging holes in the ground and filling them with waste. Is this the image that Virginia wants to present? The welcome mat is already out here in Virginia, but that doesn't mean that the sate government cannot enact stricter environmental controls on the waste industry.

The State of New York is already the biggest exporter of trash to Virginia, including 1,750 tons a day from the Bronx under a three-year, $86 million contract awarded to Waste Management in 1997. Overall, Virginia also is second only to Pennsylvania as an importer of trash, collecting about 1.7 million tons of refuse from other states in 1995. The United States Constitution prevents states from restricting interstate commerce. Waste is a lucrative commerce. Companies, like Waste Management, were invited into Virginia's communities to take over old polluted landfills a number of years age. The localities enjoy lucrative "tipping fees" and "host fees" and tax revenues, the dumps were cleaned up and replaced with high-tech landfills that meet stringent environmental regulations, and the big waste companies created big money-making sites that had long life-expectancy.

Some ways in which the Governor and the General Assembly could resolve the "waste" issue might include; freezing the number of new landfills to be built in the State, stepping up inspections of landfill operations and operators, forcing landfills to take steps to reduce odors and ensuring that these corporations have the cash on hand to handle the cleanup of any accidents. The State should also limit the routes and methods of transport of waste.

2. Document/Charles City County Landfill/Solid Waste Facility Permit - Permit Number 531:

The landfill site is comprised of 626.7 acres (approximately 289 acres in the fill portion), and is located in Charles City County two miles south of the Community of Roxbury, and 18 miles east-southeast of Richmond. The facility is a sanitary landfill which has been operating since 1990 under Permit #531 from the Department of Waste Management. The landfill has ten consecutive phases and is anticipated to receive 5,000 tons per day of solid waste. The original permit (#531) was issued on September 18, 1989.

Upon arrival at the landfill, each and every load of waste is stopped at the main gate and logged in by a security guard. Once logged in, all waste trucks are stopped just inside the gate for a visual inspection of contents. If a truck is identified as hauling municipal trash, the truck contents are visually and mechanically inspected to confirm that the load appears to contain exclusively municipal waste. This inspection is usually performed by looking down from on top of the gantry into the open topped load, once the truck is untarped. If the waste appears to be acceptable (i.e., does not contain visible quantities of anything other then routine municipal trash such as, but not limited to; sludge, ash, off specification commercial products, drums), then the truck is forwarded to the scales and onto the landfill active-face where it is visually inspected again by the landfill operator as it is unloaded and before it is compacted or disposed of. Any load discovered to contain potentially unacceptable waste at this point is completely reloaded into the waste truck and removed from the site. If a truck is identified as hauling municipal waste, but it is not visually accessible for inspection at the gantry, the truck is forwarded to the scales and onto the active-face of the landfill, where its contents are inspected by the landfill operators as it is unloaded and before it is compacted or disposed of.

The facility currently has an airspace volume of approximately 45 million cubic yards. At the anticipated average disposal rate of 4,000 to 5,000 tons per day, the life expectancy of the facility is expected to be about 20 years.

3. Document/Host Community Agreement - Charles City County/Agreement for the Use and Support of a Solid Waste Disposal System - May 18, 1988:

Chambers shall pay certain fees to the County as established in the agreement. These fees are paid in lieu of any tax (including real estate taxes) levied against the landfill, or any other tax that is enacted by the County which applies, directly or indirectly to the landfill or landfills and not to businesses generally. In the event any such tax is enacted or imposed, the County shall credit the amount of such tax against the fees to be paid by the landfill operator. Once the landfill begins operation, the landfill operator will establish a fund which may be drawn upon by the County to cover its necessary and reasonable expenses for the sampling and analysis of groundwater and surface water. The total amount of this fund is $100,000. Host Fee - In consideration for the lease to operate the landfill, the landfill operator will pay the County $4.40 per ton for every ton of commercial or out-of-County solid waste deposited in the landfill, up to 1,200 tons of

solid waste; for every ton of commercial or out-of-County solid waste over 1,200 tons per day deposited in the landfill, $5.50 per ton will be paid. Facility Closure, Monitoring and Maintenance Fund - The landfill operator shall pay to the Commonwealth of Virginia by either a trust fund, letter of credit or deposit of collateral as allowed by the Financial Assurance Regulations of the Department of Waste Management an amount sufficient to meet those regulations and further to close the landfill in any current year and maintain and monitor it for a period of 20 years following closure.

The landfill operator agreed to complete a closure plan for the original county landfill at no cost to the County in accordance and in compliance with that facilities license agreement. The operator will provide to the County, at the operator's expense, the disposal of all solid waste generated in the County and brought to the landfill or a transfer station by the County, its residents and non-profit organizations in the County, for a period of twenty years or for the life of the landfill, whichever is longer. Any commercial disposal from within the County may be charged the prevailing tipping fees.

Buffers - All areas of the landfill which are used for the disposal of waste must have the following buffers: 500 feet from the nearest existing (as of the effective date of the agreement) residence; 500 feet from any existing church, school, or recreational area; 1,000 feet from any existing well, spring, or other groundwater source of drinking water; and 200 feet from any existing public road.

Out-of-State Waste - In accordance with the express intent and desires of the County, the landfill operator is specifically authorized and approved to accept out-of-state solid waste for disposal at the landfill regardless of the geographical origin of such solid waste.

Agreement-April 9, 1996: The landfill operating hours shall be sixteen (16) hours a day, Monday through Friday from 5:30 a.m. to 9:30 p.m. and twelve (12) hours on Saturday from 6:00 a.m. to 6:00 p.m.; and the daily maximum amount of waste to be disposed of at the landfill shall be increased to a daily maximum of 6,900 tons per day with a quarterly average of 6,000 tons per day.

4. Document /Waste Importation and the Constitution: Important Interests at Stake in Virginia by John H. Turner, BFI:

Recent increases in the volumes of waste exported from other jurisdictions to Virginia disposal facilities have prompted consideration of the extent to which the Commonwealth can legally preclude or limit importation. Virginia, like all political subdivisions and all the states of our Union, depends upon open borders and a National economy that imposes both benefits and burdens. The Commerce Clause serves to ensure that those borders remain open, and that they not be closed as to some commodities, while open for others. The Commonwealth would, obviously, make no effort to preclude the importation of seemingly desirable foodstuffs, manufactured goods, service equipment, etc., or the export of other locally-produced goods for sale elsewhere. Likewise, it should not attempt to prohibit or hinder the import of waste.

The enactment and enforcement of waste importation measures would have the undesirable effect of provoking other states to engage in an unnecessary and

counterproductive was of retaliation--as jurisdictions whose economies are disadvantaged due to the loss of the ability to effectively manage waste volumes act in kind by precluding the export of their wastes. Very real safety and health threats would result from continued reliance upon older, often substandard disposal sites. Prohibitions on the movement of waste across state lines adversely affects the National economy, by isolating local jurisdictions from the burdens, though not the benefits, inherent in a single union.

5. MSW Management Newsletter (July/August 1998):

In the mid-1960's, the Municipal Solid Waste (MSW) management method of choice in the US was the open dump. Congress enacted the Solid Waste Disposal Act of 1965 and charged the Surgeon General of the US to get America moving toward better MSW management practices. With the passage of RCRA in the 1970's, the feds were given authority to write guidelines for improved landfill practices. While not enforceable by the feds, those guidelines were enforceable in the federal court system by citizens, states, etc. Guidelines are, however, just that and progress remained slow. Along came the 1980's and RCRA was amended. Among those amendments was federal authority to issue criteria that could be enforced by the federal government. Issuance by EPA of the MSW disposal facility criteria set a very high benchmark for the future landfills in the US. The criteria made many promises, perhaps the most important being the financial assurance provisions. These provisions promised the American public that there would be money to fix any failure that would occur at any landfill in the US. There are many suggested ways to provide financial assurance - insurance, letters of credit, net worth, and trust funds are the most frequently mentioned. However, the only one that puts the money on the table is a trust fund dedicated to a specific site for remediation. EPA, lacking a National commitment to advance improved MSW management selected net worth as the financial assurance measure of choice. Net worth is worth exactly “zero” at the bank. Local governments will always be around, but will the money? Not a chance. And the private sector? What is their net worth? It is tied up in holes in the ground and rusting, dirty collection trucks. Neither of which has the net worth to do anything.

Yes, we are doing a much better job in siting, design, and operations. We have some of the finest landfills in the world. Without real financial assurance, however, they are ticking time bombs.

6. Newspaper/Richmond Times Dispatch (September 18, 1998):

Governor Gilmore, responding to growing alarms over massive imports of garbage to Virginia, yesterday vowed that he will act to prevent the state from becoming “the trash capital of the world.” Gilmore’s pledge came just hours before New York City awarded a huge waste-disposal contract to a company that operates four large landfills in Virginia. Waste Management Inc. won the $133.3 million contract to handle 2,400 tons of garbage per day from Brooklyn. New York City, which is seeking to close its massive Fresh Kills Landfill on Staten Island, is already the biggest exporter of trash to Virginia.

State regulations are needed, he declared, to control the politically strong waste management industry. “We’re going to take some action,” Gilmore said. “I won’t take the back seat to anybody.” Waste Management spokeswoman Christine Meket said that the large landfill companies were invited into Virginia to help localities deal with the

problem of small, leaking, local landfills. The reason they exist in the first place was to solve a local environmental problem. And while the companies cleaned up the local dumps and replaced them with expensive, high-tech landfills that meet stringent environmental regulations, Meket said, the localities found the commerce in out-of-state trash to be a lucrative source of revenue. We need a certain volume of waste to make these landfills economic. The U.S. Constitution bars states from restricting interstate commerce. Options available include: stepping up inspections of waste haulers and limiting or freezing the number of new landfills, ensuring that private corporations have the cash for cleanups as well as extending firms' responsibilities after a closure, limiting the routes and methods of transports of waste. Waste Management Inc., headquartered in Houston, could send New York City's trash to nine sites, including its four landfills in Virginia, in Amelia, Charles City, Gloucester and King George counties. The Virginia Waste Industries Association supports reasonable measures to protect public health. There's no incentive for private companies not to do things correctly.

7. Newsletter/Waste News (September 14, 1998):

Pennsylvania Governor Thomas Ridge is asking legislators to adopt a get-tough strategy on pending landfill expansions in the state, including a three-year freeze on new permits. The Governor's proposal would double the state's inspection schedule for waste haulers, would add a new transporter fee program, and would restrict the state to approvals for no more than 8 years of disposal capacity. The state currently has 12 years of capacity left. The state has already approved 120,000 tons per day of capacity at landfills and incinerators of which only 70,000 tons are utilized. There is currently 50,000 tons per day of waste disposal capacity that is unused. The Governor's proposal does not effect that currently permitted disposal capacity. Landfill capacity is predicted on a site's life expectancy, which depends on the average daily volume being landfilled.

8. Newsletter/WasteNews (September 7, 1998):

Word that Waste Management Inc., could triple daily volume (to more than 10,000 tons per day) at the Brambles landfill spread quickly around Virginia. The four-year-old landfill, near Waverly, takes in about 3,500 tons daily. Much of the additional waste that would be destined for Brambles could come from Northeast markets, especially New York City, which faces the closure of its giant Fresh Kills landfill in 2001. Waste Management has won a long-term contract to dispose of about 12,000 tons of garbage dumped at Fresh Kills every day. Waste Management now ships 1,750 tons of New York City trash daily to Brambles. That helped make Brambles the top destination in Virginia for out-of-state trash, with more than 860,000 tons in 1997. Brambles is especially appealing to Waste Management because the landfill has no limit on daily volume or hours of operation. The capacity at the Brambles site is estimated at 200 million tons. An increase in daily volume as proposed would add about 2 million tons annually of out-of-state trash into Virginia landfills.

Virginia holds the dubious distinction of being the second biggest waste importer in the country, trailing only Pennsylvania. Nearly 3 million tons of trash from other states came into Virginia by truck, rail and barge during 1997. One state senator is seeking a feasibility study on restricting out-of-state garbage.

Brambles is permitted as a high-volume, regional landfill. Officials in Sussex County, where the landfill is located, would like to see an increase in disposal volume. The county stands to gain if volume jumps. An amended contract signed in June gives the county about $10.8 million through 2002, plus an additional $1 per ton when daily volume exceeds 5,025 tons. Starting in 2003, the county's host fee will be a flat $3 per ton. There is nothing the county can do to block an operator from ramping up volume and bringing in outside trash as long as all regulations are followed. There never have been any compliance problems at the landfill, and safeguards are in place. About $9 million in fees already paid to the county have helped to build a new courthouse and new sewer and water plants.

9. Newsletter/Waste News (August 10, 1998):

The District of Columbia is expected to sign a contract under which Urban Services will haul off an estimated 203,000 tons annually of mostly residential waste for $31.34 per ton. Urban Services intends to transport D.C.'s garbage to the Prince William County, VA, landfill, ending a 25-year garbage hauling relationship between the district and neighboring Fairfax County, VA. Fairfax County began landfilling the district's trash in 1972. When the county opened a waste-to-energy incinerator in 1990, Fairfax County officials factored D.C.'s trash in to help rationalize the project over the long term. Fairfax County faces losing several million dollars annually in revenue from the district, a loss figure that could soar higher if the county ultimately is forced to pay penalties to the incinerator operator for failure to provide a minimum level of burnable material. To attract more trash from the regional market, Fairfax County recently dropped its standard per-ton tipping fee to $36 from $45. Last year, the county burned about 1 million tons of trash, including material brought in from 20 regional haulers. The county hopes to attract material from the spot market to make up the difference from the loss of D.C. trash and to utilize their new excess capacity.

10. Newsletter/Waste News (July 20, 1998):

Prince William County, VA. - What is the least offensive way to make up a shortfall in waste revenues? Luring out-of-state trash or creating a user fee. The loss of flow control in the county after the U.S. Supreme Court struck down a waste-designation ordinance in 1994 has led to a regional scramble for waste volume in the Washington area. Under the waste importation option, competitive rates would be established to lure up to 2,500 tons of waste per day from markets as far away as New York. The plan would make the landfill the highest volume in the Washington region. This plan would result in initial revenues from all sources of about $13 million per year that would level out to $12 million per year. If the landfill only accepts trash from within its own borders, the site's capacity could extend until 2050. By pursuing up to 2,500 tons per day of trash from other areas for the life of the landfill, the disposal site would need to close around 2017. The big trade-off of importing is truck traffic vs. the loss of landfill life. A user fee of up to $70 per household and a variable rate for businesses based on size would result in $11 million in revenues from all sources. The county wants to keep control of its destiny to a certain extent and to keep ownership of the landfill.

11. Press Release/Pennsylvania (September 9, 1998):

Governor Ridge urged the Legislature to impose a three-year freeze on the issuance of any landfill permits. The Governor's proposal also called for a cap on waste disposal capacity - how much landfills can hold. He said his administration would double its surprise inspections of waste trucks. He also called for a new "waste transporter" fee -- from $1,500 to $5,000, depending on truck size -- to help pay for inspections and other enforcement. The administration estimated that it would generate $7.5 million a year.

Under Ridge's proposal, any application for new landfills or expansions now pending -- there are 23 -- would not be acted upon. Ridge acknowledged that his proposal was not intended to affect out-of-state trash dumped in Pennsylvania. The U.S. Supreme Court has ruled that trash is interstate commerce, which can be regulated only federally. So, unless Congress acts, the state can't restrict trash that flows across its borders. The average waste volume Pennsylvania landfills accept each day is approximately 70,000 tons. The Solid Waste Management Act allows the Governor to unilaterally reduce the average daily trash limits throughout Pennsylvania, which would directly reduce the out-of-state volume.

12. Press Release/South Jersey - Inquirer Harrisburg Bureau (September 9, 1998):

Governor Ridge called for a three-year freeze on new landfill permits and a cap on the state's available landfill space. His plan would not stem the flow of out-of-state trash being dumped in Pennsylvania. Only federal legislation can give states the authority needed to make their own decisions on waste imports. "There are too many landfills," he said. "And there are too many trash trucks on our highways. And people have too little say-so when someone wants to build a landfill in their community. Today, we say: No more."

The industry is currently permitted to take in more than 117,000 tons a day. They need no further approval to take 40,000 tons a day than they do today. Ridge wants a cap on the amount of landfill space the state can approve. The Department of Environmental Protection could not approve more than eight years of waste-disposal capacity under his plan...the state currently has about 12 years of capacity.

13. Press Release/NEPA News - Scranton, Pa. (September 9, 1998):

Trash trucks routinely travel through Pennsylvania leaking leachate. And often overweight trucks get past landfill operators. Truck inspections take place no more than once a month, and even doubling them, as the Governor suggests, is not enough. Under the Ridge Proposal, DEP could not approve more disposal capacity than the eight years of capacity that are reasonable needed. The state has about 12 years of existing capacity.

Tractor-trailers hauling waste make more than 600,000 trips on Pennsylvania roads each year. Inspections show that a disturbingly high 25 percent or more of waste trucks fail to comply with basic environmental and safety regulations, in spite of repeated fines. The Governor wants such local issues as traffic, odor problems, litter and host-benefit fees settled through host-community agreements before DEP issues environmental permits for municipal and commercial residual-waste-disposal facilities.

14. Press Release/Pennsylvania (September 8, 1998):

Governor proposes legislation to impose freeze on landfill permits, put permanent cap on waste disposal capacity and directs DEP to double the number of inspections of waste trucks on interstates. Governor Ridge called on the General Assembly to pass legislation to impose a three-year freeze on new permits for municipal waste landfills and to place a permanent cap on the amount of waste-disposal capacity that can be approved. The Governor's plan for Pennsylvania to get tougher on trash also would more strictly regulate waste trucks, and would double the state's surprise inspections of waste haulers. And it would make local officials true partners through host community agreements. Under his disposal cap proposal, DEP could not approve more waste disposal capacity than the eight years of capacity that is reasonably needed. The state currently has about 12 years of capacity. Under the new law, waste haulers operating in Pennsylvania would be more strictly regulated and repeat offenders would not be allowed to operate in the state. A new waste transporter fee of up to $5,000 per year per waste truck would be applied to waste trucks of 56,000 pounds gross vehicle weight or more. This fee would go to support the waste-compliance and inspection programs. Pennsylvania would require local issues like traffic, odor problems, litter and host benefit fees be settled through host community agreements before DEP issues environmental permits for municipal and commercial residual waste disposal facilities.

15. Report/Solid Waste Managed in Virginia - Fourth Quarter 1997 - Commonwealth of Virginia - DEQ:

Quantities of solid waste that are landfilled or are incinerated in energy recovery facilities form the majority of the wastes managed in the state. The overwhelming majority of out-of-state wastes come from New York and the two neighboring jurisdictions of Maryland and the District of Columbia. Virginia received 2,688,821.66 tons on municipal waste in the Fourth Quarter of 1997. Of this amount, 1,885,306.12 tons were landfilled and 266,715.67 tons were sent off site.

16. Report: Municipal Solid Waste Disposal Trends - 1996 Update by Edward W. Repa, Ph. D. And Allen Blakey, Environmental Industry Association:

In the early 1970's, the number of active municipal solid waste (MSW) landfills in the U.S. was estimated to be about 20,000. In 1986, the U.S. EPA estimated that some 6,034 active MSW landfills existed and that landfill numbers were expected to decline by more than 2,000 by 1992. (It was estimated that Virginia had 328 landfills in 1988, 134 in 1991, and 74 in 1995.) Based on information gleaned from the data sets, the number of landfills in the U.S. has declined significantly over the last seven years. Such a dramatic change in the number of landfills in the U.S. over the last seven years is primarily attributed to the promulgation of the federal RCRA part 258 criteria and their implementation in the states. The majority of the states reported significant closures of MSW landfills once Subtitle "D" criteria, or the states equivalent became effective. Virginia had less than 5 years of disposal capacity in 1986 and 1991. In 1995 that capacity had grown to greater than 10 years.

Massachusetts and New Jersey have less than five years of remaining disposal capacity as part of a deliberate state policy. Massachusetts has a policy of limiting

development of "excess disposal capacity" until the goals of source reduction, waste diversion, and incineration are met. According to the 1995 state master plan, if the volume of MSW increases in the future and threatens capacity, the state would increase permitted tonnage limits or take other steps to handle the extra volume. New Jersey permits facilities only in five-year increments. Therefore, the state theoretically could develop additional capacity if it is needed.

The National average tipping fee in 1995 at the 539 private MSW landfills was $32.19 per ton, up 22% from the 1992 survey. The average landfill tipping fee for the Mid-Atlantic states in 1995 was $45.68 per ton. Only the Northeast states had a higher average fee, $73.17. MSW disposal capacity in the U.S. is greater than it has been for a decade, even as the total number of MSW landfills has declined. Federal MSW landfill regulations issued in 1991 have changed the nature of the landfill business, resulting in a wide scale phase-out and shutdown of facilities. The federal rules also encouraged the building of larger landfills (i.e., greater capacity) to achieve economies of scale to deal with the high cost of complying with the new environmental standards. Many states enacted disposal capacity requirements as part of broader waste management laws. The capacity requirements were typically expressed in years of disposal capacity that a county or solid waste management district in the state was required to ensure. Commercial waste management companies and local governments - motivated by state and local policies, as well as business opportunities - built new MSW landfills or incinerators and launched new residential, commercial, and institutional recycling programs. New MSW landfills added to disposal capacity while recycling diverted waste from disposal, which also helped boost capacity.

17. Report/Interstate Movement - 1995 Update by Edward W. Repa:

In 1995, the largest exporter of solid waste was New York with 3.8 million tons (nearly 22% of total exports), followed by New Jersey with 2 million tons (nearly 12% of total exports). In 1995, the largest importing state was Pennsylvania, with 6.7 million tons. Pennsylvania's imports were more than one-fourth (27%) of all the solid waste imported. The second largest importing state was Virginia, with 1.7 million tons. The 1995 data showed that almost all states imported and exported some portion of their solid waste for disposal in another state. Much of the interstate movement of solid waste occurred across common borders (i.e., neighboring states). Numerous reasons exist for the interdependence among neighboring states. One major reason is the availability of local and cost-effective disposal capacity. Another reason is the ease of transportation from the waste's generation point to a disposal location. Another major reason for the interdependence is the growing trend toward the regionalization and consolidation of the solid waste management industry. Larger waste management firms tend to be vertically integrated, offering recycling, collection, and disposal capabilities. In order for these companies to provide cost-effective service to the public, they cannot recognize state lines as barriers. Waste collected by a company may be disposed in another state at a facility owned by that same company. Waste management company operations are similar to other corporation's operations because they compete in the open market. The interdependence in solid waste disposal will continue in the future because of state and federal regulatory programs, such as the Resource Conservation and Recovery Act's

(RCRA) Subtitle "D", which has been implemented over the past few years. This regulatory program established strict engineering and operating standards for disposal facilities that effectively protect public health and the environment. As a result, numerous older facilities closed because they could not afford the added costs of meeting the environmental protection requirements. The trend is toward the construction of larger (i.e., higher volume) and fewer landfills that can take advantage of the economies of scale, while still protecting public health and the environment. To support these larger-volume facilities, a facility's wasteshed must be larger than in the past. These wastesheds cover larger geographical areas or population centers and invariably include multi-state regions.

In addition to the past closure of landfills because of environmental trends, more waste may move away from the point of generation to distant disposal sites in the future. One reason is that the solid waste is invited in. Some communities closely evaluated the economic benefits of hosting a disposal facility that will accept some out-of-state solid waste and concluded that a local facility built to tough environmental standards can represent an important industrial development activity. Another reason may be the planned closure of New York City's Fresh Kills landfill by Dec 31, 2001. Fresh Kills is the sole repository of New York City's residential waste. Closure of the Staten Island facility will divert as much as 13,000 tons per day (tpd) of solid waste to other disposal facilities, both inside and outside the state.

In 1995, Virginia imported waste from Delaware, the District of Columbia, Maryland, New Jersey, New York, and Pennsylvania. In the same year, Virginia exported waste to Georgia, Kentucky, Maryland, Michigan, North Carolina, Pennsylvania, Tennessee, and West Virginia.

18. Report/Solid Waste Disposal in the United States-Rate Regulation is Not the Answer by Professor Neil W. Hamilton and Dr. Robert Wasserstrom, National Solid Wastes Management Association (1989):

Landfill costs are increasing-often dramatically- as capacity is consumed, waste generation continues to grow, and collected waste must be transported greater distances to the remaining disposal sites. Added to that is the cost of meeting more stringent federal and state landfill construction and operation standards for environmental protection. Several state legislatures have enacted or proposed measures which threaten to undermine the integrated waste management approach undertaken by most State waste management agencies. State legislators are sometimes tempted to impose rate regulations on waste disposal and hauling companies. Most of these actions are taken because: as the number of private landfills within a specific region declines, officials become worried about decreased competition and potentially higher prices; utility regulation seems to offer an easy response to allegations of misconduct or anti-competitive behavior among private firms; state or local officials adopt solid waste management plans that in effect exclude refuse from other jurisdictions, which in essence have the effect of circumventing the Supreme Court's decision (Pennsylvania v. New Jersey, 1978) barring restrictions on the interstate flow of solid waste. Instead of imposing disruptive and short-sighted regulations, public officials should consider these important issues: landfill operators around the country are decreasing in number mostly as a result of federal and state

environmental policy-fewer, larger companies are emerging--companies with the resources to comply with present and future regulations; the current scarcity of landfill space and the rise in tipping fees reflect increasing political concern and tighter environmental controls--these controls have created broader, regional markets for environmental protection that exclude marginal or unsafe facilities; rising prices also reflect an "artificial shortage" brought about by the reluctance of local officials to allow additional landfill construction--in many states, this reluctance now amounts to a *de facto* moratorium on expanding safe disposal capacity; and, price-fixing by government will keep landfill fees artificially low and will undermine recycling programs--landfill fees should reflect the full expense of building and operating safe facilities.

Americans produce growing amounts of garbage. According to the U.S. EPA, we generate nearly 3.6 lbs of trash apiece every day--almost 160 million tons per year. Where will this garbage go? Clearly, a major share will be sent to landfills, which today receive 75 percent of the country's rubbish.

19. Report/The Cost of Flow Control - National Economic Research Associates (May 3, 1995):

Flow control refers to local laws by which local governments direct that the municipal solid waste (including residential, commercial, and industrial) generated within their jurisdictions be disposed of and/or processed at designated facilities. Local governments had been imposing such controls since at least the early 1970's, principally for two reasons--to protect sizable investments in waste facilities and to generate fee revenues to finance solid waste programs. Many local governments built and/or financed large scale waste management facilities which require substantial minimum waste flows to cover costs. Congress is currently considering legislation to enable local governments to designate the destination of municipal solid waste generated within their jurisdictions--often referred to as flow control--in response to a recent U.S. Supreme Court decision, *C.A. Carbone, Inc. V. Town of Clarkstown, New York* which effectively prevents local governments from imposing such controls. Flow control add approximately $10 per ton or 33 percent to the average landfill disposal charge (tip fee) nationwide. Flow control adds approximately $11.50 per ton or 23% to the average incinerator charge (tip fee) nationwide. Flow control adds approximately $14 per ton or 33 percent to the average transfer station disposal charge (tip fee) nationwide. Flow control is generally made necessary precisely because waste would otherwise be shipped elsewhere to save on disposal costs. Consequently, unless there are benefits associated with flow control which exceeds the higher disposal costs, flow control cannot be justified on economic grounds.

20. Report: Congressional Findings on Solid Waste/Section 6901 (01/16/96):

The Congress finds with respect to solid waste: that the continuing technological programs and improvements in methods of manufacture, packaging, and marketing of consumer products has resulted in an ever-mounting increase, and change in the characteristics, of the mass material discarded by the purchaser of such products; that the economic and population growth of our Nation, and the improvements in the standard of

living enjoyed by our population, have required increased industrial production to meet our needs, and have made necessary the demolition of old buildings, the construction of new buildings, and the provision of highways and other avenues of transportation, which, together with related industrial, commercial, and agricultural operations, have resulted in a rising tide of scrap, discarded, and waste materials; that the continuing concentration of our population in expanding metropolitan and other urban areas has presented these communities with serious financial, management, intergovernmental, and technical problems in the disposal of solid wastes resulting from the industrial, commercial, domestic, and other activities carried on in such areas; and, that while the collection and disposal of solid wastes should continue to be primarily the function of the state, regional, and local agencies, the problems of waste disposal as set forth above have become a matter National in scope and in concern and necessitate federal action through financial and technical assistance and leadership in the development, demonstration, and application of new and improved methods and processes to reduce the amount of waste and unsalvageable materials and to provide for proper and economical solid waste disposal practices.

21. Report: Northern Virginia Solid Waste Status Report - 1998 Update/Executive Summary (September 1998):

Accurate and current information on conditions and trends in solid waste management provide policy makers and the public with a sound basis for their recycling, disposal and waste management decisions. It is critical to understand clearly how the various dynamics of waste generation, storage, transportation, and end use/disposal affect how waste is managed in Northern Virginia. And it is important to see how the changing economic and legal contexts of the waste industry affect long term planning for solid waste within the region.

Northern Virginia, one of the Nation's liveliest centers of commerce as measured by job creation, new business formation, residential and commercial construction, and retail sales also has experienced marked increases in waste generation during the past two decades. In 1998, over 1.6 million tons of Municipal Solid Waste (MSW) were generated in the Northern Virginia region.

Local government programs in Northern Virginia incorporate all of the following aspects of the "Waste Management Hierarchy."

A) *Waste Reduction*: Reducing waste at the source is happening at both the commercial and residential levels. However, no reliable overall record keeping presently exists regarding waste prevention and reduction.

B) *Waste Recycling*: Recycling continues strong in the region, especially for those materials that offer higher revenues (e.g., high grade paper, aluminum, etc.) For recovery and reprocessing. Certain types of plastics, glass, low grade types of paper and other special wastes (e.g., oil filters) are more difficult to recover since minimal revenues may not offset the collection and processing costs of these materials. Due to below-market disposal rates there have been various reports that some recyclables are even being landfilled.

C) *Energy Recovery*: There are two waste-to-energy facilities located in the Northern Virginia region. They represent a significant element of Northern Virginia's solid waste management system because they have the capacity to process just under 4,000 tons of waste per day. Increased environmental regulatory retrofit costs required under federal amendments to the Clean Air Act, increase their facility costs making it difficult to compete with landfills. Several jurisdictions are exploring their options of developing a user fee, similar to Montgomery County, Maryland to protect their facility's revenue bond.

D) *Landfilling*: The region operates three public landfills: one in Loudoun County: a second in Prince William County, which recently approved a county-wide solid waste disposal generator fee instead of the current user tipping fee; and a third, the I-95 Facility in Lorton, Fairfax County, which only accepts ash at the monofill. These public landfills (except for the Fairfax ash landfill) have seen a significant drop in their tonnage rates over the last several years due to inexpensive disposal prices in the private sector.

A few private landfill corporations now are attempting to dominate the waste management industry in the short term by capturing the flow of trash in their mega-landfills. These huge sites cannot profit if they are unable to receive several thousand tons of waste each day. As a result, Virginia is the nation's second largest importer of waste, just behind Pennsylvania. It has been estimated that the total capacity for waste in Virginia's private landfills is 300 million tons. As an immediate consequence, private corporations are undercutting local governments' investments into integrated waste management programs by offering low tipping fees that divert waste from the government programs and/or result in competitive lowering of public tipping fees. These government programs are therefore losing revenue that supports curbside recycling programs, composting, household hazardous waste disposal, and public education. In addition, the public sector may be left to deal with serious long-range environmental liabilities associated with these private mega-landfills.

Local governments are faced with a number of serious challenges: potential restrictions on flow control authority which endanger the fiscal stability of their facilities; an increasing domination of the market by a few major private firms; uncertain future obligations for long-term consequences of private landfill failures; and the costs of complying with State and federal environmental legislation/regulation, to name a few.

The need for regional cooperation is increasing as budget resources decrease. By pooling resources, local governments can share in pursuing some common regional interests, such as public education, waste prevention, recycling market development, and future infrastructure planning. As local governments plan for the future, their options could increase as they work together.

The Northern Virginia Planning District Commission and the Northern Virginia

Waste Management Board continue fostering regional cooperation by exploring "cooperative marketing" and price/contract tracking; providing timely information on innovative and current techniques; improving increased integrated waste management through public/private partnerships (e.g., phone book recycling, "buy recycled" programs); increasing government purchasing of recycled products through cooperative purchasing; conducting research and analysis; and providing technical assistance and technology transfer. Integrated waste management on a regional level works because the programs complement each other, and because it creates a spirit of cooperation in working towards the best management of our waste with the goal of environmental protection and resource conservation.

22. Site Visit - Charles City County Landfill/Lee Wilson, Waste Management, Inc. And Heidi Abbott, Virginia Waste Industries Association:

The landfill is located in Charles City County, Virginia, approximately 20 miles southeast of Richmond. The site contains 934 acres, 289 acres of which represent the landfills footprint for waste disposal. The site has the potential for 45 million cubic yards of material, with a capacity of 20 to 45 years depending on the volume of the waste stream. The site has a permitted capacity of 6,000 tons per day quarterly average and a 6,900 tons per day maximum. Currently the site is accepting approximately 2,000 tons of waste per day. This is a result of increased competition and decreased activities in the region. The facility operates 6 days per week (Monday - Saturday).

Of the waste currently being landfilled at the site, 1/2 of it is from in-state and 1/2 is from out-of-state. The bulk of the out-of-state waste comes from New York City (300 tons per day). The bulk of the in-state wastes come from Richmond (600 tons per day). Acceptable wastes at the site include: municipal solid waste, construction and demolition waste and approved non-hazardous special wastes, such as; sludge, contaminated soils, ash and residuals. Unacceptable wastes include hazardous waste and wastes containing free liquids and asbestos.

The facility has a double composite liner system which exceeds present Virginia Department of Waste Management and Subtitle "D" regulations. The primary liner system is 60 millimeter (mil) HDPE geomembrane above a clay bentonite matting. A 60 mil HDPE secondary liner is underlain with compacted clay. Primary and secondary collection systems direct leachate to an on-site storage tank. Leachate (approximately 2 1/2 million gallons per year) is treated at a local Publicly Owned Treatment Works (POTW) or is recirculated on-site. The site has 14 groundwater monitoring wells, which are sampled quarterly. Truck, rail and marine facilities are currently available for waste access/transport to the site.

Part VI: Virginia as a Site for the Landfilling of Municipal Solid Waste

As noted above, Virginia is currently the number two importer of municipal solid waste in the nation. Landfills in Virginia received approximately 2,800,000 tons of municipal solid waste in 1997. Table 5 compares Virginia's volume of solid waste imports with those of other states in the region. Virginia exported approximately 100,000 tons of municipal solid waste in 1997. Table 6 presents a comparison of Virginia with other states in the region as exporters of

municipal solid waste. In addition, Virginia imports approximately 358.142 tons of specialized hazardous waste while exporting approximately 56,940.623 tons of hazardous waste to other states. Table 7 shows the quantities in tons of the hazardous waste imports and exports from and to a number of surrounding states in the region in 1997.

Virginia's current status as the number two importer of municipal solid waste can be attributed to the following factors:

(A) Virginia's tipping fees[16] for landfilling of municipal solid waste are among the lowest in the region. Figure 3 presents a regional comparison of tipping fees.[17] Table 8 identifies tipping fees in the Northern Virginia area.[18] These fees are set by the private company or local management authority responsible for the landfill.

(B) Landfills in Virginia have been approved with two tiers of capacity. Under the initial permit process, known as the "part A" permit, a facility applies for general authority to site a landfill covering a certain acreage in a particular place. If the land meets the qualifications necessary for use as a landfill, the facility may apply for a "Part B" permit. To obtain a "Part B" permit, a facility must develop an operating plan. The operating plan may include only part of the land permitted for use. As the facility seeks to use additional permitted land, it must apply for permit amendments to obtain approval for an operating plan. Based on data collected in 1997, fully permitted capacity amounts to approximately 26 years.

(C) Virginia is accessible by road, rail and water. This infrastructure facilitates the transportation of commodities, including solid waste, to and from the state.

(D) Land in Virginia is generally less expensive than in other states in the region. Virginia's lower priced rural lands are attractive as sites for landfills because they meet the geotechnical and hydrogeologic conditions of the regulatory criteria for solid waste landfills.

(E) Actions taken by other states in the region to limit the volume of waste handled and disposed of in the state.

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[16]Fees charged by landfill operators for the disposal of waste, usually assessed on a per ton basis.

[17] Solid Waste Digest, July 1998

[18]Northern Virginia Solid Waste Status Report 1998 Update, Final Draft

(F) Incineration is another form of disposal. It requires less land than landfilling, but it is more expensive. The expense makes it difficult for incinerators built to burn solid waste for the purpose of producing electricity to get contracts for waste disposal. This is true for the Northern Virginia incinerators and for incinerator facilities in New Jersey. There are two waste-to-energy facilities located in the Northern Virginia area. They represent a significant element of Northern Virginia's solid waste management system because they have the capacity to process just under 4,000 tons of waste per day.[19] However, they are unable to attract the waste to their site since their tipping fees are considerably higher than the area's average landfilling fees. Figure 4 illustrates the tipping fees for incineration and waste-to-energy facilities in the region.

[19]Northern Virginia Solid Waste Status Report 1998 Update, Final Draft

Table 5: Regional Imports of Municipal Solid Waste, 1997 (in tons)[20]

STATE	QUANTITY IMPORTED
Maine	120,000
New Hampshire	817,000
Vermont	0
Rhode Island	0
Massachusetts	181,634
Connecticut	451,882
New York	159,000
New Jersey	650,000
Delaware	0
Pennsylvania	6,340,891
Maryland	0
West Virginia	254,460
Virginia	2,800,000
North Carolina	103,510
South Carolina	453,606
Kentucky	507,664
Tennessee	165,619
TOTALS	**13,005,266**

Virginia imports of 2,800,000 tons represent approximately 22 percent of the totals for the region.

[20] CRS Report for Congress - Interstate Shipment of Municipal Solid Waste: 1998 Update

Table 6: Regional Exports of Municipal Solid Waste, 1997 (in tons)[21]

STATE	QUANTITY EXPORTED
Maine	62,000
New Hampshire	126,000
Vermont	200,000
Rhode Island	112,000
Massachusetts	502,229
Connecticut	261,482
New York	3,774,000
New Jersey	2,380,683
Delaware	258,860
Pennsylvania	300,000
Maryland	1,832,000
West Virginia	215,000
Virginia	100,000
North Carolina	326,960
South Carolina	0
Kentucky	308,372
Tennessee	4,907
TOTALS	**10,764,493**

Virginia's exports of 100,000 tons of municipal solid waste represents approximately one percent of the region's total exports.

[21] CRS Report for Congress - Interstate Shipment of Municipal Solid Waste: 1998 Update

Figure 3

Tipping Fees in Various Eastern States

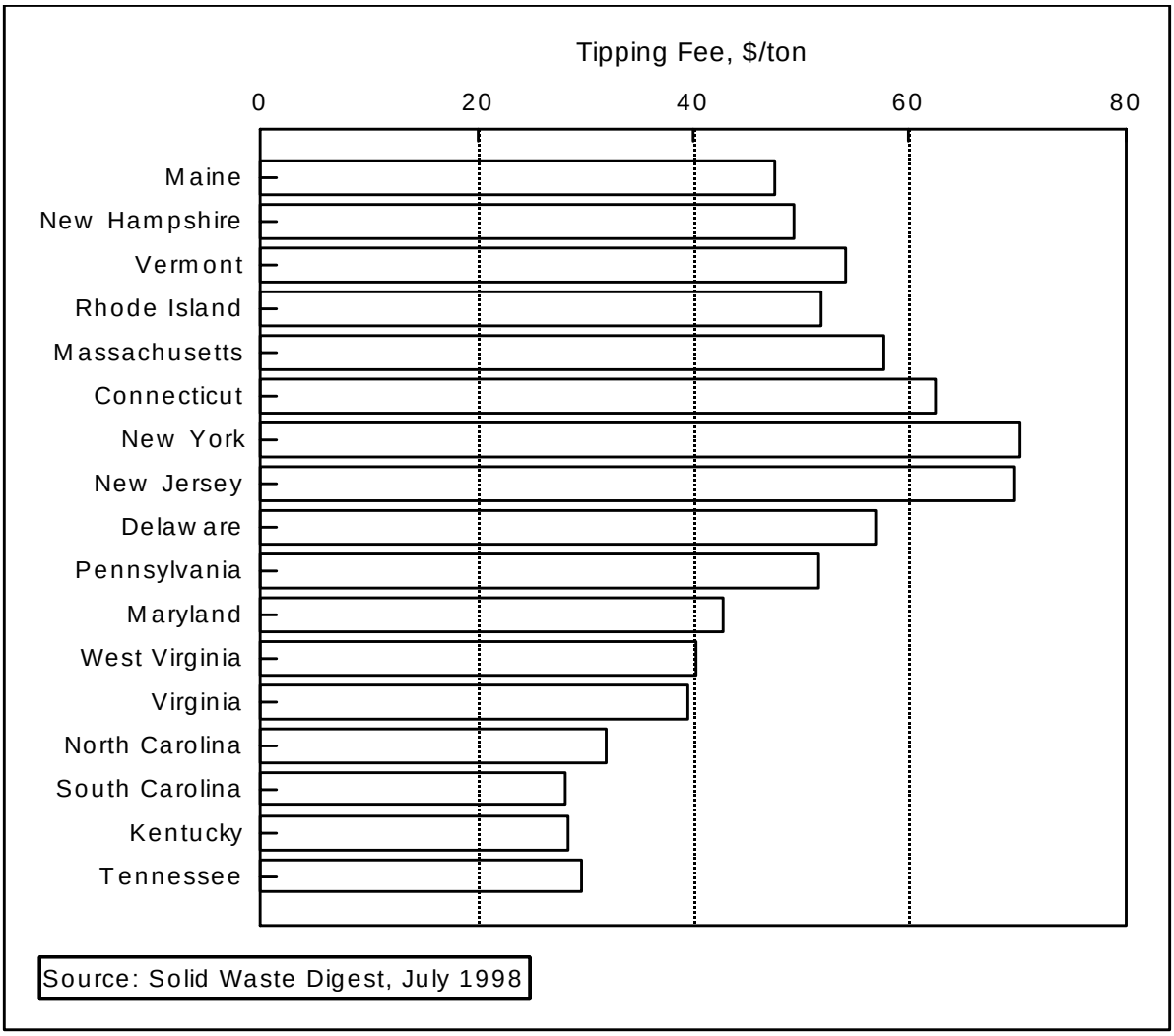


Table 7

Virginia's Hazardous Waste Imports From and Exports to Other States, By State

(Quantities in Tons)

STATE	IMPORTED	EXPORTED	NET IMP-EXP
Alabama	.000	986.612	-986.612
Arkansas	.000	674.347	-674.347
Arizona	.000	5.658	-5.658
California	.000	21.797	-21.797
Connecticut	.000	2,672.871	-2,672.871
District of Columbia	81.035	.000	81.035
Delaware	.000	60.651	-60.651
Florida	.000	472.142	-472.142
Georgia	.00	1,667.270	-1,667.270
Iowa	.000	145.470	-145.470
Idaho	.000	.133	-.133
Illinois	.117	1,195.710	-1,195.593
Indiana	.000	340.343	-340.343
Kansas	.000	.005	-.005
Kentucky	.000	995.700	-995.700
Louisiana	.000	2.600	-2.600
Massachusetts	.000	214.451	-214.451
Maryland	208.718	1,625.429	-1,416.710
Michigan	.000	6,020.855	-6,020.855
Minnesota	.000	4.626	-4.626
North Carolina	59.495	3,290.386	-3,230.891
North Dakota	.000	239.660	-239.660
New Jersey	.000	6,931.183	-6,931.183
New York	.000	230.341	-230.341
Ohio	.000	10,749.812	-10,749.812

Pennsylvania	.000	2,411.614	-2411.614
Rhode Island	.000	9.259	-9.259
South Carolina	.000	14,345.072	-14,345.072
Tennessee	.000	690.704	-690.704
Texas	.000	931.169	-931.169
Utah	.000	.289	-.289
Wisconsin	.000	4.463	-4.463
West Virginia	8.776	.000	8.776
TOTALS	**358.142**	**56,940.623**	**-56,582.481**

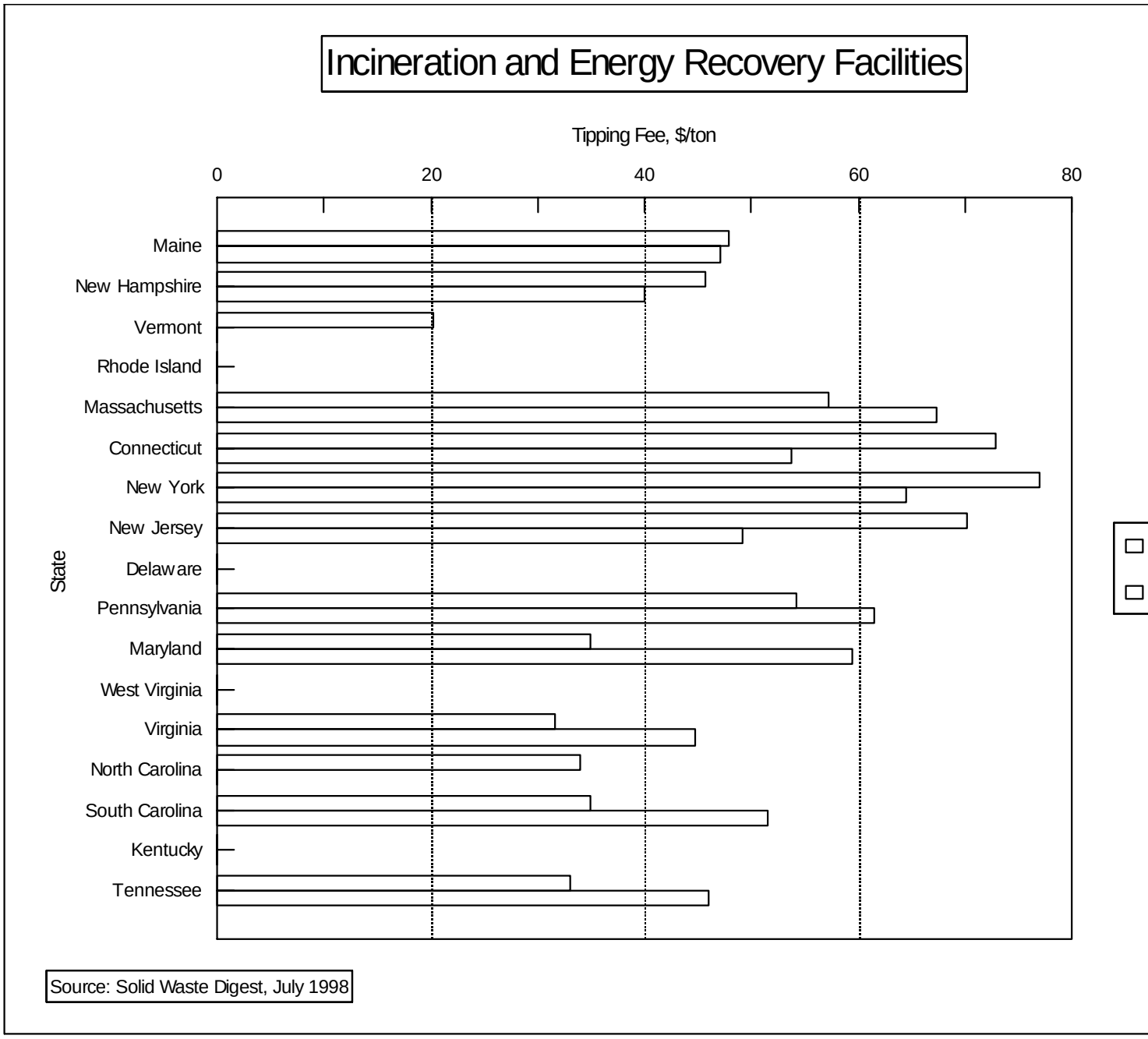
Source: Biennial Reporting System: BRVA Database ID: VAS97: 1997 Data

Table 8
Solid Waste Tipping Fees
in the Northern Virginia Region[22]

Jurisdiction/Facility	**Tipping Fee FY 1996 (per ton)**	**Tipping Fee FY 1997 (per ton)**	**Tipping Fee FY 1998 (per ton)**	**Tipping Fee FY 1999 (per ton)**
Alexandria/Arlington E/RRF	$44.26	$45.05	$45.05	$45.05
Arlington County	$44.26	$45.05	$45.05	$45.05
District of Columbia	$64.39	$64.39	$64.39	$64.39
Fairfax County: E/RRF In-County Waste	$48.00	$45.00	$45.00	$45.00
Loudoun County	$55.00	$55.00	$55.00	$55.00
Prince William County	$49.00	$45.00	$45.00	$45.00
Averages	**$50.82**	**$56.58**	**$56.58**	**$56.58**

[22]Northern Virginia Solid Waste Status Report 1998 Update/Based on 1997 and 1998 data and estimates.

Figure 4



Tipping Fees for Regional Incineration and Waste-to-Energy Facilities

Part VII: The "Commerce Clause" of the United States Constitution

A. The "Commerce Clause"

The following materials were excerpted from a 1996 issue of the Villanova Environmental Law Journal discussing "The Flow Control of Solid Waste and the Commerce Clause: Carbone and its Progeny.

> *"For well over a century, the Commerce Clause of the United States Constitution has served as the basis for challenges to local laws that discriminate against the import or export of commodities. Courts have recently been asked to determine the legality of flow control measures. Flow control laws and regulations seek to ensure that solid waste or recyclables are directed to one or more designated facilities. The Commerce Clause provides that Congress shall have the power to regulate Commerce with foreign Nations, and among several states, and with Indian tribes. Under the Commerce Clause, states and localities are barred from imposing or enforcing measures that discriminate against, or unduly impede protected commerce. It is now well-established that the transportation of waste is a protected activity under the Commerce Clause. A state or local measure that discriminates against interstate commerce either on its face or in practical effect is subject to a strict standard--the discriminatory measure can survive only if it serves a legitimate local purpose and is the least discriminatory alternative to achieve local goals. The United States Supreme Court has also determined that a state or local measure that demonstrates simple economic protectionism is subject to a virtually per se rule of invalidity. Even a measure that does not explicitly or in practical effect discriminate, or fails to evidence economic protectionism, may be invalid if the burden imposed on [interstate] commerce is clearly excessive in relation to the putative local benefits."*

B. The "Commerce Clause" and Virginia

At the present time, none of the regulatory provisions governing solid waste disposal administered by the Commonwealth is under challenge on the basis of the Commerce Clause of the U.S. Constitution. There appears to be interest in attempting to control the volume of solid waste handled at facilities in Virginia. The U.S. Senate passed a bill regarding interstate transportation of municipal solid waste that would have applied to facilities built after enactment of the legislation, but not to existing facilities. However, the Congress has adjourned, and it is not likely to revisit the issue of interstate control of the flow of solid waste this session. Further, it would appear that the bill would apply only to controlling out-of-state waste at facilities built after enactment and not those currently in existence.

Any adjustments to the Commonwealth's statutory and regulatory scheme must be accomplished with a blind eye to the source of waste entering out landfills in order to comply with the Commerce Clause. That is not to say that measures having the incidental effect of making it less economically viable to bring out-of-state waste into the Commonwealth cannot be taken, so long as those measures apply equally to in-state and out-of-state waste. Transportation costs and regulatory fees affect decisions regarding where to send solid waste for disposal. The further away the waste is from a landfill, the higher the transportation and incidental costs of moving the waste.

Any fees charged to solid waste facilities must apply equally to all facilities, regardless of

whether a facility accepts out-of-state waste. In establishing the basis for some of these fees, it is permissible to take into account the effect of such operations on the public health and safety so long as the assessment of fees is not overtly discriminatory or targeted against out-of-state waste. Larger waste facility operators and transporters cumulatively will pay a greater amount of such fees, which could effect the economic viability of using facilities within the Commonwealth. On the other hand, an increase in fees could have a greater incremental impact on the smaller municipal and county landfills than on the larger commercial operations. If this holds true, the impact could lead to increased costs to consumers for solid waste disposal and, possibly, more localities contracting with private entities to handle their solid waste.

C: Supreme Court and Selected 4th Circuit Court of Appeals Decisions

Several pertinent Supreme Court and 4th Circuit Court of Appeals decisions are summarized in this section. Solid waste management, particularly by the individual states, is profoundly impacted by these representative decisions. As the cases show, local regulation of waste generated outside the State is severely limited, if not impossible under current law. Only Congress has the authority to regulate the interstate flow of waste. The "Conclusion" analyzes the impact of these decisions on solid waste management options.

1. Supreme Court Decisions:

a. *City of Philadelphia v. New Jersey,* 437 U.S. 617 (1978):

New Jersey passed a law, which took effect in 1974, prohibiting the importation of most solid or liquid waste originating or collected outside the territorial limits of the state. The Court rejected the state court's conclusion that solid waste is not an article of commerce. Rather, the Court took the position that States are not free from constitutional scrutiny when they restrict movement of solid waste and that such a law falls squarely within the prohibition of the Commerce Clause against state regulation of such commerce. Only Congress has the power to regulate interstate commerce.

b. *Fort Gratiot Sanitary Landfill, Inc. V. Michigan Dep't of Natural Resource,* 504 U.S. 353 (1992):

The "Waste Import Restrictions of Michigan's Solid Waste Management Act" provided that solid waste originating outside a county in which facilities were located could not be accepted for disposal unless explicitly authorized by the receiving county's management plan. St. Clair County's plan did not authorize the acceptance of out-of-county waste. After the county rejected a local landfill operator's application to accept out-of-state waste, the operator filed an action challenging the law. Michigan, among other things, argued that the law was a comprehensive health and safety regulation rather than "economic protectionism." The Supreme Court, relying on *Philadelphia*, held the Act violated the Commerce Clause. In so holding, the Court did not accept the assertion that the law could be distinguished from *Philadelphia* because waste from other counties was treated no differently than waste from other states.

c. *Chemical Waste Management, Inc. V. Hunt,* 504 U.S. 334 (1992):

Alabama imposed an additional hazardous waste fee on all hazardous waste generated out-of-state and disposed of within the state. An operator of a commercial hazardous waste facility brought suit challenging the fee. The State argued that the fee was necessary to protect the health and safety of its citizens, for conservation of the environment and natural resources and to reduce the flow of such waste on the State's highways. The Supreme Court held the fee invalid. The Court opined that the State could not explain why it targeted only interstate hazardous waste to meet its stated goals; the record in the case established that the hazardous waste at issue in this case is the same regardless of its point of origin.

d. *C & A Carbone, Inc. V. Town of Clarkstown, New York,* 511 U.S. 383 (1994):

Clarkstown, New York, had a "solid waste flow control" ordinance requiring all nonhazardous waste to be deposited and processed at a designated transfer station before leaving the municipality. The town's purpose for enacting the ordinance was to retain the processing fees charged at the station to amortize the costs of the facility. The Supreme Court held that the ordinance violated the Commerce Clause because it deprived out-of-state firms access to a local market by preventing everyone, except the favored local operator, from performing the initial processing step. The Court opined that the ordinance regulated interstate commerce, in part, because its economic effects were interstate in reach.

e. *Oregon Waste Sys.. Inc. V. Department of Envtl. Quality,* 511 U.S. 93, 114 S. Ct. 1345, 1349 (1994):

Oregon passed a statute imposing an additional fee of $2.50 per ton, called a "surcharge," on every person disposing of solid waste generated outside the state and disposed of within the State. Oregon argued that the surcharge was necessary to make shippers of such waste pay their fair share of the costs imposed on Oregon by the waste disposal and that Oregon has an interest in spreading the costs of the in-state disposal. The Court rejected both contentions and held that the State proved no legitimate reason to subject waste from out-of-state to the surcharge.

2. Court of Appeals for the Fourth Circuit:

a. *Medical Waste Associate Ltd. Partnership v. Baltimore,* 966 F. 2d 148 (4th Cir. 1992):

Baltimore passed a city ordinance banning out-of-state medical waste from a new incinerator being constructed within the city. The Fourth Circuit upheld the ordinance holding that merely excluding out-of-state waste from a single facility within a region did not necessarily violate the Commerce Clause. Because it did not *per se* violate the Commerce Clause, the court applied the *Pike* balancing test referenced in the *Philadelphia* case finding any impact on commerce to be incidental, particularly noting that other facilities could be built within the city. Finally, the Court also noted that the complaining operator, as a business decision, agreed to the restriction in applying for authority to build the facility.

b. *Environmental Technology Council v. Sierra Club*, 98 F. 3d 774 (4th Cir. 1996):

South Carolina attempted, through a series of executive orders, statutes and one regulation, to limit the amount of hazardous waste generated out-of-state and buried within its borders. Challenged were four measures that (1) would have prevented acceptance of hazardous waste from a state that prohibited treatment of the waste within its jurisdiction or that had not entered into an interstate compact; (2) limited the amount of waste to be accepted, in order to protect health and safety of South Carolina citizens; (3) established quota preferences for in-state waste; and, (4) established a needs test, based on only in-state need, to establish or expand facilities. The Court held that the provisions violated the Commerce Clause and affirmed a lower court's permanent injunction as to all of the challenged provisions.

3. Conclusions:

As stated in *Philadelphia*, the opinions of the Supreme Court through the years have reflected an alertness to "economic isolation" and protectionism, while at the same time recognizing that incidental burdens on interstate commerce may be unavoidable when a State legislates to safeguard the health and safety of its people. Thus, when economic protectionism is effected by state legislation, a virtually *per se* rule of invalidity has been established. The clearest example of such legislation is a law that overtly blocks the flow of interstate commerce (including waste) at a State's borders. But where other legislative objectives are credibly advanced and there is no patent discrimination against interstate trade, the Court has adopted a more flexible approach. That is, where the statute regulates evenhandedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative (commonly accepted) local benefits (the *Pike* balancing testy). The issue then becomes how to balance in-state needs and priorities regarding solid waste disposal without overtly treating waste generated outside the State differently from that generated within the State.