

**Department of Environment and Conservation  
and  
Related Environmental Boards**

**August 1997**

**Arthur A. Hayes, Jr., CPA**  
Director

**Deborah V. Loveless, CPA**  
Assistant Director

**Barbara Cobb**  
**Dena Winningham**  
Audit Managers

**Dean Agouridis**  
**Catherine B. Balthrop, CPA**  
In-Charge Auditors

**R. Mason Ball, CPA**  
**Philip M. DeBusk, J.D.**  
**Jeff Solomon**  
**Kimberly Price-Spears**  
**Greg Spradley**  
**David Wright**  
Staff Auditors

**Jane Russ**  
Editor

August 21, 1997

The Honorable John S. Wilder  
Speaker of the Senate  
The Honorable Jimmy Naifeh  
Speaker of the House of Representatives  
The Honorable Kenneth N. (Pete) Springer, Chair  
Senate Committee on Government Operations  
The Honorable Mike Kernell, Chair  
House Committee on Government Operations  
and  
Members of the General Assembly  
State Capitol  
Nashville, Tennessee 37243

Ladies and Gentlemen:

Transmitted herewith is the performance audit of the Department of Environment and Conservation and five related environmental boards. This audit was conducted pursuant to the requirements of Section 4-29-111, *Tennessee Code Annotated*, the Tennessee Governmental Entity Review Law.

This report is intended to aid the Joint Government Operations Committee in its review to determine whether the department and the boards should be continued, abolished, or restructured.

Very truly yours,

W. R. Snodgrass  
Comptroller of the Treasury

WRS/tp  
96/024

# Audit Highlights

Comptroller of the Treasury

Division of State Audit

Performance Audit  
**Department of Environment and Conservation  
and  
Related Environmental Boards**  
August 1997

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## AUDIT OBJECTIVES

The objectives of this audit were to review the department's and the boards' legislative mandates and the extent to which they have carried out those mandates efficiently and effectively, and to make recommendations that might result in more efficient and effective operation of the department and five related environmental boards (Air Pollution Control Board, Board of Ground Water Management, Petroleum Underground Storage Tank Board, Solid Waste Disposal Control Board, and Water Quality Control Board).

## FINDINGS

### **Central Office Is Slow to Respond to Enforcement Action Requests**

The department's central office has not responded promptly to field office requests for enforcement action against those who continue to violate solid waste and hazardous waste management, water supply, and water pollution control regulations. In 1994, for 118 field office requests for enforcement, the central office took an average of 227 days to issue an enforcement order; in 1995 the average processing time was 200 days (page 14).

### **X-Ray Inspection Process Is Inadequate**

The department's X-ray inspection process does not provide the department, staff operating the X-ray machines, and consumers the assurance that each machine is safe and effective. One-third of the X-ray inspections scheduled by the department were not performed in 1995 (page 19).

### **Regulation of Underground Storage Tanks Is Inadequate**

The department's regulation of petroleum underground storage tanks has provided little incentive for tank owners/operators to prevent and detect operating problems and leaks. Tanks were unlikely to be inspected, particularly for compliance with operating requirements. Under the division's voluntary program, for those tanks inspected, no enforcement action was taken for operating violations if problems were corrected within a reasonable time. In addition, enforcement action was not taken promptly for continuing violations (page 26).

### **Some Divisions Made Limited Use of Case Information to Improve Regulatory Programs**

Central office management of the Divisions of Air Pollution Control, Water Pollution Control, and Solid/Hazardous Waste Management did not appear to be using available information to evaluate and direct field offices and to improve the regulatory programs (page 29).

### **Coordination of Division Enforcement Efforts Could Be Improved**

Although several regulatory divisions may deal with the same individuals and companies while enforcing environmental laws and regulations, department management has not developed formal policies to encourage and facilitate interdivisional cooperation in enforcement efforts. A checklist has been developed which inspectors could use in 25 percent of their routine inspections to identify violations in areas of environmental regulation, but it is not being used (page 32).

### **More Could Be Done to Protect the Public Interest**

The department and environmental boards do not have policies or guidelines to help staff and board members find a proper balance between environmental protection and economic development. In addition, conflict-of-interest standards do not require disclosure of financial, personal, and professional interests that might conflict with job and board responsibilities. In addition, three boards lack public members, and a State Compliance Advisory Board to assist small businesses with the federal Clean Air Act has not been established (page 34).

### **Underground Storage Tank Fund May Become Insolvent**

The Petroleum Underground Storage Tank Fund, created to provide for the clean-up of contamination caused by leaking tanks, may become insolvent if fees are not raised and/or expenditures do not decrease. The fund's net unobligated balance declined from \$31.8 million in 1992 to \$2.4 million in 1996; approximately \$20 million is obligated for pending claims (page 41).

### **There Are No Formal Policies for Calculating Economic Benefit of Noncompliance**

Several divisions are allowed by law to consider the economic benefit to violators when assessing civil penalties for violations of environmental laws and regulations. Some use informal methods to calculate the benefits, and others make no attempt to calculate the benefits (page 46).

### **Maintenance System for State Parks Needs Improvement**

The department's maintenance of state parks has several weaknesses: (1) only a small proportion of the state parks' major maintenance needs are funded each year; (2) the process for identifying and ranking maintenance needs tends to neglect preventive maintenance; and (3) the practice of restricting the geographic range of regional centers' work puts outlying parks at a disadvantage (page 47).

### **Unsurveyed Park Boundaries Allow Encroachments**

Encroachment occurs when individuals or companies use state land as if it belonged to them. Auditors observed personal residences, outbuildings, and a pool on land apparently owned by the state. However, the division does not have a formal plan for completing boundary surveys for state parks and does not adequately monitor the completion of surveys (page 49).

### **Analysis of State Park Costs Is Inadequate**

Management has not compiled, analyzed, and reported the costs of state park in terms that allow an evaluation of the state parks' economic self-sufficiency and contracted services' cost-effectiveness, and this lack of analysis undermines management's ability to control state parks' costs. The department has not included total costs in calculating the extent to which park revenues cover costs and has not compiled the costs of retail activities to compute a cost-benefit (page 52).

### **Management of Parks Could Be Improved**

Strategic management plans for state parks have not been used by the department to monitor the parks' progress and have not been updated. The needs identified in each park's plan have not been compiled to determine the entire park system's greatest needs. In addition, management could not document the monitoring of parks' compliance with park standards and does not have a formal process for revising the standards as needed (page 58).

### **Public Education Efforts Lack Coordination**

The department has not coordinated or evaluated its public information, education, and outreach efforts. Four sections in the central office are responsible for these functions: Public Information, Education and Outreach, Pollution Prevention/Environmental Awareness, and Solid Waste Assistance. In addition, public information, education, and outreach efforts for state parks are handled by each park (page 61).

## **OBSERVATIONS AND COMMENTS**

The audit discusses the following issues that affect the department, the boards, and the citizens of Tennessee: monitoring of the Environmental Protection Fund, department oversight of Department of Energy clean-up activities, Superfund clean-up standards, the Superfund Voluntary Cleanup Oversight and Assistance Program, the need for a computerized reservations system for state parks, and the State Parks Foundation (page 7).

## **ISSUES FOR LEGISLATIVE CONSIDERATION**

The General Assembly may wish to consider (1) evaluating the membership of the Air Pollution Control Board, the Solid Waste Disposal Control Board, the Ground Water Management Board, and the Water Quality Control Board to determine if the boards have balanced public, conservation, and industry representation; (2) restructuring the fees for participating in the Petroleum Underground Storage Tank Fund; and (3) amending statutes for this fund to clarify what types of bodily injury and/or property damage the fund should cover for third-party claims (page 65).

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"Audit Highlights" is a summary of the audit report. To obtain the complete audit report which contains all findings, recommendations, and management comments, please contact

Comptroller of the Treasury, Division of State Audit  
1500 James K. Polk Building, Nashville, TN 37243-0264  
(615) 741-3697

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**Performance Audit**  
**Department of Environment and Conservation**  
**and**  
**Related Environmental Boards**

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# **Performance Audit Department of Environment and Conservation and Related Environmental Boards**

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## **INTRODUCTION**

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### **PURPOSE AND AUTHORITY FOR THE AUDIT**

This performance audit of the Department of Environment and Conservation and related regulatory boards was conducted pursuant to the Tennessee Governmental Entity Review Law, *Tennessee Code Annotated*, Title 4, Chapter 29. Under Section 4-29-219, the Department of Environment and Conservation is scheduled to terminate June 30, 1998. Under Section 4-29-220, the Air Pollution Control Board, Board of Ground Water Management, Petroleum Underground Storage Tank Board, Solid Waste Disposal Control Board, and Water Quality Control Board are scheduled to terminate June 30, 1999. The Comptroller of the Treasury is authorized under Section 4-29-111 to conduct a limited program review audit of the department and the related regulatory boards and to report to the Joint Government Operations Committee of the General Assembly. The audit is intended to aid the committee in determining whether the department and the related regulatory boards should be abolished, continued, or restructured.

### **OBJECTIVES OF THE AUDIT**

The objectives of the audit were

1. to determine the authority and responsibilities mandated to the department and to the related regulatory boards by the General Assembly;
2. to determine the extent to which the department, bureau, and boards have fulfilled their legislative mandates efficiently and effectively and have complied with applicable laws and regulations;
3. to develop possible alternatives for legislative or administrative action that could result in a more efficient and/or effective operation of the department and the boards.

### **SCOPE AND METHODOLOGY OF THE AUDIT**

The activities of the Department of Environment and Conservation and related boards were reviewed for the period January 1, 1994, through May 30, 1996. The audit was conducted in accordance with generally accepted government auditing standards and included

1. review of applicable statutes and regulations;
2. examination of the department's and the boards' files, documents, policies, and procedures;
3. a review of prior performance audit and financial and compliance audit reports and audit reports from other states and the federal government;
4. interviews with department and board staff, personnel of similar departments in other states, and staff of the U.S. Environmental Protection Agency, the U.S. Food and Drug Administration, and the U.S. Department of the Interior; and members of citizen environmental groups; and
5. site visits to seven state parks and four regional maintenance centers.

## **ORGANIZATION AND RESPONSIBILITIES**

The Department of Environment and Conservation was created when Executive Order Number 42, dated February 4, 1991, joined the Bureau of Environment with the Department of Conservation. The department is organized into two bureaus—Environment and Conservation—each reporting to a deputy commissioner (see Exhibit 1). An administrative section provides support services for both bureaus.

Providing staff support for the department are the Office of Public Information, General Counsel, Internal Affairs, and Special Projects, which report to the Commissioner, and Administrative Services, which is headed by an Assistant Commissioner. Administrative Services include Fiscal Services, Internal Audit, Information Systems, Personnel Services, and Education and Outreach.

The Bureau of Environment acts as the administrative office for the implementation and enforcement of state and federal laws involving environmental activities. It is headed by the Deputy Commissioner for Environment. The bureau consists of three sections: two regulatory sections with nine divisions and a water and wastewater systems operator training facility, and a nonregulatory section with four divisions. Together, the two regulatory sections perform regulatory and enforcement activities connected to prevention of pollution of water, air, and land and the effects of pollution on public health. The various divisions of the two sections staff six regulatory boards which adopt policy and hear appeals of department decisions.

### Bureau of Environment - Regulatory Divisions

The Division of Air Pollution Control establishes air emission standards and procedural requirements to monitor industries in the state through the issuance of construction and operating permits. The division derives its authority from the Tennessee Air Quality Act (*Tennessee Code Annotated*, Section 68-201-101 et seq.). The division is staff to the Air Pollution Control Board which adopts regulations, holds hearings, and initiates court actions to enforce regulations.



The Division of Ground Water Protection regulates subsurface sewage disposal to ensure that the ground water of Tennessee is safe and usable.

The Division of Radiological Health is responsible for preventing environmental and health hazards associated with ionizing radiation. The division's duties include regulating the use and possession of radioactive materials and radiation-producing machines and responding to accidents involving radiation.

The Division of Solid/Hazardous Waste Management is responsible for regulating (1) the processing and disposal of non-hazardous solid waste and (2) the generation, recycling, storage, transportation, treatment, and disposal of hazardous waste within the state. The division has been authorized by the U.S. Environmental Protection Agency (EPA) to regulate hazardous waste, a federal responsibility under the Resource Conservation and Recovery Act, and receives a grant to support these efforts.

The Solid Waste Disposal Control Board promulgates the regulations and hears appeals of enforcement actions relating to the Solid Waste Management program, the Hazardous Waste Management Program, and the state Superfund program.

The Division of Superfund discovers, investigates, abates, and cleans up inactive hazardous substance sites (i.e., hazardous substances are no longer being added to these sites). The division's primary authority is found in the Hazardous Waste Management Act of 1983 (Section 68-212-201). As of July 1996, the state Superfund list had 143 sites.

The Division of Underground Storage Tanks' primary function is to investigate, identify, and clean up leaking tank problems and to ensure that new tanks meet leak-prevention requirements. This division draws its authority from the Tennessee Petroleum Underground Storage Tank Act (Section 68-215-101 et seq.). The Petroleum Underground Storage Tank Board promulgates rules under the act and hears appeals of the division's enforcement actions.

The Division of Water Pollution Control is responsible for the administration of the Tennessee Water Quality Control Act of 1977 (Section 69-3-101) to control water pollution in the state. The division issues and monitors permits to dischargers of wastewater under the National Pollutant Discharge Elimination System. In addition, the division issues permits for stream channel modification, wetland alterations, and gravel dredging. The Water Quality Control Board approves regulations and hears appeals relating to enforcement actions by the division.

The Division of Water Supply is primarily responsible for administering the Tennessee Safe Drinking Water Act (Section 68-221-701 et seq.) to protect the quality of drinking water provided by public utilities in the state. The Water Quality Control Board approves regulations and hears appeals relating to the division's enforcement actions.

The division also administers the Safe Dams Act (Section 69-12-101) to ensure safe dam construction and licenses well drillers and pump setters under the Water Wells Act (Section 69-11-101 et seq.). The Board of Ground Water Management assists the division in writing regula-

tions pertaining to water well drillers and pump installers. The board also reviews license applications for these two groups. The board acts in an advisory capacity only.

The Fleming Training Center trains operators of water and wastewater treatment systems. The Water and Wastewater Board of Certification certifies those operators.

The Department of Energy Oversight Division was established in July 1991 to monitor two state agreements with federal agencies regarding U.S. Department of Energy activities in Oak Ridge. Further details can be found in the Observations and Comments section of this report.

### Bureau of Environment - Nonregulatory Divisions

The Division of Construction Grants and Loans provides financial and technical assistance to public water and wastewater facilities.

The Division of Solid Waste Assistance provides financial assistance and special statewide services to local governments to ensure their compliance with the Solid Waste Management Act (Section 68-211-801 et seq.). The act established a comprehensive solid waste management system to help communities plan for future waste disposal needs.

The Division of Pollution Prevention/Environmental Awareness was created in 1993 to encourage and assist in implementing voluntary pollution prevention measures to reduce toxic chemical discharges and raise environmental awareness in Tennessee.

### Bureau of Conservation

The Bureau of Conservation has ten divisions.

- The Division of State Parks is responsible for protecting and preserving the natural, cultural, and scenic areas and for managing the 50 state parks.
- The State Parks Foundation raises private funds for the benefit of the state parks and coordinates citizen groups interested in supporting the parks.
- The Division of Real Property Management coordinates land acquisition and disposal, administers the department's insurance and office space leases, and provides survey work for land under the department's control.
- The *Tennessee Conservationist* magazine, published bimonthly, serves to educate Tennesseans about the goals of conservation and environmental protection.
- The Division of Archaeology is responsible for identifying and preserving significant archaeological sites.

- The Division of Geology provides information and research on the state's geological and mineral resources.
- The Division of Natural Heritage helps protect the state's natural biological diversity through identification, conservation, and communication.
- The Division of Recreational Services administers technical, planning, and financial assistance to state and local providers of public recreation.
- The Division of Indian Affairs coordinates government resources to provide programs for Indian citizens and works with Indian communities in social and economic development.
- The Historical Commission oversees state historic sites, assists publications on Tennessee history, and maintains the Tennessee register of historic places.

The Division of Indian Affairs and the Historical Commission were not reviewed for this audit; they will be reviewed separately.

### Revenues and Expenditures

The Department of Environment and Conservation had general fund expenditures of \$142.50 million in fiscal year 1995. The Bureau of Conservation spent \$53.22 million (37%), the Bureau of Environment spent \$79.61 million (56%), and the Division of Administration spent \$9.66 million (7%). The Bureau of Environment had revenues of \$59.825 million and expenditures of \$64.969 million in its special revenue funds in fiscal year 1995. The special revenue funds (the Abandoned Land Program Fund, the Environmental Protection Fund, the Hazardous Waste Fund, the Solid Waste Fund, and the Underground Storage Tank Fund) had a combined balance of \$52.078 million at June 30, 1995. The Bureau of Conservation's special revenue fund, Parks Acquisition, had revenues of \$5.41 million and expenditures of \$2.52 million and a balance of \$10.76 million at June 30, 1995.

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## OBSERVATIONS AND COMMENTS

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The issues discussed below did not warrant findings but are included in this report because of their effect or potential effect on the operations of the department and on the citizens of Tennessee.

### Environmental Protection Fund

The Environmental Protection Fund was established in 1991 to provide funding for additional staff and to improve the salaries and benefits of existing staff in the environmental regulatory programs (Section 68-203-103, *Tennessee Code Annotated*). The fund is supported with revenues from fees and penalties charged to regulated entities and from interest income. Staff said 352 new positions have been funded since 1991.

There are nine subaccounts within the fund: Air Pollution Control, Title V Clean Air, Radiological Health, Water Pollution Control, Water Supply, Solid Waste Management, Ground Water Protection, Fleming Training Center, and Hazardous Waste Management. Funds are budgeted annually for each of these programs; if current revenues are not sufficient, a program can use its subaccount fund reserve. Funds cannot be transferred from one subaccount to another.

The fund had an ending balance of \$16,552,430 in fiscal year 1994 and \$11,191,861 in 1995 (see Exhibit 2). However, the fund increased its ending balance to \$12,101,416 in fiscal year 1996. The balances of eight subaccounts (all except Hazardous Waste Management) decreased from 1994 to 1995, indicating that annual expenditures were exceeding current revenues. However, only four subaccounts (Air Pollution Control, Water Pollution Control, Solid Waste Management, and Hazardous Waste Management) had decreases in their ending balances from fiscal year 1995 to fiscal year 1996. Staff stated that the Fleming Training Center was expected to spend down its subaccount each year and that its zero balance at the end of 1995 was not a concern. However, staff were monitoring the Water Pollution Control's subaccount balance which declined from \$1.7 million in July 1994 to \$4,565 in June 1995. The subaccount had run out of funds by June 1996, and expenditures from this subaccount were being restricted. Department management had appealed to the Water Pollution Control Board to increase these fees but did not believe, as of February 1997, that the appeal would be successful. The department, anticipating an unsuccessful appeal, was planning to eliminate 18 unfilled positions funded by the subaccount.

According to department management, the fund is reviewed periodically. If a subaccount has problems, it is reviewed each month, and spending is adjusted to coincide with monthly revenue. However, no formal procedures have been developed to guide the frequency or extent of such review. A formal policy and guidelines could help ensure periodic monitoring over time as staff change.



## Department Oversight of Department of Energy Clean-up Activities

The Tennessee Oversight Agreement is an agreement between the State of Tennessee (through the Department of Environment and Conservation) and the U.S. Department of Energy (DOE) to assure the citizens of Tennessee that the DOE is cleaning up the environmental hazards on and around the Oak Ridge Reservation. The Federal Facilities Agreement is an agreement among the State of Tennessee (through the department), the U.S. Department of Energy, and the U.S. Environmental Protection Agency (EPA) to ensure that the environmental impacts resulting from past DOE activities at the Oak Ridge Reservation are thoroughly investigated and that appropriate remedial action is taken to protect the public's health and the environment. The department's expenses for these oversight activities are reimbursed through a grant from the Department of Energy. Division expenses in 1995 were approximately \$6.4 million.

Parties to these agreements established primary activity milestones for 1991 through 1995 and proposed schedules for 1996 and 1997. With few exceptions, milestones in the original schedules have been met. When milestones could not be met, the parties have agreed on alternate dates and have modified the Federal Facilities Agreement (FFA).

Clean-up of the Oak Ridge Reservation is mandated by the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Division staff stated that the Department of Energy has spent approximately \$600 million annually on this project. In the first four years, most of the funds were spent for testing and research, but now most funds are being spent for actual clean-up. The cost and length of the project depend partly on the extent to which the site is cleaned up—to "green fields" status which would allow the land to be used for any purpose, including residential, or to "brown fields" status which would restrict use of the land to industrial purposes. Other factors include the amount of funding provided and the proportion of the funding spent on clean-up activities versus testing and research.

Although clean-up is mandated by law, state oversight is required only by the Tennessee Oversight Agreement. Therefore, funding for the DOE Oversight Division (and the Tennessee Emergency Management Agency activities for emergency planning) is dependent on federal budgeting decisions. DOE assured division management, in December 1996, that the proposed federal budget cuts would not affect the division's funding but could affect the schedule for clean-up. At that time, DOE and the department were negotiating new dates for completion of clean-up.

## Superfund Clean-Up Standards

No uniform standards exist to define the level to which Superfund sites must be cleaned up. To assist in making decisions about site clean-ups, the Division of Superfund uses the National Contingency Plan, a set of Environmental Protection Agency (EPA) regulations that establish general methods and criteria for determining the appropriate extent of response to hazardous substance contamination. EPA is in the process of developing uniform standards, but has not set a completion date. The lack of such standards could result in inconsistencies and inequity in Superfund requirements for sites with similar characteristics.

The Superfund Division, in consultation with technical staff in other divisions, developed clean-up standards in 1991. However, according to staff, the division withdrew the proposed standards from consideration after both industry and environmental representatives raised objections. Division staff plan to review the final EPA standards and adopt the parts relevant to Tennessee's program. Until the EPA standards are complete, the division will continue to use the standards in the National Contingency Plan.

### Superfund Voluntary Program

The Voluntary Cleanup Oversight and Assistance Program, created by Section 68-212-224, *Tennessee Code Annotated*, in 1994 is an innovative approach to cleaning up inactive hazardous waste sites because the responsible parties take control over the clean-up process. Division of Superfund staff oversee the investigation and the clean-up process and provide technical assistance if requested. The division issues a certificate to the responsible party when clean-up has been completed. As of January 1996, the program had 48 participants. Only one site had been completely cleaned up as of August 1996.

According to division staff, sites in the voluntary program are cleaned up quicker than sites in the division's mandatory program because the structure is less formal and responsible parties arrange and pay for clean-up. Program participants benefit in the following ways: (1) no lien is placed on the property, (2) no Notice of Hazardous Substances is attached to the property, and (3) remediation (clean-up) methods are negotiable.

The division may need to clarify its instructions to program participants when they apply for the program. Some participants told the Division of State Audit they did not clearly understand the terms of the consent order used to define their responsibilities and what elements of the standard consent order were negotiable. A review of 20 participant files indicated that it took an average of six months to reach an agreement on the terms of a consent order. A more standardized approach to reaching a consensual agreement and a clearer explanation of program requirements might decrease the amount of time it takes to negotiate those agreements.

Department of Environment and Conservation's Comment: There is no need to increase the speed of negotiating agreements for entry into the program. The program was closed for a significant period of time because staff levels would not allow oversight of additional sites. Model documents should not be so rigid that site-specific conditions cannot be considered.

### Computerized Reservations System for State Parks

Parks Division management stated that an Information Strategy Planning Project completed in 1993 by an outside consultant identified the department's number one business need as a computerized reservation system for Tennessee's state parks. Several proposals have been developed in recent years, but no agreement has been reached on the cost and type of system—

centralized or stand-alone, system-wide or for selected parks. (Exhibit 3 lists 1996 occupancy rates for park inns and cabins.)

Toll-free numbers have made reservations at state parks more accessible to patrons. The department reported in June 1996 that it has obtained toll-free telephone numbers for the central office (for relaying calls), for resort parks with inns and cabins, and for several parks' campgrounds. Currently, when patrons call the central office's toll-free telephone number, staff either transfers the call directly to the park where reservations are desired or gives the caller the toll-free number for that park.

However, a computerized system is still needed for managing reservations, charges, and related records. Reservations are recorded by hand in a reservation book at the park, and charges for stays at inns and cabins are recorded in paper folios during visitors' stays. Reservation confirmation notices, deposit notices, and other mail related to reservations are generated manually, as are night audits (including compilation of charges) and documents for registration and check-outs. This manual system is time-consuming and more vulnerable to error than an automated system would be, according to department management.

In its design and development of a computerized reservations system, the department should consider the experience of other states in analyzing the costs and benefits of centralized versus stand-alone systems.

### State Parks Foundation

The department contracted with the State Parks Foundation, a statewide organization established in 1994, to provide financial and other support to Tennessee's state parks. Under this contract, the foundation committed itself to raise funds and to actively seek community involvement for the parks. Minutes of the May 1995 Conservation Commission meeting reported that the foundation intended to raise \$15 million during 1996 and to hire a consultant to plan this capital funds project. Donations were to be requested from board members to cover the cost of the consultant, estimated at \$40,000. However, the foundation had received less than \$10,000 in contributions from these efforts as of February 1996.

The foundation's contract with the department provides that the state shall have no financial liability for the foundation and shall incur no financial obligations to the foundation. However, in 1996, the Tennessee General Assembly appropriated \$50,000 to the foundation for the consultant's study. The appropriated funds are maintained in a separate interest-bearing account. As of November 12, 1996, \$33,251 had been paid and the account balance was \$17,407.

According to a draft of the consultant's study, the state parks are capable of developing strong public/private partnerships to increase awareness of the system and to raise significant private-sector funds. However, the consultant recommended local "mini-campaigns" in areas the

**Exhibit 3**

**Occupancy Rates of State Park Inns and Cabins  
Fiscal Year 1996**

Park	Cabin Occupancy		Inn Occupancy	
	<u>Peak(1)</u>	<u>Annual(2)</u>	<u>Peak(1)</u>	<u>Annual</u>
Big Ridge	48%	24%		
Cedars of Lebanon	69%	57%		
Chickasaw	70%	57%		
Cumberland Mountain	62%	48%		
Edgar Evins	63%	37%		
Fall Creek Falls	86%	73%	90%	68%
Henry Horton	77%	59%	71%	55%
Meeman-Shelby Forest	37%	32%		
Montgomery Bell	73%	59%	73%	48%
Natchez Trace	63%	48%	69%	46%
Norris Dam	59%	35%		
Paris Landing	69%	60%	71%	50%
Pickett	52%	38%		
Pickwick Landing	73%	61%	80%	60%
Reelfoot Lake			59%	45%
Roan Mountain	68%	52%		
Standing Stone	64%	37%		
Tims Ford	59%	38%		
Annual Averages	63%	47%	73%	53%

Notes:

1. Peak season for most parks is June through October; peak season for Reelfoot Lake is January through May.
2. Although some park cabins are closed during winter months, occupancy percentages are computed for twelve months.

Source: Division of State Parks.

consultant believed would be successful. This recommendation differs from the foundation's statewide strategy. The consultant also suggested that the foundation continue to secure seed money from the public and private sectors for the start-up costs and conduct two local campaign studies prior to the mini-campaigns.

The foundation maintains a checking account (non-state funds) which does not bear interest. Bank statements recorded \$57,635 in receipts and \$33,624 in disbursements from January through September 1996 and showed a balance of \$28,118 as of September 30, 1996. In addition, revenues and expenditures in the state's financial system showed revenue of \$3,135 and expenditures of \$4,193 from January through September 1996.

Department staff compiled a list of their activities on behalf of the foundation in 1995 and 1996 (these two positions are now vacant):

- Obtained several in-kind donations, including printing of 10,000 foundation brochures and celebrity preparation of promotional tapes for public service announcements.
- Made approximately 30 presentations to clubs, organizations, and industry and distributed 6,000 foundation brochures.
- Provided technical assistance to more than 18 parks for establishing Friends organizations and assisted in programs and fund-raising events.
- Co-sponsored and organized three benefit golf tournaments.
- Co-sponsored and helped organize a seven-day Tennessee Capitol Bike Ride as an official Bicentennial event.

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## FINDINGS AND RECOMMENDATIONS

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### **Bureau of Environment**

#### **1. The central office is slow responding to Enforcement Action Requests (EARs)**

##### **Finding**

The department's central office has not responded promptly to field office requests for enforcement action against those who continue to violate solid waste and hazardous waste management, water supply, and water pollution control regulations.

If a violator continues in noncompliance after field staff have issued a Notice of Violation, an enforcement action request is filed with the central office. After reviewing documentation of the alleged violation, central office staff may close the case or issue an enforcement order if they believe a statute or regulation has been violated and if the violator has refused to take corrective action. (See Exhibit 4 for a flowchart of the department's enforcement process after the central office receives a request for enforcement.)

In 1994, for the 118 field office requests for enforcement, the department's central office took an average of 227 days to issue an enforcement order; in one case, 828 days passed before an enforcement order was issued. In 1995, the field offices made fewer (67) requests for enforcement. The average processing time for these requests was 200 days; one request took 432 days. In addition, 48 requests for enforcement in 1994 and 1995 had not been resolved as of May 8, 1996; one request had been in process 845 days—more than two years. The absence of formal time guidelines and the lack of authority for some program directors to issue enforcement orders contributed to this delay. Slow response by the department may imply a lack of concern about the violations and weakens the incentive for violators to promptly comply with environmental regulations.

**Solid Waste Management.** The solid waste management program regulates facilities that process and dispose of solid waste (e.g., through composting, incineration, and landfills). Enforcement orders were issued more slowly in solid waste management cases than in other regulatory areas—an average of 350 days in 1994 and 287 days in 1995. (See Exhibit 5.) Eighty-five percent of the 20 requests submitted in 1994, and all ten requests submitted in 1995, took more than 180 days.

**Hazardous Waste Management.** The department regulates hazardous waste under the federal Resource Conservation and Recovery Act. Substances regulated under the act include asbestos, DDT, and lead. The central office took an average of 209 days in 1994 and 152 days in



**Exhibit 5**

**Department of Environment and Conservation  
Enforcement Action Requests (EARs)  
Calendar Years 1994 and 1995**

	<u>Water Supply</u>	<u>Hazardous Waste</u>	<u>Solid Waste Management</u>	<u>Water Pollution Control</u>	<u>Total</u>
<b>1994 Enforcement Action Requests</b>					
Number Resulting in Order	23	29	20	46	118
Average Number of Days	191	209	350	203	227
Percent over 180 Days	39%	55%	85%	41%	52%
Range of Days	106 to 466	1 to 507	41 to 828	20 to 565	1 to 828
<b>1995 Enforcement Action Requests</b>					
Number Resulting in Order	9	19	10	29	67
Average Number of Days	209	152	287	199	200
Percent over 180 Days	56%	37%	100%	48%	54%
Range of Days	68 to 427	47 to 323	183 to 432	61 to 377	47 to 432
<b>1994 and 1995 EARs <u>Not Resolved as of May 8, 1996</u></b>					
Number	14	13	10	11	48
Average Number of Days	421	521	527	474	482
Percent over 180 Days	100%	92%	100%	100%	98%
Range of Days	217 to 695	141 to 845	230 to 840	240 to 765	141 to 845
<b>1994 and 1995 EARs <u>Closed Without Order</u></b>					
	13	19	10	23	65

Source: Department of Environment and Conservation division logbooks.

1995 to issue orders or to take other action (e.g., a warning letter or closure) to enforce hazardous waste management regulations. The agreement between the department and the U.S. Environmental Protection Agency (EPA) requires an enforcement order within 180 days of the discovery of a violation. However, more than half of the 29 requests in 1994 and more than a third of the 19 requests in 1995 exceeded the 180-day guideline.

Water Pollution Control. Water pollution enforcement concerns the pollution of streams, lakes, and rivers by sources, such as factories, that discharge effluent into bodies of water and by sources such as agricultural runoff. Enforcement orders were issued an average of 203 days after requested in 1994 and 199 days after requested in 1995. In 41 percent of the 1994 cases and 48 percent of the 1995 cases, the department took more than 180 days to issue enforcement orders.

Water Supply. Water supply violations can occur when a municipal or other water system fails to monitor water quality or when samples from such a system reveal levels of turbidity (sediment in water), microorganisms, and organic and/or inorganic substances exceeding allowable amounts. Enforcement orders for such violations were issued an average of 191 days after requested in 1994 and 209 days after requested in 1995. Thirty-nine percent of the 1994 orders and 56 percent of the 1995 orders were issued more than 180 days after requested.

The divisions regulating air pollution, radiological health, and underground storage tanks were not included in this analysis because they did not have comparable information. The Divisions of Air Pollution Control and Radiological Health do not use EARs in their enforcement procedures. The Division of Air Pollution Control has a centralized enforcement process where the central office obtains information on violations from field staff (e.g., Notices of Violations) and determines whether enforcement should take place. However, staff did not have information on how long it took from the issuance of a Notice of Violation to an enforcement order. Division of Radiological Health inspectors take the initiative in enforcing regulations without central office approval for specific cases. The Superfund was not included in the analysis because staff do not record the date an enforcement action request is received; however, only three enforcement orders were issued for the Superfund in 1994 and 1995.

The department has time guidelines for enforcement in only two regulatory areas, and these guidelines result from the involvement of the U.S. Environmental Protection Agency (EPA). In hazardous waste management, the department's agreement with the EPA requires that enforcement action be taken within 180 days of the discovery of a violation. In air pollution control, enforcement action on cases involving both the department and the EPA is to be taken within 105 days of the Notice of Violation. Establishing time guidelines for each regulatory area could provide a standard to guide staff and a trigger to help management identify and respond to instances of slow enforcement.

The ability to issue enforcement orders at the division or program level might improve the department's timeliness in taking enforcement action. Although enforcement orders in air pollution control, hazardous waste management, and water supply can be issued at the division or program level, enforcement orders in solid waste management, Superfund, and water pollution control must be signed by the department's commissioner. In the underground storage tank program, the division can issue enforcement orders only for certificate violations (e.g., facilities operating without certificates); other types of violations require a Commissioner's Order.

## **Recommendation**

The department should take steps to improve the timeliness of its enforcement actions. Management should develop and implement time guidelines for each regulatory area and should periodically review the divisions' performance in meeting those time guidelines and take appropriate corrective action, if necessary. The Divisions of Air Pollution Control and Underground Storage Tanks should develop a data system sufficient to track cases involving enforcement action and compile data to evaluate timeliness. Management should consider granting authority to issue enforcement orders at the division or program level for violations of solid waste management, Superfund, and water pollution control regulations and should consider allowing the Underground Storage Tanks Division to issue all types of enforcement orders.

## **Management's Comments**

### Department of Environment and Conservation:

We concur in part. While it is important and useful to track the time that individual cases take to process, time alone is not a valid measure of either efficiency or appropriateness of action. Every case is different. They arise out of different situations, are prosecuted under different laws, have different lawyers and judges involved, and most importantly, have different basic priorities. Cases that involve ongoing environmental harm receive high priority. Examples can be provided in this category where orders are processed within days of the discovery of a violation. Such cases are often completed within months. Recently, this department participated in the prosecution of a number of criminal cases. Within three months of discovery, convictions were obtained for the illegal disposal of hazardous waste. In the federal system, it is not unusual for such cases to take several years.

Some civil cases are delayed for strategic reasons. For example, civil litigation allows expanded discovery by the respondent. When a criminal case is also ongoing, the civil case must be delayed. Expending limited resources on high priority cases necessarily causes other actions to take longer. Cases that do not involve ongoing violations and those that amount to nothing more than revenue collection are not high priority cases and do not proceed as swiftly as cases that have the potential to affect public health, safety, or the environment. Enforcement cases are all unique. There can be evidentiary problems that require extensive discovery to resolve. Witnesses can be difficult to track, die or simply tell conflicting stories.

This finding focuses on the division levels between the field offices and the central office. However, the finding included days from commencement of the enforcement request to the actual resolution of the matter. The list of "approvers" on a route slip before issuance has steadily grown in number and adds many days to the issuance process. We will review the number of individuals who review and approve orders prior to their issuance.

We concur in part with the recommendation which addresses the Division of Air Pollution Control and the Division of Underground Storage Tanks. To the extent that it proves to be a useful tool, all divisions will be asked to review and develop a system to track enforcement cases.

### **Rebuttal**

**Management's response appears to concentrate on litigation, specifically, the part of the enforcement process after an environmental board has rendered a decision on a case. The finding concentrates on the enforcement process *before* a case reaches a board, in other words, during intradepartmental deliberations on how to proceed on a case. At this stage, the department is using administrative procedures, not court procedures, and therefore has greater control over how fast to proceed on a case.**

#### Solid Waste Disposal Control Board:

We concur with the department's responses pertinent to Solid/Hazardous Waste matters.

#### Water Quality Control Board:

We concur with the department's response to this finding.

## **2. X-ray inspection process is inadequate**

### **Finding**

The Division of Radiological Health's X-ray inspection process does not provide the department, staff operating the X-ray machines, and consumers the assurance that each machine is safe and effective. Poorly functioning X-ray machines could release improper levels of radiation resulting in health problems, poor quality images, and inaccurate medical diagnoses. The division regulates the use of X-ray machines, including mammography machines, by registering X-ray tubes, registering private inspectors (staff who work for the owner of the X-ray facility or persons who perform inspections under contract), and requiring periodic inspection of each X-ray tube by department staff or a registered inspector.

As of February 1996, there were 12,317 X-ray tubes registered with the department. Section 68-202-503, *Tennessee Code Annotated*, requires that tubes be inspected every one to four years according to their classification (see Exhibit 6). Mammography X-ray tubes are inspected by department staff under a contract with the U.S. Food and Drug Administration. Inspections of other X-ray tubes can be performed by state inspectors or registered inspectors certified by the department, whichever facility management chooses. Facilities that use registered

inspectors receive an 82 percent discount on their tube registration fees because the department's cost is reduced. According to division staff, approximately 60 percent of the X-ray tubes in the state are inspected by department staff and 40 percent, by registered inspectors.

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**Exhibit 6**

**Department of Environment and Conservation  
X-ray Tube Classification, Number of Tubes Registered, and  
Required Inspection Cycle  
As of February 1996**

Classification	Description	Number of Tubes	Inspection Cycle
Class I	Dental	6,699	4 years
Class II	Medical Diagnostic X-Ray, Medical or Veterinary, Priority 2 Mammography	2,067	2 years
Class III	Radiologist Office, Hospitals, Orthopedic Surgeon Office, Priority 1 Mammography	2,902	1 year
Class IV	Therapy Medical Radiation, Medical & Veterinary Therapy	18	1 year
Class V	Priority 2 Industry & Education (closed beam)	454	2 years
Class VI	Priority 1 Industry & Education (open beam)	88	1 year
Class VII	Accelerator	<u>89</u>	1 year
	Total Number of Tubes	<u><u>12,317</u></u>	

Source: Rules and regulations of the Division of Radiological Health, Department of Environment and Conservation, and data compiled by division staff.

### Many State Inspections Not Performed As Scheduled

One-third of the X-ray inspections scheduled by the department were not performed in 1995. Class III X-rays—those used in the offices of radiologists and orthopedic surgeons and in hospitals—are scheduled to be inspected annually as a high-risk category, yet this class had a high number of overdue inspections (see Exhibit 7). Annual inspections are scheduled because of the risk that the machine will malfunction and/or cause harm to operating staff and consumers. In addition to overdue inspections, almost two years could elapse between inspections and an inspection not be considered overdue because the division considers an inspection during each calendar year to meet the requirement for an annual inspection. In effect, a facility could be inspected in January of one year and December of the next year and still meet the requirements even though 23 months passed between inspections. Also, the division does not monitor the timeliness of inspections performed by registered inspectors (see the section on management information below).

Mammography X-ray tubes are subtracted from the tubes overdue in Exhibit 7 because they are monitored on a separate database. According to division records, four of the 182 mammography facilities (2%) had not received the annual 1995 inspection as of May 31, 1996.

### Extent of Noncompliance Unknown

Fifteen percent of the X-ray tubes inspected by department staff in 1994 and 19 percent of tubes inspected in 1995 were not in compliance with division requirements. However, the division does not record in its database the number of X-ray tubes registered inspectors found in noncompliance or record the types of deficiencies department inspectors found. Without this information, the department cannot determine the actual rate of compliance or the areas needing more attention.

### Need to Improve Management of State Inspectors' Workloads and Ensure Timely Inspections

The division cannot plan for the most efficient and effective use of staff resources because of delays in receiving information about registered inspectors' prior and planned inspections. Facilities that use registered inspectors must send the department the registered inspector's report from the prior year with their fees for the current year. Tube registration fees are due annually on March 17, with a grace period to April 1. If no report for the prior year is sent with the fees, the division adds the facility to its schedule of inspections in the current year. At that point, the inspection is already overdue. In addition, staff said that when department inspectors go to perform inspections, they sometimes find that the facility owners have decided to use a registered inspector instead. An internal audit report in July 1993 recommended that the division require facilities to include with their annual fee payment a statement of which type of inspector they would use in the current year, but the division chose not to implement the recommendation.



### No Routine Follow-up of Inspections Performed by Registered Inspectors

Facilities cited for noncompliance with division rules and regulations during inspections performed by registered inspectors provide documentation of correction, but the division does not independently verify the information. In addition, the division has not established time guidelines for correcting deficiencies found in inspections performed by either state or registered inspectors. According to Section 68-202-503, *Tennessee Code Annotated*, facilities inspected by registered inspectors are subject to random survey inspections to ensure the division's requirements are properly enforced. The division, however, has done little to meet its goal of following up 10 percent of those inspections. The absence of time guidelines and the lack of follow-up reduce facilities' incentives to correct deficiencies promptly.

### Late Submission of Inspection Reports and Documentation of Corrective Action

Registered inspectors submit their inspection reports to the facilities' owners—often their employers—and facilities submit the reports and documentation of corrective action to the department with their annual registration fees. If an inspection was performed in January and the report submitted with fees in April of the next year, the department would receive the report 16 months after the inspection. During this time, any deficiencies and resulting health hazards could continue. Unlike department inspectors, registered inspectors do not have authority to take a malfunctioning machine out of service.

### Inadequate Management Information

Data entered into the computerized database from current inspections replace data from prior inspections. Since only the most recent inspections are on the database, staff cannot perform any kind of historical or trend analysis to identify recurring deficiencies, problem facilities, and training needs for facilities and inspectors. In addition, some of the information needed for such trend analysis is not on the database. Staff do not enter data on inspections performed by registered inspectors nor the types of deficiencies cited by department or registered inspectors. Because trend information on deficiencies is not available, the division cannot easily determine long-term problems regarding the work of particular inspectors, particular types of inspectors (department or registered), the operating condition of particular tubes or tube types, and the responsiveness of facility management in correcting deficiencies.

## **Recommendation**

The Division of Radiological Health should take action to improve the X-ray inspection process so that inspections are performed with the required frequency and followed up to ensure deficiencies are corrected. The division should specify that annual inspections are to be performed approximately 12 months apart.

The division should require X-ray facility management to inform the division which type of inspector (department or registered) will perform the next year's inspection when the facility pays its annual registration fees.

The division should require registered inspectors to submit reports of their inspections to the division within a designated time (e.g., 30 days) after the inspection and should specify the time frame for facility management to submit documentation of corrective action for any deficiencies cited by either department or registered inspectors. The division should meet its goal of following up 10 percent of inspections performed by registered inspectors.

Department management should provide software adequate to ensure all X-ray tubes are inspected and to collect historical data and analyze trends in compliance. Management should ensure that staff compile information on X-ray tubes and all inspections and include the number and types of deficiencies, the type of tube, the date of inspection, and the date and type of corrective action taken. Management should analyze the trends in compliance to determine the necessary allocation of staff, training, and other resources.

### **Management's Comment**

#### Many State Inspections Not Performed As Scheduled

We concur in part. We concur regarding the inspection results for 1995. From a practical standpoint, we cannot concur that the annual scheduling mechanism is a significant safety issue, as implied by characterizations such as "high-risk category." The mandated inspection frequencies reflect only a rough estimate of the relative potential among different types of facilities for unnecessary exposure to patients, workers, and the public.

As a matter of practice, our inspection staff plan their inspection trips in consideration of many factors, of which the actual time elapsed since the last inspection is only one.

### **Rebuttal**

**Section 68-202-503, *Tennessee Code Annotated*, requires that the department follow the inspection schedule shown in Exhibit 6. Although several factors may be considered in scheduling particular inspections (including exposure risks to patients, workers, and the public), the department should adhere to the legally mandated inspection schedule.**

#### Extent of Noncompliance Unknown

We concur. The division is currently working with the department's Division of Information Systems to develop an enhanced database system which would allow the input of information

relating to the types of violations identified during state inspections. This system is in the basic development stages.

#### Need to Improve Management of State Inspectors' Workloads and Ensure Timely Inspections

We concur. Based on this audit, other audits, and Division of Radiological Health (DRH) activities, we are planning on revising the entire Registered Inspector (RI) program. The plan is to require early and timely submission of RI reports with corrective actions of the registrant being reported also. This will provide for more timely corrective action of discovered deficiencies. In addition, it will allow for a better work distribution and allow DRH greater lead time in inspection planning.

#### No Routine Follow-up to Ensure Prompt Correction of Deficiencies

We concur in part. We concur that follow-up to provide independent verification of correction of violations would provide facilities an incentive toward prompt correction.

We do perform follow-ups of state inspections at those facilities where we lack reasonable assurance that corrections have actually been made or are appropriate. We do not perform follow-ups in all cases, nor do we feel that is necessary.

We believe the absence of time guidelines for correction of violations does not pose any significant problem relative to state inspections. Some violations require more time to correct than others. A single time frame could necessarily be either too short for some or too long for others. Our current system provides for ongoing contact with the registrant on a frequent basis until correction is accomplished. This allows us to consider both the need for timely correction and the case-specific constraints of the individual registrant.

The changes discussed in the response to the previous finding and the proposed database system integration discussed below should serve to ensure timely attainment of compliance following state inspections.

#### Late Submission of Inspection Reports and Documentation of Correction Action

We concur. The plan to revise RI inspections will correct this.

#### Inadequate Management Information

We concur that a more powerful database system would provide additional useful management information. DRH is currently working with the Division of Information Systems to

identify or develop alternative database systems capable of meeting our needs. This activity is currently in its preliminary stages.

### **3. Regulation of underground storage tanks is inadequate**

#### **Finding**

The Division of Underground Storage Tanks' regulation of petroleum underground storage tanks has provided little incentive for tank owners/operators to prevent and detect operating problems and leaks because (1) the tanks were unlikely to be inspected, particularly for compliance with operating requirements, (2) under the division's voluntary program, for those tanks inspected, no enforcement action was taken for operating violations if problems were corrected within a reasonable time, and (3) enforcement action was not taken promptly for continuing violations. In addition, an owner's liability for clean-up costs and lawsuits resulting from third-party damages is limited, according to Section 68-215-111, *Tennessee Code Annotated*. Leaking underground storage tanks represent a serious and pervasive threat to the nation's groundwater resources. The purpose of the regulatory program is to identify violations and attempt to achieve compliance before leaks become a threat to groundwater.

#### **Few Compliance Inspections Performed**

Section 68-215-107, *Tennessee Code Annotated*, requires the commissioner to exercise general supervision over the regulation of petroleum underground storage tanks. However, the division has inspected only a small proportion of Tennessee's underground storage tanks for compliance with operating and leak-detection requirements. In 1995, there were 52,865 petroleum underground storage tanks at over 19,000 facilities in Tennessee. Slightly more than half (27,246 tanks at 9,600 facilities) were operational, and the remainder were closed. The division did not have guidelines for the number of compliance inspections each inspector should perform. As of March 1996, the division had 11 inspectors. Assuming that each inspector is capable of conducting 25 inspections per quarter (approximately 8.3 inspections per month), approximately 1,100 facilities could be inspected each year. However, assuming that each inspector is capable of performing 45 inspections per quarter (15 inspections per month), then up to 1,800 facilities could be inspected per year. In the former case, it would take up to ten years to inspect all current operating facilities, while in the latter case it would take up to five years.

The division has not directed staff to perform an adequate number of compliance inspections. The eight field offices performed compliance inspections of 497 facilities in calendar year 1994 and 816 facilities in 1995—less in two years than staff estimated could be performed in one year. During these two years, each field office had several months in which no compliance inspections were performed. Most inspection activity focused on certificate violations, including failing to register a tank or to post a certificate and delivering or accepting delivery of petroleum products to a tank without a certificate posted. The division performed 1,947 certificate inspections as

opposed to 1,313 compliance inspections during this period. Although compliance inspections may require soil or water testing to detect leaks, certificate inspections primarily check for proper paperwork. The division has not established guidelines for frequency of inspections, priority of tanks for inspection, nor the ideal mix of certificate and compliance inspections.

#### Lack of Prompt Enforcement Action

Although general operating and leak-detection requirements for petroleum underground storage tanks have been in effect since April 1990, the division has continued to conduct all compliance inspections under a voluntary program. To educate tank owner/operators about the requirements, the division invites tank owners to volunteer for an inspection. If operating violations are found, the owner/operator has a reasonable time to correct the problem before enforcement action is pursued. EPA staff had reservations regarding the voluntary program. The staff expressed concern that owner/operators would not have an incentive to comply with operating standards if violations were not penalized.

However, enforcement action apparently may have been delayed as a result of the central office's lack of information on open cases and lack of enforcement authority at the director level. As of March 1996, 423 enforcement cases resulting from compliance inspections performed in 1994 and 1995 were open at the field offices. Because the division director cannot sign an enforcement order for operating violations, the case must be referred to the central office for a Commissioner's Order if the tank owner refuses to take corrective action. The central office has detailed information only on those cases the field offices have referred for enforcement. The field offices use different methods to track and report the number of open cases, including computer spread sheets and handwritten logs. However, the field offices do not report to the central office the type of violation, case ages, or delaying factors. Therefore, central office management cannot identify lingering cases that need attention and cannot evaluate the efficiency and productivity of field staff.

The central office has also been slow in responding to enforcement requests by field staff. Field staff sent the central office 15 requests for enforcement orders for operating violations in 1994 and 1995. Of the ten cases referred for orders in 1994,

- enforcement orders for three cases (three tanks, one owner) were issued in 1995, 14 months after the request;
- enforcement orders for four cases (four tanks, one owner) were issued in 1996, approximately two years after the request;
- two cases, as of April 1996, had been granted 30-day extensions 20 months after the last such extension (interviews with field staff indicate a lack of guidance by the central office on issuing extensions); and
- one case ended in compliance without an enforcement order.

None of the five cases referred in 1995 had seen formal enforcement action as of April 1996.

## **Recommendation**

Department management should evaluate the allocation of staff for inspections of underground storage tanks to ensure adequate staffing. Division management should develop a schedule for inspections based on the number and priority of tanks for inspection and on inspection frequency needed, determine the proper mix of compliance and certificate inspections, and set time guidelines for taking enforcement action. The division should rely on publicizing operating standards to educate owner/operators, not voluntary inspections. In setting time guidelines, division management should define the circumstances under which extensions can be granted and the limits of such extensions. Field offices should periodically report the status and age of cases open at the field-office level and highlight and explain cases open longer than a reasonable length of time (e.g., six months). Division management should monitor the timeliness of enforcement at the field offices and in the central office and take corrective action as needed.

## **Management's Comments**

### Department of Environment and Conservation:

We do not concur that the regulation of underground storage tanks is inadequate.

The audit states the UST staff does not meet expectations for the number of compliance inspections each employee should perform annually. The report states for each man year of effort the division uses for inspections, 180 inspections should be performed per year. UST has ten man years dedicated to this effort; therefore, we should complete 1,800 compliance inspections per year.

During the audit, a question as to the number of inspections to be completed per man year was posed to the division. Our estimate was that each employee could complete 25 compliance inspections per quarter equaling 100 inspections per year. Given our level of effort, which is ten man years, our expected number of inspections is 1,000 per year.

In review of the compliance inspections completed over the last two years, our number of inspections completed each year has met our goals. We have set goals for the number of compliance inspections to be performed each quarter and generate a report each quarter to review how each field office is performing.

The report cites the division for slow enforcement for violations discovered during compliance audits. During the time of the audit, all enforcement actions had to be pursued through the issuance of a Commissioner's Order. As of December 1996, the Commissioner delegated authority to the division director to issue orders for compliance inspection violations which has decreased the time in issuance of orders with civil penalties.

We concur in part with this audit recommendation. We are implementing a change concerning prioritization of inspections. Over the next 20 months we will concentrate our compli-

ance efforts on those locations with older unprotected underground storage tanks. We have also established a computer tracking system for the compliance inspection program as suggested by the audit report.

Every other year UST sponsors a training program for tank owners and professionals involved in tank removal and cleanups. Additionally, UST has prepared manuals and a video to publicize operating standards, time guidelines, and compliance dates.

### **Rebuttal**

**To adequately regulate underground storage tanks, the division should inspect tanks for compliance with operating requirements in a timely manner. Using the inspection rate the department provided, the department will need approximately ten years to inspect all currently operational tanks. Ten years seems excessive.**

Petroleum Underground Storage Tank Board:

We concur with the response prepared by the department for this finding.

#### **4. Some divisions made limited use of case information to improve regulatory programs**

### **Finding**

Central office management of the Divisions of Air Pollution Control, Water Pollution Control, and Solid/Hazardous Waste Management did not appear to be using available information to evaluate and direct field offices and to improve the regulatory programs. Several analyses could be done with information already reported by the field offices (see Exhibit 8). For example, a trend analysis comparing the number of inspections and Notices of Violation (NOVs) field offices issued and the penalties they assessed could help management evaluate the relative productivity and consistency of the field offices and of the enforcement programs. A review of field offices outside the norm could help management identify what process, staffing level, or activity causes different results. A comparative analysis of the number of inspectors, inspections, and open cases could help provide a basis for allocating staff resources.

Other information could also help management monitor and improve the effectiveness of the regulatory programs. Analysis of the types of violations by geographic area could help identify areas where environmental laws and regulations are not clearly understood and where the staff and regulated community need additional training. Information on the status and age of enforcement cases open at the field offices can assure management that staff are taking proper action to facilitate and enforce compliance with regulations and can help identify cases that need special

attention. Without this information on enforcement cases, management could allow a case to remain at the field office far longer than it should, and alleged violations could continue.

**Exhibit 8**

**Types of Information Field Offices Report to Central Office**

Type of Information	Division of Water Pollution	Division of Air Pollution Control	Solid Waste Management Section	Hazardous Waste Management Section
Number of Inspections	Yes	Yes	Yes	Yes
Inspections Citing Violations	No	Yes	Yes	Yes
Number of NOV's Issued	No	Yes	Yes	Yes
Penalties Assessed by Field Office	Yes	NA (1)	Yes	NA (2)
Number of Open Cases	Yes	NA (1)	No	Yes

Notes:

1. All enforcement actions for air pollution violations are initiated by the central office, which also assesses the initial penalty.
2. Penalties are initially assessed by the central office's enforcement section, not by the field office.

**Recommendation**

Division and department management should consider the type of information necessary to monitor and evaluate the activity and productivity of field staff and the effectiveness of the regulatory programs. Department management should ensure that formal policies are adopted at the division level to facilitate the collection and analysis of data from the field offices.

**Management's Comments**

Department of Environment and Conservation:

We concur with the recommendation and have addressed the finding by each specific division.

## Solid/Hazardous Waste Management

The Division of Solid Waste Management (DSWM) currently utilizes the number of inspections and Notice of Violation (NOV) issuance to evaluate the activities of field office staff. Inspections are used to evaluate work distribution, and NOV issuance is used to track enforcement and problem areas.

DSWM is implementing a “master inspector” program in the solid waste area to assure greater consistency in the solid waste inspection program. Likewise in the hazardous waste area, the division reorganized and created the “Field Operations Support Section” to create greater consistency in hazardous waste inspection. These observations were made through the review and tracking of field office data. EPA annually uses inspection check lists and NOVs to evaluate the program. For example, NOVs issued to generators define trends in types of facilities that may have a trend toward violations. DSWM will seek to improve the review of this data as the database is expanded.

## Division of Air Pollution Control

The central office of the Division of Air Pollution Control maintains a database of all NOVs issued by our field services program and other division programs.

Subsequent to the audit, the NOV database has been modified to enable reporting of all notices issued by a given field office. Those reports are now available for the two field office area supervisors to utilize for comparison, evaluation, and trends analysis.

## Division of Water Pollution Control

A number of options are available to us to facilitate and improve our regulatory programs through proper interpretation and analysis of the information reported by our field offices. Though Water Pollution Control field office staff do not assess penalties, we feel certain that our program could benefit from trend analysis of the number of inspections and NOVs issued by our field offices.

We are very concerned about maintaining an acceptable and professional level of productivity and consistency within our field offices and our enforcement program. Further, we agree that an analysis of the types of violations by geographic area could prove helpful in the identification of areas in which environmental laws and regulations are not clearly understood and where the staff and regulated community need additional training.

Additionally, we plan to implement a comprehensive analysis plan of these factors that includes data contained within our current system of data tracking and monitoring, PCS. Through the application of the monitoring data contained within this system, in conjunction with the analysis of data already provided by our field offices, our enforcement program should become much

more effective and productive. By July 1, 1997, all of the Enforcement and Compliance staff will be reviewing their work processes and data analysis methods to ensure that all data available to us is taken into account.

Air Pollution Control Board:

We concur. This issue should be addressed by staff for review and consideration by the board.

Solid Waste Disposal Control Board:

We concur with the department's responses pertinent to Solid/Hazardous Waste matters.

Water Quality Control Board:

We concur with the department's response to this finding.

**5. Coordination of division enforcement efforts could be improved**

**Finding**

Although several regulatory divisions may deal with the same individuals and companies while enforcing environmental laws and regulations, department management has not developed formal policies to encourage and facilitate interdivisional cooperation in enforcement efforts. The only formal guideline is a memorandum of understanding between the Division of Solid/Hazardous Waste Management and the Division of Water Pollution Control concerning water pollution problems found at solid waste processing and disposal facilities (e.g., landfills).

The department's enforcement coordinator has developed, but department management has not adopted, a "multi-media checklist" which would be completed by field staff in 25 percent of routine inspections. The purpose of the checklist is to make individual inspectors conducting routine inspections alert to possible violations in other areas of environmental regulation, violations which would be reported to staff in that regulatory area. Although some division directors supported the concept of a checklist, other directors had reservations. These reservations included a lack of applicability to their programs and the needless formalizing of a communication process that was already occurring among inspectors of different divisions at the field office level. The enforcement coordinator, however, doubted that there was much communication between inspectors of different divisions regarding enforcement problems. He stated that inspectors changed divisions frequently, especially for promotions, so that focusing some effort on the enforcement activities of other divisions would not be an unfamiliar experience for many staff.

The coordinator said the checklist parallels similar efforts by the Environmental Protection Agency. Formal policies and procedures for interdivisional cooperation on enforcement matters could help improve the department's effectiveness in discovering violators.

### **Recommendation**

Department management, with help from the divisions, should develop and implement a formal policy of interdivisional cooperation. An example of such a policy is the proposed multi-media checklist. Procedures should include a mechanism for formally communicating to the relevant staff possible violations noted by staff from another regulatory area.

### **Management's Comments**

#### Department of Environment and Conservation:

We concur in part. The department recognized the need for greater enforcement coordination and created a new position specifically dedicated to that coordination. An experienced environmental manager was appointed to that position. The department is committed to interdivisional cooperation and will continue to address this matter through a trial implementation of the multi-media checklist and cross-training of staff. Full implementation of the multi-media checklist will be enforcement caseload dependent.

The audit indicates that there is little formal requirement for multi-media enforcement; however, both Solid/Hazardous Waste Management and Water Pollution Control Divisions' Memorandum of Agreement and the multi-media checklist were created by this department in conjunction with division input. The multi-media checklist was generated by the enforcement coordinator with input from all regulatory divisions and field offices.

#### Air Pollution Control Board:

We concur. This issue should be addressed by staff for review and consideration by the board.

#### Solid Waste Disposal Control Board:

We concur with the department's responses pertinent to Solid/Hazardous Waste matters.

#### Water Quality Control Board:

We concur with the department's response to this finding.

## **6. More could be done to protect the public interest**

### **Finding**

The department and the environmental boards could do more to protect the public interest. In any form of regulation, the regulator must avoid favoring a particular interest so that it can protect the public interest and retain citizens' and the regulated community's confidence in its ability to enforce the law and regulations fairly and consistently. In addition, an environmental regulator must balance two public goods: monitoring and enforcement must protect the environment while not unnecessarily impeding the economic development of the state. Four areas for improvement were identified: (1) the lack of policy or guidelines to promote a proper balance between environmental protection and economic development, (2) deficiencies in conflict-of-interest policies, (3) the lack of public members on certain environmental boards, and (4) failure to establish a State Compliance Advisory Panel as required by the federal Clean Air Act.

### **Department Response to Environmental Advocacy Report**

Attention to the criticisms and concerns of environmental advocacy groups can help provide department management a citizen perspective on the operations and effects of the regulatory programs. An environmental advocacy group, Save Our Cumberland Mountains, released a report on landfill enforcement in November 1995 and transmitted that report to the department. The report cited deficiencies in the Division of Solid/Hazardous Waste Management's enforcement activities, including inconsistent interpretation and application of enforcement policy. A meeting was held between organization representatives and department officials in February 1996. After that meeting, the division reported taking several actions to address the problems identified, including increased training for staff, more detailed reporting on inspections, and continued development of an enforcement manual. The division assigned staff to address these problems. However, progress in implementing solutions has been slow. Although the division was in the process of developing a comprehensive enforcement policy manual, the manual had not been approved by the department as of February 1997. A training program for inspectors was also planned but had not been implemented. The division was working on a data management system that would allow inspection results to be electronically transferred from field offices to the central office. However, meetings by division staff to develop such a system had not appeared to produce real progress because of the inability to reach a consensus on what types of information needed to be shared between offices.

### **Environmental Protection Versus Economic Development**

The department and environmental boards do not have a formal policy or guidelines to help staff and board members find a proper balance in the individual cases heard. The recent disagreement between the Division of Air Pollution Control and the U.S. Department of the Interior on air quality standards in the Great Smoky Mountains National Park illustrates the need for such

guidance. The Department of the Interior appealed the division's decision to grant a lime manufacturing company in East Tennessee a permit to operate kilns near the park on the grounds that the kilns' emissions would significantly worsen the air quality in the park. The two parties developed a memorandum of understanding in April 1995 which called for the division and the park service to consult on future permits, the park service to provide current clean air standards, and the division to require permit applicants to evaluate the effect of proposed emissions on air quality.

Representatives of the Tennessee Association of Business opposed the memorandum and claimed that it represented rulemaking without due process. In March 1996, the Air Pollution Control Board reconsidered the memorandum of understanding. Letters to the board from the U.S. Environmental Protection Agency, the Department of the Interior, and several environmental advocacy groups supported the memorandum. A letter from the Commissioner of the Tennessee Department of Economic and Community Development asked that the memorandum be rescinded, saying that Tennessee would be less competitive in attracting economic development than its neighboring states who did not have to comply with similar memoranda. The board rescinded the memorandum of understanding and asked that the division director develop a new agreement which would involve other states as well as Tennessee. To help resolve the differences between the division, board, and Department of the Interior, the Commissioner of the Department of Environment and Conservation issued a directive in April 1996 prescribing cooperative efforts similar to the provisions of the initial memorandum of understanding. Department of the Interior staff expressed satisfaction with the timeliness and intentions of the directive but also had reservations. The staff stated that the directive involved a more limited geographical area than the memorandum or the state's own guidance documents prior to the signing of the memorandum. The directive also did not provide for coordination between the two departments. As a result, conflicts between the department and the Department of the Interior could occur since each department's responsibilities related to the issuance of permits were not clearly outlined.

In March 1997, a revised draft memorandum of understanding was approved by the Department of Environment and Conservation and the Department of the Interior. The board approved the memorandum in May 1997. One limitation is that it would cease to be in effect if another state belonging to the Southern Appalachian Mountains Initiative (SAMI) does not sign it by December 31, 1998. SAMI is an organization of states dedicated to protecting the environmental quality of the Appalachian Mountains.

### Conflict-of-Interest Policies

Although the department and three major environmental boards attached to it have conflict-of-interest standards either in statute or policies, these standards do not require initial or periodic disclosure of financial, personal, and professional interests that might conflict with job and board responsibilities. The department's policy describes types of direct and indirect conflict-of-interests employees may encounter and must disclose if they arise. However, the policy does not require employees to formally acknowledge or to periodically review the policy and does not

address possible conflicts arising from the employment or financial investments of family members.

The Air Pollution Control Board's conflict-of-interest policy was adopted as a board order; it applies to board members and the board's technical secretary (i.e., the Director of the Division of Air Pollution Control). The policy defines allowable limits on related investment income and prohibits voting on issues related to one's employer but does not address potential conflicts concerning family members.

Enabling statutes of the Solid Waste Disposal Control and the Water Quality Control Boards, recognizing that board members are often drawn from the regulated community, prohibit board members from voting on issues in which they have a conflicting interest.

Conflict-of-interest policies are intended to ensure that the public interest is protected and that employees and board members are independent of the entities they regulate. No statute requires written disclosure, and nothing came to our attention during this audit to indicate that staff or board member decisions were influenced by their personal, professional, or financial interests. However, disclosure—at the time of employment, board appointment, or board decision making—of financial interests, prior employment, employment of immediate family members, and other matters that might conflict with board and staff responsibilities could alert the board and management to potential conflicts which could be discussed and resolved before they have an impact on decisions. Requiring disclosure periodically would remind the individual to acknowledge such conflicts and avoid them when possible.

### Public and Conservation Interests in Board Membership

Membership of five environmental boards attached to the department was reviewed to determine whether public and conservation interests, as well as interests of the regulated community, were represented. Three boards—Air Pollution Control, Solid Waste Disposal Control, and Ground Water Management—have no consumer/public members; the Ground Water Management Board has no member specifically representing conservation interests (see Exhibit 9). Consumers represent only 6 percent of board membership overall, and conservation interests represent only 10 percent. Representatives of the regulated community totaled 27 of the 49 members (55%), including 20 representatives of business and agriculture and seven representatives of local government.

The relatively small number of board members representing public and conservation interests, and their absence on some boards, could favor or appear to favor the interests of the regulated community and could reduce the boards' credibility and effectiveness.

## Exhibit 9

### Environmental Board Membership by Group Represented April 1996

Board	State Ex Officio	Business/ Agriculture	Local Gov't	Consumer/ Public	Academic/ Professional	Conservation	Totals
Air Pollution Control	2 (14%)	5 (36%)	2 (14%)	0	3 (21%)	2 (14%)	14 (100%)
Water Quality Control	3 (30%)	3 (30%)	2 (20%)	1 (10%)	0	1 (10%)	10 (100%)
Solid Waste Disposal Control	2 (18%)	5 (45%)	2 (18%)	0	1 (9%)	1 (9%)	11 (100%)
Petroleum Under- ground Storage Tank	1 (11%)	4 (44%)	1 (11%)	2 (22%)	0	1 (11%)	9 (100%)
Ground Water Management	2 (40%)	3 (60%)	0	0	0	0	5 (100%)
Totals	10 (20%)	20 (41%)	7 (14%)	3 (6%)	4 (8%)	5 (10%)	49 (100%)

Source: Authorizing statutes in Sections 68-201-104, 69-3-104, 68-211-111, 68-215-112, and 69-11-107, *Tennessee Code Annotated*.

#### Advisory Panel Not Established

The Division of Air Pollution Control has not established a State Compliance Advisory Panel as required by the 1990 amendments to the federal Clean Air Act. The panel is intended to review and render advisory opinions on the effectiveness of the department's Small Business Assistance Program and work with the Small Business Advocate (an ombudsman), both established by the division pursuant to the 1990 amendments.

The Small Business Assistance Program is responsible for providing support and technical assistance to small businesses in their efforts to comply with the Clean Air Act. The ombudsman is to provide comments and recommendations to the Environmental Protection Agency and to state and local air pollution control authorities regarding the development and implementation of regulations that affect small businesses. The ombudsman is also to review for clarity information provided to participants.

By federal statute, the State Compliance Advisory Panel is to consist of four owners or representatives of small businesses, chosen by the leadership of the state legislature; two members representing the public, chosen by the Governor; and one member representing the Division of Air Pollution Control, appointed by the commissioner. Because the panel is intended to be the mechanism for including small business owners in the program, the absence of the panel prevents small business owners from having a direct voice in the program's development as intended by the Clean Air Act.

## **Recommendation**

Department management should develop a formal policy to guide staff when regulatory actions appear to conflict with the state's economic development. The policy could recognize that the department's primary responsibility in environmental regulation is to protect the environment. Specific guidelines may be difficult to develop, but confirmation of the department's primary responsibility could promote a proper balance of these conflicting public interests.

Department management should complete corrective actions resulting from the report of Save Our Cumberland Mountains.

Department management and the environmental boards should consider revising their conflict-of-interest policies to require initial and periodic disclosure of personal, professional, and financial interests that could conflict with regulatory responsibilities; disclosure could be made upon appointment or employment and annually thereafter and during board deliberations. In addition, department management should consider requiring staff to sign a statement acknowledging the department's conflict-of-interest policy and their intent to comply with the policy and to promptly advise the department of any potential conflicts.

To ensure that environmental boards adequately function as the legislature intended, the General Assembly may wish to evaluate the membership of the Air Pollution Control Board, the Solid Waste Disposal Control Board, the Ground Water Management Board, and the Water Quality Control Board to determine if the boards' have balanced public, conservation, and industry representation. Balanced representation helps ensure that compliance with environmental regulations is maintained.

Management of the department, or the Division of Air Pollution Control, as appropriate, should take steps to establish the State Compliance Advisory Panel, as required by the 1990 federal Clean Air Act amendments.

## **Management's Comments**

### Department of Environment and Conservation:

We concur in part with the recommendation. The department and the boards are charged with carrying out the public policy set by the legislature. Neither the department nor the boards have the legal authority to carry out some of the suggestions made in this finding and recommendation.

### Department Response to Environmental Advocacy Report

We agree that attention to the criticisms and concerns of environmental advocacy groups can help provide department management a citizen perspective on the operations and effects of

the regulatory programs. Citizen and environmental groups have extremely important roles in efforts such as the department's 2000 Initiative, which was created to address toxic pollutants in our environment.

Much has been done to implement the recommendations of the Save Our Cumberland Mountains group. The Division of Solid Waste Management is currently critiquing a revised draft enforcement policy. A general policy manual has been completed and implemented in Solid Waste Management offices to help clarify certain complex or gray areas. Division inspectors have participated in the department training and certification program for landfill operators. The development of an internal training program is continuing in an orderly and sound manner. Each environmental field office now has access to e-mail. The division will continue its efforts to implement electronic data transfer as this capability becomes available in field offices.

### Environmental Protection Versus Economic Development

Balancing economic concerns with the public mandate of environmental protection is a realistic, if not a legal, departmental concern. This concern is at the core of most, if not all, regulatory evaluations.

The comments concerning the previous Memorandum of Understanding between the U.S. Department of the Interior and the State of Tennessee, however, do not adequately explain reasons for developing and using policies that balance economic development and environmental protection.

We believe that *processes* as much as *policies* are needed to create successful policy outcomes that balance economic development with environmental protection. Recent support by leading environmental interests and business and local community leaders indicates that the department's policy concerning new air quality impacts near Class I federal lands has been successful.

As we develop departmental policies, we carefully consider (1) the legal roles of the boards, the department and the General Assembly in policy development; (2) the extent to which such policy should be articulated (i.e., new policy guidelines can become too inflexible and/or an administrative burden); (3) a recognition of the evolutionary and dynamic nature of public policy; and (4) departmental roles between the Department of Economic and Community Development and this department.

### Conflict-of-Interest Policies

It should be noted that the boards are made up of people who have expertise in the area. In order for them to apply their expertise, there is, to a certain degree, an inevitable conflict of interest. This issue is adequately addressed by law. Pursuant to the Tennessee Uniform Administrative Procedures Act, conflicts of interests are specifically addressed by T.C.A 4-5-

302(a) as follows: “(a) Any administrative judge, hearing officer or agency member shall be subject to disqualification for bias, prejudice, interest, or any other cause provided in this chapter or for any cause for which a judge may be disqualified.” The standards for disqualification of a judge are specified in the Tennessee Rules of Court. Arguably the department and/or the boards would be acting beyond their authority if they attempted to adopt a conflict-of-interest policy that was different from that established by law.

Regarding the conflict-of-interest policy for employees, the department will review and evaluate the need for having each employee sign a statement reflecting knowledge of the conflict-of-interest policy.

### Public and Conservation Interests in Board Membership

The composition of each board is governed by statute. Only the legislature has the power to make a change. The department will appoint members to the boards as directed by the General Assembly.

Staff make every effort to ensure that all board meetings are held in accordance with the Open Meetings Act. Public notices of meetings are mailed out each month and are announced on the department’s Interest Web site. Additionally, each board takes particular care to consider all public comments offered to the board.

### Advisory Panel Not Established

The creation of the Compliance Advisory Panel is a statutory mandate of the 1990 federal Clean Air Act amendments upon the states.

We do not concur with the statement that “the absence of the panel prevents small business owners from having a direct voice in the program’s development as intended by the Clean Air Act.” Educational and technical support outreach to the small business community has been accomplished through employer trade associations and with the department’s on-site technical assistance to individual employers. The lack of a compliance panel has not diminished service and employer interface with program support services.

Tennessee has been a national leader in satellite broadcast of educational workshops and preparation of understandable workbooks for thousands of small businesses, such as dry cleaners, print shops, vapor degreasing operations, chromium electroplaters. We work very closely with business trade associations to ensure their input into not only educational activities, but also general permitting being processed now for dry cleaners and for other small business groups already targeted by EPA regulations. The department will continue to evaluate the need for a Compliance Advisory Panel.

Air Pollution Control Board:

We concur in part. The board was established with certain seats designated for industry representatives. This representation is appropriate. The board will consider the recommendations of this finding at a future meeting.

Board of Ground Water Management:

We concur in part. The Ground Water Management Board is an advisory board established to advise the commissioner on rulemaking and on issuing licenses to persons applying for drilling, pump, and water treatment device installers licenses. Members of the board are appointed in accordance with the statute and only the legislature can change its composition. The statute also limits the activities of the board.

In regard to conflict of interest issues, the statute specifies that the Governor will appoint three persons actively engaged in well drilling to be board members. It also specifies that two departmental officials will be ex officio members of the board. Obviously, drillers have a personal interest in rules developed and who obtains licenses. The driller members bring considerable knowledge of the drilling practices to the process not held by members of the public or by the ex officio members. The minutes of the board meetings reflect that driller members of the board recuse themselves when dealing with potential competitors' requests for licenses. Attorneys for the department will be asked to draft a conflict of interest statement for board members to consider. Staff members have been subject to a conflict of interest policy for years.

Solid Waste Disposal Control Board:

We concur with the department's responses pertinent to Solid/Hazardous Waste matters.

Water Quality Control Board:

We concur with the department's response to this finding.

**7. Underground Storage Tank Fund may become insolvent**

**Finding**

The Tennessee Petroleum Underground Storage Tank Fund is projected to become insolvent by July 1997 if fund revenues do not increase and/or expenditures do not decrease. The fund's net unobligated balance declined from \$31.8 million on June 30, 1992, to \$2.4 million on June 30, 1996; approximately \$20 million of the fund is obligated for pending claims (see Exhibit

10). Although Section 68-215-109, *Tennessee Code Annotated*, requires the Underground Storage Tank Board to set tank registration fees based on the fund's financial needs, the board has not raised the \$125 annual fee set in 1990. Basing the fee schedule on risk and restricting the fund's liability to cleaning up the environmental damage caused by leaking tanks could improve the fund's financial status.

The fund was established in 1988 to provide for the clean-up of contamination caused by leaking underground tanks storing petroleum products. According to Division of Underground Storage Tanks staff, Tennessee had more than 52,000 tanks at 19,000 locations in 1995; 28,000 of the tanks actively stored petroleum. More than 2,300 leaking tank problems had been found; 40 percent of the leaks caused groundwater problems and the average site clean-up cost was \$125,000.

Revenue for the fund includes the annual registration fee of \$125 per tank and an environmental assurance fee of four-tenths of one cent per gallon on each gallon of petroleum products manufactured in and imported into Tennessee. All fees, civil penalties, and damages collected as a result of the division's enforcement activities are deposited to the fund.

Under Section 68-215-111, *Tennessee Code Annotated*, tank owners who pay the annual registration fee and comply with division rules and regulations may apply to the fund for reimbursement of clean-up costs resulting from leaking tanks. Tank owners may also apply for reimbursement for third-party claims, which are any civil actions charging damages to person or property as a result of contamination from leaking tanks. The fund will provide coverage for such claims involving bodily injury and/or property damage caused by leaking tanks. Fund liability is limited to \$1 million per site per occurrence. Owners must pay deductibles, based on the number of tanks owned, before receiving compensation.

<u>Deductible to Be Paid by Tank Owner</u>		
<u>Number of Tanks Owned</u>	<u>Clean-up Claims</u>	<u>Third-Party Claims</u>
1 to 12	10% of cost, maximum \$10,000	\$10,000
13 - 999	20% of cost, maximum \$20,000	\$25,000 - \$50,000
1,000 and above	\$50,000	\$150,000 - \$300,000

Source: Section 68-215-111, *Tennessee Code Annotated*.

Although the fund acts as an insurance policy against damages caused by leaking tanks, its fee structure does not take into consideration risk factors such as the age of the tanks, occurrences of tank leakage, tank materials, or geological factors (e.g., soil type). If the fund were priced like an insurance policy, fees would be based on the amount of risk the tanks transferred to the fund. Facing similar financial difficulties, the North Carolina Underground Storage Tank Trust Fund began charging tank fees based on tank capacity (\$300 for tanks equal to or greater than 3,000 gallons and \$200 for tanks less than 3,000 gallons) as of April 1996 and was considering an increase in tank fees. Florida, on the other hand, was seeking to reduce its responsibility in this area and emphasizing private insurance.



As of June 30, 1996, the division had received 5,515 claims totaling almost \$138 million and had paid 4,630 claims totaling approximately \$83 million (see Exhibit 11). The 819 claims awaiting processing, which represented a six-month backlog in claim processing, had a dollar value of \$14.1 million, an average of \$17,236 per claim. However, the six third-party claims pending court decision represented a \$5.8 million contingent liability for the fund—an average of almost \$1 million per claim. The one third-party claim paid by the division totaled \$388,077. Third-party claims not only represent larger claims but also broaden the liability of the fund beyond cleaning up environmental damage because a suit could be filed against a tank owner for decreased value of property adjacent to property with environmental damage. Although the court may not uphold the third-party claims or may not award the amount requested, it is clear that third-party claims represent a greater liability to the fund than do claims for cleaning up environmental damage.

**Exhibit 11**

**Department of Environment and Conservation  
Underground Storage Tank Claims Received & Claims Paid  
Fiscal Years 1991 Through 1996**

	<u>Number of Claims Received</u>		<u>Value of Claims Received</u>
1990/91	57	\$	4,685,069
1991/92	224		10,981,458
1992/93	728		25,814,515
1993/94	1,223		37,153,510
1994/95	1,517		28,256,105
1995/96	1,766		30,974,263
<b>Total</b>	<u><u>5,515</u></u>	<b>\$</b>	<u><u>137,864,920</u></u>
	<u>Number of Claims Paid</u>		<u>Amount Paid</u>
1990/91	28	\$	1,116,195
1991/92	106		3,762,116
1992/93	519		14,123,833
1993/94	1,036		23,709,557
1994/95	1,535		22,526,204
1995/96	1,406		17,820,244
<b>Total</b>	<u><u>4,630</u></u>	<b>\$</b>	<u><u>83,058,149</u></u>

Source: Data compiled by staff of Division of Underground Storage Tanks, Department of Environment and Conservation

If the Tennessee fund were to become insolvent, possible consequences could include (1) loss of financial assistance to tank owners to comply with requirements of the Tennessee Underground Storage Tank Act, which could force some companies out of business; (2) slowed or stopped clean-up activity, resulting in further environmental damage; and (3) slowed or stopped real estate transactions because of property contamination.

### **Recommendation**

The Underground Storage Tank Board, in conjunction with the department, should propose, and the General Assembly should consider, legislation to restructure fees for participating in the Petroleum Underground Storage Tank Fund. Fees and deductibles should be based on the amount of risk tank owners transfer to the fund. Risk factors to consider include the number of tanks owned, age of the tanks, history of leakage, tank materials, and geological factors.

The General Assembly may wish to consider adding language to Section 68-215-111, *Tennessee Code Annotated*, clarifying what types of bodily injury and/or property damage the fund should cover in third-party claims. The General Assembly may wish to exclude from fund coverage damages not directly related to environmental damage (e.g., loss of property value).

### **Management's Comments**

#### Department of Environment and Conservation:

We concur. The department agrees with the Comptroller's analysis of the pending fund crisis. The Tennessee Petroleum Underground Storage Tank Board advised the legislature of this problem in 1995 and 1996. The department provided the legislature with estimates of future liability each of the last four years. The General Assembly is currently considering legislation that would leverage the revenues of the UST fund through issuance of revenue bonds to allow the fund to continue to meet its liabilities.

#### Petroleum Underground Storage Tank Board:

The board agrees with the findings. The board and its individual members worked with the state legislature during the 1997 session to solve this potentially serious problem. In response, the legislature authorized the department to use bonds in an amount not to exceed fifteen million dollars to cover a portion of projected fund shortfalls.

## **8. There are no formal policies for calculating economic benefit of noncompliance**

### **Finding**

According to department staff, none of the environmental regulatory divisions have formal procedures for calculating the economic benefit to violators for failure to comply with environmental statutes and regulations. By statute, several divisions can consider economic benefit when assessing civil penalties for violations of environmental laws and regulations (Section 68-201-106 for the Division of Air Pollution Control, 68-202-506 for the Division of Radiological Health, 68-211-117 and 68-212-114 for the Division of Solid/Hazardous Waste Management, 69-3-115 for the Division of Water Pollution Control, 68-221-713 for the Division of Water Supply, and 68-215-121 for the Division of Underground Storage Tanks). Some of these divisions use informal methods to calculate the benefits, and other divisions make no attempt. U.S. Environmental Protection Agency (EPA) staff stated that their computer model to calculate the benefit of delaying correction of violations could be used. However, division staff stated that the EPA model was too difficult to use.

If the department assessed the economic benefit to violators, it could adjust its penalties to provide a more effective deterrent to violations. Failure to consider the economic benefit of non-compliance gives violators an economic advantage over their competitors who had to incur the costs of complying with environmental regulations.

### **Recommendation**

The department should develop formal guidelines to calculate economic benefit when assessing civil penalties. Such guidelines may need to be tailored to conditions in each environmental regulatory division. Divisions not currently calculating economic benefit should begin to do so when assessing penalties.

### **Management's Comments**

#### **Department of Environment and Conservation:**

We concur in part. It was suggested that the divisions should determine a formal method to calculate the economic benefit gained by lack of compliance. We agree that this would be desirable; however, the practical application of this suggestion is difficult. The EPA model for economic benefit (BEN/ABLE) has a number of inherently incorrect assumptions. The method has been challenged in sister states and has not withstood the judicial test as an accurate and effective calculation of economic gain. Also, division personnel would have to substantially broaden the type of information collected during the inspection process as we do not currently collect data on the actual cost of operation. Thus, there is not a pool of information available from which to review and compare to ascertain actual economic gain by violation of a statute.

Such information and data must be compiled to achieve this goal and then the division would need to properly analyze the data. The Divisions of Water Pollution Control, Water Supply, and UST do not currently employ accountants for this purpose. A diagnostic accountant would be necessary to properly evaluate financial information. Internal Audit has assisted divisions with such analysis in the past.

Air Pollution Control Board:

We concur. This issue should be addressed by staff for review and consideration by the board.

Solid Waste Disposal Control Board:

We concur with the department's responses pertinent to Solid/Hazardous Waste matters.

Water Quality Control Board:

We concur with the department's response to this finding.

**Bureau of Conservation**

**9. Parks maintenance system needs improvement**

**Finding**

The department's maintenance of state parks has several weaknesses. Only a small proportion of the state parks' major maintenance needs (projects costing \$2,000 to \$100,000) are funded; the process for identifying and ranking maintenance needs tends to neglect preventive maintenance; and the practice of restricting the geographic range of regional centers' work puts outlying parks at a disadvantage. Lack of maintenance can allow facilities to deteriorate further and require more costly repair, make the facilities unavailable or unattractive to potential users, and keep revenue-producing facilities out of service for longer periods.

Funding

Funding is allocated for only a small proportion of the state parks' major maintenance needs. Funds for major maintenance at state parks declined from about \$4.4 million in 1988 to \$2.5 million in 1996 while estimated costs for top-priority maintenance needs remained fairly con-

stant at around \$8 million. Approximately 54 percent of top-priority major maintenance needs were funded in 1988, and only 30 percent were funded in 1996. Major maintenance needs are identified by the park manager (and possibly the park maintenance supervisor) together with regional maintenance staff and are ranked at three levels; only the highest level is included in budget requests.

Public Chapter 889, passed by the Tennessee General Assembly during the 1996 session, sets aside 6 percent of revenues from park fees for maintenance, including furnishings, fixtures, and equipment. The legislation is significant because it establishes a more solid formula for maintenance funding. However, according to the department, gains from the \$1.4 million to be generated by Public Chapter 889 are being offset by a \$1.1 million reduction in appropriations effective July 1996. Therefore, funding for state park maintenance is estimated to increase only about \$300,000 per year. Management, in its September 1996 *Park Maintenance Funding Needs* report, emphasized the need for maintenance funds: "As facility maintenance needs have increased, continued inadequate funding has created a cumulative effect that is resulting in virtually every park showing signs of wear and disrepair."

### Preventive Maintenance

Preventive maintenance is neglected because major maintenance needs are more easily identified by visual inspection, only the most urgent needs are considered for funding, and emergency needs often displace preventive maintenance. Four regional maintenance centers perform major maintenance at state parks. Although park staff schedule and perform routine preventive maintenance such as changing air filters, larger projects such as exterior painting may be delayed until the facilities have deteriorated enough to require repair. Repair is likely to be more expensive than maintenance in dollar amount and in time lost.

The department has not adopted a comprehensive plan for preventive maintenance. Such a plan (recommended by the performance audit report on the Department of Conservation, issued by the Division of State Audit in 1990) would include the following information:

- An inventory of all assets to be maintained, their characteristics, and estimated life, with annual updates
- Standards and schedules for frequency and type of maintenance
- Historical information on past maintenance and any warranties (e.g., on materials)
- Reports comparing planned versus actual maintenance and costs

### Outlying Parks

One of the purposes of regional maintenance centers is to perform major maintenance at outlying state parks. However, the centers do not accept projects more than one and one-half hours' drive away unless the projects are expected to take at least one week to complete. This

policy does not present a problem for parks close to urban areas because private contractors can be found to complete the projects. Parks in outlying areas, however, have difficulty finding contractors willing to travel to the area to complete projects involving small sums of money.

Current practice might be modified so that the regional maintenance centers can undertake projects in outlying parks. In addition or as an alternative, the department may be able to group parks in a contract for specified projects so that a contractor would bid on providing services for a group of parks that includes an outlying park.

### **Recommendation**

Department management should consider allocating more funds to major maintenance at state parks. Parks management should develop and implement a comprehensive plan for preventive maintenance, including a schedule for completion based on priority, and periodically evaluate progress in meeting the schedule. To make major maintenance services more accessible to state parks in outlying areas, maintenance centers should consider providing services to parks in remote areas of their region when contracting is not feasible. In addition, parks management could consider developing a contract for a group of parks, including outlying parks as well as parks near an urban area.

### **Management's Comment**

We concur. The effectiveness of our major maintenance program is directly related to the availability of funding. Funding for major maintenance has consistently been placed at a high priority level in the department's budget request for the past several years.

To enhance preventive maintenance, we have started an aggressive, unannounced inspection of state parks. In the past 11 months, each park has been inspected in this manner twice. Many minor problems are being eliminated through this process.

Outlying parks are not neglected because of their distance from regional maintenance centers. Two examples in recent months are the work that is being done at the Hiwassee/Ocoee Park by the East Tennessee maintenance crew and work at T.O. Fuller by the West Tennessee maintenance crew. We are currently considering more contracting as an option.

## **10. Unsurveyed park boundaries allow encroachments**

### **Finding**

The department's Division of Real Property Management is responsible for identifying and marking boundary lines for parks, natural areas, and historical and archaeological sites owned by

the state and for documenting encroachments on those boundaries. However, the division does not have a formal plan for completing boundary surveys for state parks and other areas with boundaries that have not been marked and/or surveyed and does not adequately monitor the completion of such surveys. In addition, the division has not compiled and analyzed available data to determine trends in types or locations of encroachments and methods for resolving them.

Boundary Surveys

According to park managers and division staff, many state parks have unmarked boundaries. This problem, however, is not easily resolved. Deeds cannot always be used to establish boundaries because some original deeds describe boundaries in terms of a fence or rock or another changeable feature. Surveys are performed to determine the area of a tract of land and the lengths and directions of bounding lines, and to delineate the whole on paper so that ownership can be clearly determined. Park lands that share borders with land under development may need priority for surveying to prevent residential and commercial development from encroaching on state-owned land.

The division employs one survey team (three staff) to survey and mark park boundaries, but no comprehensive plan for surveying unmarked or disputed boundaries has been developed. Instead, division management decide the areas to be surveyed for the year. Although staff said that they are aware of the park boundaries not yet surveyed, they could not provide a list. Management cited a lack of staff resources as an obstacle to completing scheduled and emergency surveys. However, management has not compiled and analyzed surveyors’ worklogs to determine the amount of time and staff needed to survey different terrain (e.g., wooded, swampy, hilly areas). Such a study would seem helpful considering the great variation in the number of work hours applied to surveying, the number of linear feet surveyed, and the number of linear feet surveyed per work hour in the past four calendar years (see table below).

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<u>Calendar Year</u>	<u>Linear Feet Surveyed</u>	<u>Work Hours</u>	<u>Linear Feet Per Hour</u>
1992	86,992	735	118
1993	147,410	844	175
1994	239,597	1,472	163
1995	139,200	1,184	118

Source: Data for 1992 through 1994 from the *Division of Real Property Management Operations Manual*; 1995 data from the division director.

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By developing estimates of the amount of time a survey of particular terrain should take, management might more closely estimate the number of tracts that could be surveyed within the year and evaluate the productivity of survey staff. Using these time estimates, management could

develop a comprehensive plan that lists all tracts needing to be surveyed, assign a priority level for each tract, and project when each tract will be surveyed. Management could compare planned surveys with actual surveys to evaluate the division's progress in establishing clear boundaries for state-owned land.

Seven states were contacted about their processes for surveying park boundaries and handling encroachments. Alabama and Arkansas use in-house teams to survey park boundaries, and North Carolina, South Carolina, Virginia, and West Virginia contract for surveys. Florida developed a long-term plan and surveyed all state parks using contractors and an in-house survey team. To prevent logging encroachments, Arkansas state law requires persons involved in logging operations to obtain a boundary survey before beginning and to pay treble damages for encroachments.

### Encroachment

Encroachment occurs when individuals or companies use state land as if it belonged to them. The encroachment, whether intentional or unintentional, deprives the state's citizens of the intended use of state land and can endanger the natural environment and affect wildlife and vegetation. Park staff cited logging, hunting, pasture fencing, and construction as ongoing encroachments. Auditors observed personal residences, outbuildings, and a pool on land apparently owned by the state. Park managers and rangers are responsible for enforcement when individuals or companies encroach on state-owned land, but they cannot issue citations unless park boundaries have been legally established and clearly marked.

When an encroachment is found, the division contacts the encroaching land owner in person or by letter or, if the encroacher is unknown, the division posts a notice on the property. Some land owners voluntarily remove their encroaching structures from state land after this notification. If not, the division may remove and/or impound the encroaching structure, after giving proper notice. If the division cannot resolve the case, the matter is referred to the department's Office of General Counsel, which can refer the case to the Attorney General's Office for litigation and/or settlement. In settlement, an encroacher could be allowed to substitute another tract of land (with the approval of the State Building Commission). There are no written guidelines for resolving encroachment violations; department legal staff stated that the office is currently working with the Attorney General's Office to formulate such a process and policy.

Division staff document encroachment violations, by state park, in paper files and on a computer database. However, the division has not compiled data on encroachment violations to identify trends in types and locations of encroachment and methods of resolution. Division staff provided a list of 35 encroachment violations identified in five counties in 1995; however, although some were identified by type of violation, others were identified only by the name of the encroacher. The list did not include actions taken to resolve the encroachment and no resolutions were indicated.

## **Recommendation**

The Division of Real Property Management should compile a comprehensive list of unsurveyed land, develop estimates for the time a survey of particular terrain should take, and set priorities for surveying the unmarked boundaries of state parks and related lands. Based on the time estimates and priority assigned, the division should establish a schedule for completing boundary surveys of parks and related lands. Division management should compare estimated to actual time for surveying to refine estimates and evaluate staff productivity. Division and department management should compare the number and priority of tracts surveyed with the number and priority of tracts scheduled to be surveyed to evaluate division progress in completing surveys to help prevent and detect encroachments.

The department's Office of General Counsel should continue to work with the Attorney General's Office to develop an appropriate policy and process for handling encroachment violations.

Division management should specify what information on encroachment violations is to be included so staff can document and monitor the status and resolution of such violations. Data should be compiled to identify trends in types and locations of violations and to suggest resolution methods, and the data should be periodically reported to management to help determine what other intervention may be required.

## **Management's Comment**

We concur and will make efforts to implement the recommendations as appropriate.

### **11. Analysis of state park costs is inadequate**

#### **Finding**

Management has not compiled, analyzed, and reported state park costs in terms that allow an evaluation of the parks' economic self-sufficiency and contracted services' cost-effectiveness, and this lack of analysis undermines management's ability to control state parks' costs. The department has not included total costs in calculating the extent to which state park revenues cover costs and has not compiled the costs of retail activities to compute a cost-benefit ratio for in-house versus contractual management. Further, food and some operating costs at state parks are higher than industry averages.

Although the parks division reported that revenues covered 55 to 62 percent of the state parks' expenses in fiscal years 1995 and 1996, the calculation includes only direct costs (see Exhibit 12). It does not include the cost of the parks' central office division—indirect costs which total approximately \$2.5 million annually—nor the cost of the administrative functions provided

**Exhibit 12**

by the department's Administration, which could be considered overhead. In addition, financial statements do not include the cost of maintenance personnel, park rangers or park managers, or the central office retail division in computing the cost of park restaurants, marinas, inns, etc. If the full costs of operations are not computed, it is impossible to determine the true self-sufficiency of a park or of individual retail activities or to compare the relative cost and benefit of contractual versus in-house management of retail activities.

A consultant's report issued in November 1995 indicated that certain costs in Tennessee state park facilities were higher than industry standards. The Highland Group, hotel investment advisors based in Atlanta, Georgia, was retained by the department to study the financial feasibility of proposed resort facilities at four state parks. The consultant reviewed the four parks and, as a part of the review, compared the parks' costs to industry standards for resort hotels.

- The consultant reported that three parks significantly exceeded the industry standard ratio of 35 percent food cost to revenue and that three parks significantly exceeded the U.S. average of \$1,384 annual per room energy costs for hotels in 1995 (see table below).
- The consultant reported that the food cost ratio was higher in part because the average guest check was low compared to private resort hotels.
- The consultant reported that the parks' housekeepers cleaned fewer guest rooms than the industry average of 16 to 18 guest rooms per day and that labor costs were higher than the average. The consultant assumed that because of the poor condition of the rooms, they took longer to clean. Maintenance requirements were considered heavy because of the condition of the buildings and equipment.

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<u>State Park</u>	<u>Food Cost as Percent Of Total Revenue</u>		<u>Annual Energy Cost of Rooms</u>	
	<u>1995</u>	<u>Points Over 35% Industry Standard</u>	<u>1995</u>	<u>Amount Over Industry Avg. of \$1,384</u>
Montgomery Bell	50%	15 points	\$3,670	\$2,286
Natchez Trace	45%	10 points	\$4,310	\$2,926
Fall Creek Falls	40%	5 points	\$3,460	\$2,076
Paris Landing	51%	16 points	\$1,437	\$ 53

Source: November 1995 report by the Highland Group to the Department of Environment and Conservation.

Other state parks also have higher food cost ratios. In its financial reports, the department computed a total of 47 percent food costs (as percentage of total revenue) for the nine state park restaurants in fiscal year 1995 and 42 percent for fiscal year 1996. The same reports showed an operating deficit of \$22,069 for the nine restaurants in fiscal year 1995 and an operating profit of \$196,834 in fiscal year 1996.

In a report released in March 1996 on Pickwick Landing State Park, the department's internal audit section cited inadequate financial controls over the restaurant, including failure to reconcile restaurant tickets with cash register sales, alteration of restaurant tickets (e.g., number of buffets ordered, number served), and lack of procedures to monitor altered tickets; inadequate control over physical access to food storage; an inventory system that did not track the food used for meals; and noncompliance with the policy on employee meals and senior citizen discounts that resulted in more discounted, free, and reduced-price meals than allowed under the policy.

The parks' retail management section in the central office monitors costs. Staff compute food costs daily and give them to retail management weekly so that menu prices can be adjusted. The department's fiscal services section provides a monthly profit-and-loss statement on each restaurant. Retail management staff noted that state parks might be able to reduce food costs if more favorable purchasing procedures could be arranged with the Department of General Services.

### Contracted Retail Operations

The department has not analyzed the cost of leasing retail operations to determine if leasing is the most cost-effective option. Because the department does not allocate overhead and administrative costs (including costs of security and park management) to retail operations, management cannot compare the costs and benefits of managing these operations in-house versus contracting their management to private individuals. As of June 1996, 38 retail operations in state parks were managed by private individuals under contract with the department. These include snack bars, restaurants, camp stores, and marinas (see Exhibit 13).

Of the seven states contacted by the Division of State Audit, only Florida and Virginia perform a formal cost/benefit analysis before deciding to lease retail operations at state parks; Virginia has just begun a program to analyze the relative costs and benefits as leases come up for renewal. However, West Virginia obtains cost and income information for setting lease terms from profit-and-loss statements it requires lessees to submit annually. The other four states—Alabama, Arkansas, North Carolina, and South Carolina—lease few operations. North Carolina has leased operations—including four marinas, a restaurant, and a hang-gliding school—only when the state could not provide the amount of initial investment required. Alabama and Arkansas lease riding stables because of liability considerations. South Carolina contracts for operation of a fishing pier and a riding stable and is in the process of leasing the operation of a restaurant.

## Exhibit 13

### State Parks with Leased Retail Operations June 1996

<u>Park</u>	<u>Operation Leased</u>
Big Ridge	Pool Snack Bar
Cedars of Lebanon	Pool Snack Bar
Chickasaw	Camp Store Riding Stables Restaurant
Cove Lake	Restaurant
Cumberland Mountain	Pool Snack Bar
David Crockett	Community Theater
Edgar Evins	Marina
Fall Creek Falls	Camp Store Crafts Shop Riding Stables Golf Snack Bar Pool Snack Bar Bicycle Rentals
Harrison Bay	Restaurant
Meeman-Shelby Forest	Riding Stables Pool Snack bar
Montgomery Bell	Craft Shop
Natchez Trace	General Store/Gas Station
Norris Dam	Marina Pool Snack Bar
Paris Landing	Inn Gift Shop Golf Course Snack Bar House Boat Rentals
Pickwick Landing	Craft Shop Watercraft Rental Golf Course Snack Bar
Reelfoot Lake	Kiwanis Amusement Park
Roan Mountain	Pool Snack Bar Restaurant
T.O. Fuller	Golf Course Snack Bar
Tims Ford	Marina & Snack Bar
Warrior's Path	Riding Stable Marina Complex Waterslide Golf Course Snack Bar Pool Snack Bar

Source: Division of State Parks.

## **Recommendation**

The department should, to the extent feasible, include all costs in calculating the financial self-sufficiency of state parks and clearly indicate how the costs are calculated. The Parks Division and fiscal services section should develop a system to allocate indirect cost and overhead to individual parks and to retail activities so that the total cost is known. The Parks Division should consider requiring lessees, through the contract, to submit profit-and-loss statements annually as a basis for setting lease rates. The division should review the information for reasonableness. The division could also consider basing lease payments on a minimum payment plus a percentage of gross revenues.

State parks management should review the management of inns and restaurants. In particular, management should review policies and procedures for controls over food stores, discounted meals, and other factors to identify the causes of high food cost. Management should also identify and consider possibilities for making park inns more energy efficient and for reducing labor costs in housekeeping and maintenance.

## **Management's Comment**

We concur. The Parks Central Office is currently reviewing the system of accounting, management review, and budget responsibility for state parks. While our costs may seem high compared to private industry, some allowance must be made for the extra costs associated with the state's administrative procedures as well as labor cost disparities. For example, health insurance and retirement benefits are offered to most of our restaurant employees, while private industry seldom offers these benefits.

In the future, we will begin purchasing some of the food for restaurants through Direct Purchase Authority contracts for specialty foods. These contracts will provide cost savings through volume discounts.

We are monitoring our restaurants very closely. In June 1997, we will begin unannounced, monthly restaurant inspections. Inspection criteria will include cleanliness, employee problems, customer relations, maintenance of equipment, price of meals, food costs, quality of food, management, and any other items essential to a successful restaurant operation.

Inn operations will also be checked at least once a month on an unannounced basis beginning June 1997. Again, we will check everything essential to a successful inn operation including energy costs, time management, labor costs, employee problems, management, customer relations, and cleanliness.

We will now require lessees to submit profit-and-loss statements annually as a basis for setting lease rates. We agree that all costs should be calculated in considering the financial self-sufficiency of state operations and will strive to incorporate these costs into our calculations.

## 12. Management of parks could be improved

### Finding

The department has not used available resources to ensure the effective and efficient management of the state parks system. Although the Parks Division has developed strategic management plans to guide park operations and development, these plans have not been used to monitor each park's progress and have not been updated. Management also has not compiled the needs identified in each park's plan to determine priorities for allocating funds and other resources. In addition, management could not document the monitoring of parks' compliance with park standards and has not formalized a process to revise the standards as needed. When the parks are not monitored and needed corrective action is not taken, management appears to relinquish control of the system.

### Strategic Management Plans

A strategic management plan has been prepared for each park, describing the park and its needs, goals, and objectives. Central office staff developed the plans after consulting with park management and receiving citizen and advocacy group suggestions through public meetings. Fourteen of these plans were reviewed during this audit. Among the needs identified were new equipment, more personnel for patrols and maintenance, and additional land purchases to protect park areas. Six of the plans stated that all park boundaries should be surveyed and marked. (See Finding 10 on unsurveyed park boundaries.)

The purpose of a plan is to establish a systematic approach for determining the future direction of a park, assess the impact of issues and variables influencing park use and management, and formulate plans and actions for long-term management strategies. However, no formal monitoring of plan objectives has been documented, although division staff said that they monitor the plan through the budgeting process. In addition, some of the goals are very broad (e.g., "provide a quality recreational experience") and lack measurable objectives. Staff said that they do not prepare formal, written evaluations of performance related to the plans.

The plans were to be updated every two years and revised every five years according to Division of State Parks management. The 14 plans reviewed were developed in 1989 and have not been revised. Although park staff said that central office planners consult with them frequently and have gathered information for updating the plans, revisions had not been completed as of February 1997. Periodic plan revision is necessary because the situations of parks change over time. If strategic plans are not periodically updated, the parks have little to guide their operation and development.

Although each plan identifies the needs of an individual park, Division of State Parks management has not compiled information from all the plans to determine the overall needs of the

park system nor determined their priority. Therefore, management does not have the information necessary to allocate available funds and other resources to the highest priorities.

### Park Standards

The Parks Division could provide no written documentation that management monitored and measured parks' compliance with the division's comprehensive set of park standards. These standards address such areas as inns, campgrounds, recreation equipment and facilities, trails, and administration. The standards are stated in terms of policy (e.g., circumstances in which hunting is allowed), staff abilities (e.g., knowledge of the proper methods for cleaning guest rooms), and required method or level (e.g., daily inspections of playgrounds). Parks management said that each group of standards is monitored and measured by the staff most knowledgeable about the area (e.g., campground, golf course); however, this review is not documented. Although Parks Division staff perform a Park Readiness inspection prior to the start of the parks' season, the inspection focuses on maintenance needed, not on compliance with standards.

The Division of State Audit tested seven parks' compliance with 39 standards (a random sample of the 1,029 standards). During visits to the parks, auditors asked the park manager whether the park adhered to the standards and, where feasible, checked compliance. Testing did not identify any major noncompliance. However, park staff did not always interpret the standards consistently, as shown in the following examples:

- Staff at one park said that the park was not in compliance with the safety standard requiring "A structural fire prevention/suppression program . . . wherever needs exist" because the park office did not have a sprinkler system and the park did not have sufficient fire hoses. Other parks, however, interpreted the standard as requiring only a written fire plan.
- Staff at four parks noted noncompliance with the standard requiring playgrounds to be inspected daily, even though playgrounds were checked daily during patrols, because they thought the inspection referred to was the inspection required before the monthly report to the Chief Ranger for parks.

The current park standards were revised in July 1995. However, there is no policy requiring periodic review and revision as necessary. Two parks reported that their trails were not marked with a 2x6-inch paint blaze, as required by the standard, because the trails were so worn and easy to follow. If it is not necessary that all trails be blazed, the division may want to revise that standard. To the extent possible, the standards should recognize exceptions that can be made and restrict the range of exceptions individual park staff can make.

## Managing for Development

The department contracted with a hotel investment advisory firm, the Highland Group, concerning proposed development at four state parks. Income and expense projections in the consultant's November 1995 reports indicate that the proposed new and renovated facilities at three of the four parks were financially feasible: revenue streams from the facilities would be adequate to fund bond principal and interest payments. However, the projections rely on several assumptions: the department will provide new and improved telephone services, energy-efficient heating and air conditioning systems, and adequate upkeep and maintenance at the parks. The report also recommends a computerized management information system to make booking more efficient, to implement improved rate management, to control expenses, and to improve marketing efforts. The reports point out that hotels require a substantial level of capital expenditures to maintain their market share and asset value. If the proposed developments are not operated according to the consultant's assumptions, the financial projections to fund bond and interest payments may not be met.

Although the consultant reviewed only the four parks, the recommendations are generally applicable to other state parks. Currently, the conditions prescribed by the consultant are not being met at any park. For instance, park facilities have been allowed to deteriorate, and the parks are operating with a reduced maintenance budget that does not cover even the highest priority needs. The computer equipment at the parks is old and outdated and will not support updated software; for example, park staff manually perform the night audits for inns and cabins because the computers will not run the night-audit program. In 1993, an internal committee to assess computer needs for the department estimated that the parks system needed 102 new computers and printers. Although new computers were purchased for the Bureau of Environment, department management had not addressed the Bureau of Conservation's need for computers for state parks as of May 1996.

### **Recommendation**

Parks Division management should develop a process for periodically evaluating each park's operations and development based on its strategic management plan and for revising the plans as circumstances and priorities change. Steps required to reach a plan's goals should be revised if necessary to make them measurable. Management should compile information on each park's needs and set priorities so that the department has a basis for allocating funds and other resources.

Parks Division management should develop a formal process for monitoring each park's compliance with the division's comprehensive set of park standards, and should take action as indicated to ensure compliance. Management should clarify the standards as necessary and provide training to park staff so that the standards are interpreted consistently.

Top management of the department should review the management and funding needs of state parks and consider changes that may be needed to ensure that the state parks are well maintained and managed so they can serve the citizens of Tennessee.

### **Management's Comment**

We concur in part. All parks are different. Because of their diversity, it is difficult to ensure each park's compliance with the comprehensive set of park standards. Standard operating procedures are either in place or being updated to be implemented. Training plans for our standards are being developed and should start in fiscal year 1997-1998.

Strategic plans are necessary for state parks. Needs are prioritized both for the short term and the long term. We will analyze and update each park's strategic plan as soon as possible. Resources will be allocated to parks as prioritized and as resources are available.

### **Administration**

#### **13. The department's public education efforts lack coordination**

#### **Finding**

Department management has not coordinated or evaluated the public information, education, and outreach efforts of the divisions. Raising the awareness of citizens, businesses, and industry to the hazards of pollution and the need to conserve natural resources, and enlisting their cooperation, can help to protect the environment and prevent unnecessary loss of natural resources. Education is more cost-effective than enforcement. An overall policy with stated goals and means to measure accomplishment of goals could guide individual efforts and help management evaluate the effectiveness of such efforts in promoting the mission of the department. Coordinated efforts may produce greater results with fewer resources by avoiding duplicative effort and ensuring full coverage of relevant populations.

The department's Public Information Officer, who reports to the commissioner, provides information to the news media and acts as a department spokesperson. The officer, with two staff, oversees some larger products such as informational videos about the department and advertising for the state parks through National Consumer Advertising. The public information office has recently assumed responsibility for the bimonthly *Tennessee Conservationist* magazine. However, the officer said that division directors handle their respective division's public information, education, and outreach efforts.

The Education and Outreach Director, who reports to the Administrative Services Director in Administration, is responsible for assembling or developing material for presentations and

developing a Speakers Bureau on conservation and environmental issues. The director stated that a formal education policy with goals and objectives will be developed for the department's Administrative Strategic Management Plan.

The Pollution Prevention/Environmental Awareness Division, under the Deputy Commissioner for Environment, promotes public awareness of environmental issues. For example, the division promotes awareness of the hazards of radon and lead by providing speakers for clubs, citizen groups, and school programs. The division produces a quarterly newsletter *Pollution Prevention Alert*. The division participates in several award programs for businesses with programs for reducing hazardous waste and pollution and is working with other state agencies and conservation representatives to develop a statewide plan for promoting awareness of environmental issues. According to the director, press releases go through the department's Public Information Officer, but coordination of efforts with other divisions in the department is minimal.

The Division of Solid Waste Assistance has public information, education, and outreach programs to promote awareness of the grants it awards for solid waste educational programs. The division also assists with mobile exhibits on solid and hazardous waste management, one of which provides a collection point for hazardous waste.

Public information, education, and outreach programs for state parks are handled by each park. The Park Standards manual requires each park's strategic management plan to address interpretive programs and provides general guidelines that allow parks to shape interpretive programs to their unique features or history. Events and programs, with number and type of participants, are reported to a Regional Interpreter and from there to the Recreational and Interpretive Program Manager for State Parks in the central office.

Although the department has several staff with public information, education, and outreach responsibilities, efforts are not always documented and little evaluation of effectiveness has been done. Documentation of efforts and methods and a system to measure performance against goals and objectives are necessary if the department is to determine the most effective approaches and maximize the funds and resources available.

### **Recommendation**

Department management should develop an overall policy for public information, education, and outreach on environmental and conservation concerns. The policy should address the types of information to be provided, methods of conveying the information, and the audiences for which the information is intended. Responsibilities, including coordination, should be clearly assigned. Public education efforts should be documented and, to the extent feasible, evaluated for effectiveness.

## Management's Comment

We concur. We concur that environmental education is often more cost-effective than enforcement and helps protect our natural resources. However, we do not concur with the finding that the department's public education efforts lack coordination. We will continue to evaluate the department's educational efforts. The following improvements have recently been implemented:

1. Current Public Information Officer (PIO) has/is scheduling meetings with division directors to share what the PIO can do to assist in the dissemination of information regarding their divisions/programs.
2. PIO has scheduled media workshops for all environmental field offices (full staff) to discuss information procedures.
3. PIO is now regularly reviewing external communications of all divisions with goal of coordinating information.
4. PIO is currently developing overall information policy for all divisions within the department setting forth specific goals, methods of reaching those goals, and avenues for quantifying results. This should be accomplished in fiscal year 1997-1998.

### 14. The Internal Auditor does not report to Commissioner

#### Finding

The Division of Internal Audit may lack the authority needed for fulfilling its function because the Director of Internal Audit reports to the Director of Administrative Services instead of the Commissioner. The Director of Administrative Services is two levels down from the Commissioner. Having the Director of Internal Audit report to the Commissioner could reflect the Commissioner's support for consideration of internal audit findings and recommendations.

Under Section 4-3-304, *Tennessee Code Annotated*, the Comptroller of the Treasury establishes minimum standards for the performance of audits by internal auditors. These standards include the *Standards for the Professional Practice of Internal Auditing*, issued by the Institute of Internal Auditors. According to these standards, internal auditors should be independent of the activities they audit and should be placed high enough in the organizational structure to ensure "broad audit coverage, adequate consideration of audit reports, and appropriate action on audit recommendations."

### **Recommendation**

The department should change its organizational structure to allow the Director of Internal Audit to report directly to the Commissioner.

### **Management's Comment**

We concur. The Internal Auditor now reports directly to the Commissioner.

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## RECOMMENDATIONS

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### LEGISLATIVE

This performance audit identified areas in which the General Assembly may wish to consider statutory changes to improve the efficiency and effectiveness of the Department of Environment and Conservation and the five related environmental boards.

1. To ensure that environmental boards adequately function as the legislature intended, the General Assembly may wish to evaluate the membership of the Air Pollution Control Board, the Solid Waste Disposal Control Board, the Ground Water Management Board, and the Water Quality Control Board to determine if the boards have balanced public, conservation, and industry representation. Balanced representation helps ensure that compliance with environmental regulations is maintained.
2. The General Assembly may wish to consider legislation to restructure fees for participating in the Petroleum Underground Storage Tank Fund.
3. The General Assembly may wish to consider adding language to Section 68-215-111, *Tennessee Code Annotated*, clarifying what types of bodily injury and/or property damage the Petroleum Underground Storage Tank Fund should cover in third-party claims. The General Assembly may wish to exclude from the fund coverage for damages not directly related to environmental damage (e.g., loss of property value).

### ADMINISTRATIVE

The Department of Environment and Conservation and the boards should address the following areas to improve the efficiency and effectiveness of their operations.

1. The department should take steps to improve the timeliness of its enforcement actions. Management should develop and implement time guidelines for each regulatory area and should periodically review the division's performance in meeting those time guidelines and take appropriate corrective action, if necessary. The department should consider granting authority to issue enforcement orders at the division or program level for violations of solid waste management, Superfund, and water pollution control regulations and should consider allowing the Underground Storage Tanks Division to issue all types of enforcement orders. The Divisions of Air Pollution Control and Underground Storage Tanks should develop a data system sufficient to track cases involving enforcement action and compile data to evaluate timeliness.

2. The Division of Radiological Health should take action to improve the X-ray inspection process so that inspections are performed with the required frequency and followed up to ensure deficiencies are corrected. The division should specify that annual inspections are to be performed approximately 12 months apart.
3. The Division of Radiological Health should require X-ray facility management to inform the division which type of inspector (department or registered) will perform the next year's inspection when the facility pays its annual registration fees.
4. The Division of Radiological Health should require registered inspectors to submit reports of their inspections to the division within a designated time (e.g., 30 days) after the inspection and should specify the time frame for facility management to submit documentation of any corrective action deficiencies cited by either department or registered inspectors. The division should meet its goal of following up 10 percent of inspections by registered inspectors.
5. The department should provide software adequate to ensure all X-ray tubes are inspected and to collect historical data and analyze trends in compliance. Management should ensure that staff compile information on X-ray tubes and all inspections and include the number and types of deficiencies, the type of tube, the date of inspection, and the date and type of corrective action taken. Management should analyze the trends in compliance to determine the necessary allocation of staff, training, and other resources.
6. Department management should evaluate the allocation of staff for inspections of underground storage tanks to ensure adequate staffing. Division of Underground Storage Tanks management should develop a schedule for inspections based on the number and priority of tanks for inspection and on inspection frequency needed, determine the proper mix of compliance and certificate inspections, and set time guidelines for taking enforcement action. The division should rely on publicizing operating standards in order to educate owner/operators, not on voluntary inspections. In setting time guidelines, division management should define the circumstances under which extensions can be granted and the limits of such extensions. Field offices should periodically report the status and age of cases open at the field-office level and highlight and explain cases open longer than a reasonable length of time (e.g., six months). Division management should monitor the timeliness of enforcement at the field offices and in the central office and take corrective action as needed.
7. Department and division management in Air Pollution Control, Water Pollution Control, and Solid/Hazardous Waste Management should consider the type of information necessary to monitor and evaluate the activity and productivity of field staff and the effectiveness of the regulatory programs. Department management should ensure that formal policies are adopted at the division level to facilitate the collection and analysis of data from the field offices.

8. Department management, with help from the regulatory divisions, should develop and implement a formal policy of interdivisional cooperation. Procedures should include a mechanism for formally communicating to the relevant staff possible violations noted by staff from another regulatory area.
9. Department management should develop a formal policy to guide staff when regulatory actions appear to conflict with the state's economic development. The policy could recognize that the department's primary responsibility in environmental regulation is to protect the environment. Specific guidelines may be difficult to develop, but confirmation of the department's primary responsibility could promote a proper balance of these conflicting public interests.
10. Department management should complete corrective actions resulting from the report of Save Our Cumberland Mountains.
11. Department management and the environmental boards should consider revising their conflict-of-interest policies to require initial and periodic disclosure of personal, professional, and financial interests that could conflict with regulatory responsibilities; disclosure could be made upon initial appointment or employment and annually thereafter and during board deliberations. In addition, department management should consider requiring staff to sign a statement acknowledging the department's conflict-of-interest policy and their intent to comply with the policy and to promptly advise the department of any potential conflicts.
12. Management of the department, or the Division of Air Pollution Control, as appropriate, should take steps to establish the State Compliance Advisory Review Panel, as required by the 1990 federal Clean Air Act amendments.
13. The Underground Storage Tank Board, in conjunction with the department, should propose legislation to restructure fees for participating in the Petroleum Underground Storage Tank Fund. Fees and deductibles should be based on the amount of risk tank owners transfer to the fund. Risk factors to consider include the number of tanks owned, age of the tanks, history of leakage, tank materials, and geological factors.
14. The department should develop formal guidelines to calculate economic benefit when assessing civil penalties. Such guidelines may need to be tailored to conditions in each environmental regulatory division. Divisions not currently calculating economic benefit should begin to do so when assessing penalties.
15. Department management should consider allocating more funds to major maintenance at state parks. Parks management should develop and implement a comprehensive plan for preventive maintenance, including a schedule for completion based on priority, and periodically evaluate progress in meeting the schedule. To make major maintenance services more accessible to state parks in outlying areas, main-

tenance centers should consider providing services to parks in remote areas of their region when contracting is not feasible. In addition, parks management could consider developing a contract for a group of parks, including outlying parks as well as parks near an urban area.

16. The Division of Real Property Management should compile a comprehensive list of unsurveyed land, develop estimates for the time a survey of particular terrain should take, and set priorities for surveying the unmarked boundaries of state parks and related lands. Based on the time estimates and priority assigned, the division should establish a schedule for completing boundary surveys of parks and related lands. Division management should compare estimated to actual time for surveying to refine estimates and evaluate staff productivity. Division and department management should compare the number and priority of tracts surveyed with the number and priority of tracts scheduled to be surveyed to evaluate division progress in completing surveys to help prevent and detect encroachments.
17. The department's Office of General Counsel should continue to work with the Attorney General's office to develop a policy and process appropriate for handling encroachment violations.
18. The Division of Real Property Management should specify what information on encroachment violations is to be included so staff can document and monitor the status and resolution of such violations. Data should be compiled to identify trends in types and locations of violations and to suggest resolution methods, and the data should be periodically reported to management to help determine what other intervention may be required.
19. The department should, to the extent feasible, include all costs in calculating the financial self-sufficiency of state parks and clearly indicate how the costs are calculated. The Parks Division and fiscal services section should develop a system to allocate indirect costs and overhead to individual parks and to retail activities so that the total cost is known. The Parks Division should consider requiring lessees, through the contract, to submit profit-and-loss statements annually as a basis for setting lease rates. The division should review the information for reasonableness. The division could also consider basing lease payments on a minimum payment plus a percentage of gross revenues.
20. The Division of State Parks should review the management of inns and restaurants. In particular, the division should review policies and procedures for controls over food stores, discounted meals, and other factors to identify the causes of high food costs. Management should also identify and consider possibilities for making park inns more energy efficient and for reducing labor costs in housekeeping and maintenance.

21. The Division of State Parks should develop a process for periodically evaluating each park's operations and development based on its strategic management plan and for revising the plans as circumstances and priorities change. Steps required to reach a plan's goals should be revised if necessary to make them measurable. Management should compile information on each park's needs and set priorities so that the department has a basis for allocating funds and other resources.
22. The Division of State Parks should develop a formal process for monitoring each park's compliance with the division's set of park standards, and should take action as indicated to ensure compliance. Management should clarify the standards as necessary and provide training to park staff so that the standards are interpreted consistently.
23. Department management should review the management and funding needs of state parks and consider changes that may be needed to ensure that the state parks are well maintained and managed so they can serve the citizens of Tennessee.
24. Department management should develop an overall policy for public information, education, and outreach on environmental and conservation concerns. The policy should address the types of information to be provided, methods of conveying the information, and the audiences for which the information is intended. Responsibilities, including coordination, should be clearly assigned. Public education efforts should be documented and, to the extent feasible, evaluated for effectiveness.
25. The department should change its organizational structure to allow the Director of Internal Audit to report directly to the Commissioner.