Comparative analysis of state environmental enforcement in Region Six of the United States

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ACKNOWLEDGMENTS

I would like to thank my committee, Dr. Paul Templet, Dr. Margaret Reams, and Mr. Michael Wascom, J.D., for their patience, assistance and input in completing this work. The insight they contributed was resourceful and appreciated.
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ABSTRACT

Through intense studies of agency audits, EPA policies and documents, state environmental compliance data and state agency issued documents, I have evaluated the enforcement programs of Region Six state environmental agencies. The four elements utilized to perform this evaluation were listed in EPA compliance assurance program documents. Element 1 is the “appropriate identification of violations.” Element 2 is the “timely issuance of enforcement actions.” Element 3 is the “escalation of enforcement actions when violations continue.” Element 4 is the “ability to assess and collect penalties.” The analysis was conducted by comparing state program performance in each element.

These elements are interdependent. Their success depends on the perception of their success by the regulated community. A lack of success in one element will prevent the effectiveness of all elements. The community must perceive a high likelihood of being inspected, and a high likelihood of receiving enforcement orders and penalties for existing violations. Without this perception, an enforcement program cannot effectively deter the regulated community from subsequent violations.

Because each agency needed to improve in some area of enforcement, it was determined that none of the Region Six state agencies were completely efficient in all elements. Because a successful program relies upon all elements, there is no best or worst program. Each agency contains strengths and weaknesses among the elements, and each agency can improve their environmental enforcement procedures.
CHAPTER 1

INTRODUCTION

Environmental pollution poses risks to human health and public welfare. It degrades environmental resources, such as fish stocks and fertile soil, and it reduces recreational ability, such as swimming and camping. It puts non-polluting facilities at a disadvantage, increasing the competitiveness of facilities that are saving money by polluting. When environmental violations occur, the impact affects everyone. For this reason, effective enforcement of environmental laws is of the utmost importance.

Effective enforcement programs contain the following elements:

1. Appropriate identification of violations;
2. Timely issuance of enforcement actions;
3. Escalation of enforcement actions for continuing violations; and
4. Ability to assess and collect penalties.

These elements have been outlined and described in various EPA documents, such as “Compliance Assurance Program Evaluation Principles (2003),” “Using Performance Measurement Data as a Management Tool (2002),” and the “State Program Approval Handbook (1992).” I have used these 4 criteria to evaluate and compare the enforcement programs of the five states in Region VI of the United States, based on three environmental statutes: CAA, CWA, and RCRA. The five states of Region VI are Arkansas, Louisiana, Oklahoma, New Mexico, and Texas. State agencies can use this evaluation is a guide to identify areas needing improvement in their environmental enforcement programs.
The United States is partitioned into ten regions, each containing an EPA headquarters location. Region VI is comprised of Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. EPA Region VI enforcement headquarters is located in Houston, TX, and is responsible for protecting the environment in each state. This responsibility includes the oversight of each state’s environmental authorities. The EPA is planning to place another enforcement headquarters office in New Orleans, LA. This office will investigate complaints about environmental crimes in Louisiana and Arkansas (The Advocate, 2003).

Created in 1970, the EPA was the first environmental regulatory agency at the federal level. Under Legislative environmental law, the EPA authorizes state agencies to administer certain enforcement programs in lieu of its own, while maintaining a large oversight role. States are either delegated or authorized to manage these federal programs. Definitions for these two “statute-specific” terms are provided in Table 1 (EPA Yellow Book). Under these delegated/authorized programs, states have primary responsibility for enforcing any prospective requirements encoded by the program. Failure to effectively administer these responsibilities will result in federal intervention (EPA Enforcement Guide, 1999). The Clean Air Act (CAA), the Clean Water Act (CWA), and the Resource Conservation and Recovery Act (RCRA) are all examples of federal programs for which qualifying states receive authorization. EPA reserves the right to deny the authorization of any of these programs to any state, whereby federally enforceable permits will be issued by the federal agency. The state agency, however, is still expected to promote and ensure compliance.
Table 1
Definitions

| Delegated Program: | The state applies federal laws, standing in the place of the federal government. Here, the state implements the federal law in the exact same manner as the federal government would. |
| Authorized Program: | The state may apply its own state laws in lieu of the federal law. State laws must be as stringent as the correlating federal law, with the flexibility of incorporating their own mandates. |

The primary [Region VI] state agencies for environmental protection and regulation are listed in Table 2. All five agencies have received all authorized programs from the EPA, with the exceptions of Louisiana’s solid waste program (a component of RCRA), and New Mexico’s surface water program (CWA). LDEQ directs its own solid waste program, and New Mexico’s National Pollutant Discharge Elimination System (NPDES) permits are federally issued. Aside from these exceptions, the state agencies are responsible for issuing and modifying permits; inspections and monitoring; investigating complaints and potential violations; issuing enforcement actions when appropriate; developing environmental quality standards; reviewing, revising and implementing regulations; and conducting remediation efforts.

The media most often afflicted with violations are air, water and land. The Clean Air Act (CAA) is the comprehensive federal law that regulates emissions of pollutants into the air from stationary and mobile sources. CAA restricts all criteria pollutants, toxic pollutants, acid deposition and upper level ozone. Under this act, National Ambient Air Quality Standards (NAAQS) have been set for criteria pollutants, and are monitored by Air Quality Control Regions (AQCR). Common CAA violations include exceedence of
permit provisions, noncompliance with technology requirements, and falsification of reports.

Table 2
Region VI State Environmental Agencies

<table>
<thead>
<tr>
<th>Agency</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas Department of Environmental Quality (ADEQ)</td>
<td></td>
</tr>
<tr>
<td>Louisiana Department of Environmental Quality (LDEQ)</td>
<td></td>
</tr>
<tr>
<td>New Mexico Environment Department (NMED)</td>
<td></td>
</tr>
<tr>
<td>Oklahoma Department of Environmental Quality (ODEQ)</td>
<td></td>
</tr>
<tr>
<td>Texas Commission on Environmental Quality (TCEQ)</td>
<td></td>
</tr>
</tbody>
</table>

For an in-depth overview of the Region VI agencies, see Appendix A.

The Clean Water Act (CWA) is the basic regulatory structure for protecting United States’ waters from pollutant discharges. Point source discharges are acceptable only pursuant to National Pollutant Discharge Elimination System (NPDES) permits. NPDES specifies technology-forcing, national effluent limitations for conventional, unconventional, and toxic pollutants. Non-point sources are also regulated by CWA.

The Resource Conservation & Recovery Act (RCRA) is the basic structure protecting land. RCRA regulates solid wastes from industrial, commercial and domestic sources, as well as hazardous wastes. RCRA prohibits future open garbage dumps, which have been exchanged for sanitary landfills. These landfills must be built, maintained and closed according to certain specifications. A manifest system is required for hazardous waste facilities, tracking the wastes from generation to disposal. Examples of violations include illegal transportation and disposal, and falsified documents to hide origin, volume or disposal. Appendix B describes these regulations in greater detail.
Environmental regulations set guidelines for the management of pollutants to protect our natural resources, and to protect human health and rights. When a violation occurs, enforcement actions must be taken to correct the violation, to deter future noncompliance of the violator, and to discourage potential violations from facilities in similar situations. These actions may be either civil or criminal in nature. Criminal enforcement actions are reserved for only the most serious violations, those that are intentional or criminally negligent, posing substantial risks to human health and the environment (EPA Compliance & Enforcement). However, it is most common for states to refer criminal cases to the State Attorneys General or District Attorneys Offices. For example, the New Mexico Office of the Attorney General handles criminal environmental violations. Once a case is referred, most environmental agencies do not continue to track its enforcement progress (ECOS, 2001). Texas and Oklahoma both have Environmental Task Forces that handle criminal enforcement matters. The task forces are composed of multiple state and federal agencies. Because of this, enforcement results are due to a coalition of efforts, and not just the efforts of the state’s environmental protection agency. Therefore, I have not included criminal enforcement in this analysis.

Both criminal and civil enforcement actions strive to ensure facilities are in compliance with state and federal environmental laws. Important goals include returning violators to compliance, eliminating or preventing environmental harm, deterring others from misconduct, and preserving a level playing field for responsible, law-abiding companies (EPA Compliance & Enforcement). Civil enforcement actions are classified as Administrative or Judicial (EPA Enforcement Actions & Tools). Civil Administrative
Actions are those actions taken by the EPA or a State under its own authority, without involving a judicial court process. Civil Judicial Actions are formal lawsuits against entities failing to comply with statutory or regulatory requirements or with an Administrative Order.

Civil Administrative Actions are either Formal or Informal. Informal Administrative Actions are generally any communication from the regulating agency that notifies the regulated facility of a violation. These notices can include a Notice of Violation (NOV), a warning letter or a phone call. Formal Administrative Actions may begin with a notice of violation or with the issuance of an Administrative Order to bring about compliance, and may include penalties.

Often, the first formal step in the enforcement process is the issuance of the warning letter or NOV. The regulated entity should comprehend this as notice to correct the existing problems and return to compliance as quickly as possible (EPA Enforcement Action & Tools). If the informal action fails to persuade the violator to comply, a Formal Administrative Action should ensue. The Formal action sends the same message as the Informal, yet the penalty for its disregard is escalated. If the Formal actions still receive resistance, the enforcing agency should pursue compliance through either the Attorney General’s Office (for state cases) or the US Department of Justice (for federal cases). At this point, penalties significantly increase. This enforcement process is practiced by the United States Environmental Protection Agency (EPA) and by State Environmental Departments (EPA Enforcement Actions & Tools).

Civil enforcement actions can result in settlements, civil penalties, injunctive relief, and/or Supplemental Environmental Projects (SEPs) (EPA Enforcement Actions & Tools).
Tools). A settlement is an agreed-upon resolution to an enforcement case, usually in the form of Consent Agreements/Final Orders in administrative actions and in Consent Decrees in judicial actions. Civil penalties are monetary assessments to be paid in connection with a violation, designed to recover the economic benefit of noncompliance and to account for the seriousness of the violation. Injunctive relief specifies tasks that a violator must carry out to come into compliance. SEPs (described in Appendix D) are part of an enforcement settlement in which the violator agrees to perform an environmental improvement project in addition to correcting the violation.
CHAPTER 2

METHODOLOGY

2.1 Research and Investigation

An internship with Region VI EPA Criminal Investigations Division in Baton Rouge first sparked my interest in environmental enforcement. I initially intended to evaluate state criminal environmental enforcement. However, my studies showed that state enforcement mainly consists of civil actions. Because the internship was based in Baton Rouge, for the most part I was exposed to environmental crime in Louisiana, and to enforcement problems within LDEQ. In the surrounding community, LDEQ has a poor reputation for protecting the environment. In October 2001, eleven environmental organizations asked the EPA to withdraw LDEQ’s authorization to administer the federal CWA, because of “LDEQ’s failure to keep up with permits and to fine violators” (Dunne, 2002). Early in 2002, some of these same groups also asked the EPA to rescind LDEQ’s authority to regulate air pollution. This exposure influenced my view of LDEQ, leading me to predispose that LDEQ, out of all five agencies, would need the most improvement. My predisposition was based solely upon the publicity LDEQ received, because the other state agencies were not a focus of the Baton Rouge office.

Before beginning my investigation, my first goal was to gain an understanding of the responsibility and authority carried by state environmental protection agencies in general. Next was a review of the operations and organization of each individual agency (described in Appendix A).

Initial information in my investigation was obtained from the EPA Criminal Investigation Division office in Baton Rouge, LA. Unfortunately, most of the documents
were limited to federal enforcement statistics and Louisiana information. Using quantitative output measures of each agency was an objective method of compare state environmental enforcement, therefore state statistical searches were the focus of my research. Desired statistics included:

- The number of permitted facilities in each state for each media;
- The required number of inspections for each media versus the number of inspections actually conducted;
- The number of violations committed per media versus the number of enforcement actions taken;
- The amount of penalties levied versus the amount of penalties paid;
- The number of expired permits for each state;
- The time taken to issue an enforcement action once a violation is detected or a complaint is received;
- The type of enforcement actions taken.

Interviews with EPA officials led me to a variety of sources. From these interviews, I gained access to pertinent websites, an LDEQ audit, and correspondence with an LDEQ employee. Audits of the state environmental programs were the most useful sources of data. The pursuit for applicable information included searches of Worldwide Web (web) sites of each state’s environmental department, state Auditor’s Offices, state Attorney General Offices, state newspapers, EPA web sites, environmental interest groups, state and federal databases, and several government documents. I also communicated with employees of NMED and ADEQ. I attempted to contact the Texas State Auditor’s Office, and maintained communication with the New Mexico Auditor’s Office, in search of recent performance audits.
I conducted a search for books and journals containing data relevant to my topic. This included a search through LexisNexis and Infotrac, using Louisiana State University’s journal database. However, there were not many related works in any of these search engines. Because of this, the majority of collected data and information is from government documents and databases.

The EPA website proved to be the most accommodating. Its Enforcement Compliance and History Online (ECHO) database gave access to information on all reported permitted facilities in each state, such as inspections and violations. ECHO is a good source of state civil enforcement data, because it contains most of the data that state enforcement agencies enter into federal databases. The database incorporates information on major and minor facilities permitted under the CAA, CWA, and RCRA, such as the time since the last inspection for each facility, any committed violations, issued enforcement actions, and the amount of time in noncompliance. ECHO was useful because it enabled me to quantitatively compare each state. The site does not include information on criminal enforcement actions, therefore there was no risk of incorporating criminal statistics in my evaluation.

The EPA website also gave access to federal audits, enforcement guidelines, and some state enforcement statistics. EPA documents were useful because they gave a foundation for evaluating the states. Through these documents, I found the elements of an effective enforcement program, and the importance of each element. The audits gave useful statistics and information on state agency performance. Through these documents, I also found various guidelines, recommended by the EPA, to aid the state agencies in evaluating their performance.
The diverse value of information in the state agency websites made research difficult. Only a few of the sites were helpful. The NMED website, for instance, was extremely difficult to navigate. Without a search engine on the homepage, one is forced to trek through many links before finding a site index. Few general statistics were available on the website, or in relevant documents. The LDEQ website was just as inadequate. Few statistics or sources of viable information were easily accessible. An immense site index was the only doorway to informative documents, many of which were unlabeled.

On the other hand, the websites maintained by TCEQ and ADEQ were extremely functional and informative. Yearly documents were easily accessible, as were general agency operations and statistics. These sites (including that of ODEQ) readily made significant information accessible, such as audit reports, inspections recently conducted, numbers of permitted facilities, and records of enforcement actions. Overall, state documents gave useful quantitative information, but in different categories, making comparisons difficult. For example, some states reported the number of inspections conducted for a particular year, but not the number of facilities. Other states reported the number of facilities, but not the number of inspections. Some agencies reported the number of permits instead of the number of facilities, though facilities can hold multiple permits. I used the ECHO database to account for this.

Because of a lack of comparable statistics reported by each state, I incorporated some qualitative data in my research. Agency policy statements and guidelines were helpful, because they were indicative of the strength of programs. For example, NMED’s Strategic Plan for 2002 outlined areas of weakness within its operations, such as
resolving complaints within a specified time period. These documents also provided information on the quality of each agency’s data maintenance, the databases used and the existence of self-auditing programs.

After identifying the elements of effective enforcement in the EPA documents, I posed questions defining the composition of each element, incorporating the information each document provided. See Table 3 to view these criteria. I then focused my research on information answering each question.

Table 3
Criteria Used to Define the Elements of Effective Enforcement

1. Element 1: Appropriate Identification of Violations
   - Are inspections conducted as required?
   - Are all actions and inspections documented in an accessible manner?
   - Are facility permits current?

2. Element 2: Timely Issuance of Enforcement Actions
   - Did discovered violations receive enforcement actions?
   - Are enforcement actions issued within the mandated time frames?
   - Are timeliness indicators uniform and comprehensible?
   - Is the complaint process timely and thorough?

3. Element 3: Escalation of Enforcement Actions For Continuing Violations
   - Do imposed actions effectively deter recurring violations?
   - Are more severe enforcement actions issued when a facility continues to commit the same or similar violation?
   - Do the escalated actions effectively penalize the violating facility?

4. Element 4: Ability to Assess and Collect Penalties
   - Are assessed penalties collected?
   - Is a uniform method used to assess penalties?
   - Are penalties fairly assessed across all facility types?

I used these criteria as a guideline for the analysis. The data obtained in researching each question allowed me to analyze each state agency’s performance in each element. After analyzing their performance, I compared the agencies to each other, within each element.
Because of the diversity of each state environmental agency, and the numerous policies, acts and programs implemented by each state, I limited my research to enforcement under CAA, CWA, and RCRA. To the extent possible, I also attempted to limit all information to the years 2000 and 2001. However, because not all states offered such recent information, I allowed data to date as far back as 1997, on a need-only basis. Information used from before fiscal year 2000 is identified as such in the remainder of my analysis.

2.2 Research Limitations

I came across certain barriers during my research, placing limitations on my findings. Although performance audits provided valuable information, they were not all conducted in the same manner. Some of the audits covered entire enforcement agencies, while others covered only individual programs within the agencies. For example, state performance audits were conducted on LDEQ and TCEQ as whole entities, yet ADEQ audits only covered performance in surface and ground water quality, and in the activities of the Solid Waste Division. NMED had not received a performance audit at all within the specified time frame (1997-2001).

Another limitation was the access to recent data. Some information covered a range of years rather than a specific year. Some information was less recent and may not be a reflection of current activities. For example, the Louisiana Legislative Audit gave data covering years 1999 to 2001, while the NMED Annual State of the Environment Report for 2001 gave statistics from 1999. Reports from TCEQ and ODEQ recorded statistics per year. Many reports, especially those of NMED, merely made statements
about the quality or improvement of their environmental enforcement programs, without giving statistics to defend them.

The ECHO database on the EPA website provided statistics on the states that were compatible for comparison, however it also had limitations. The database could only show information on 500 facilities at a time. For example, if a state had more than 500 minor air facilities, the database would show none of them, and ask for a modified search. In some cases, the search could not be modified enough to show the desired information. In addition, the database only includes the information that the states have provided. States are not required to report all types of minor permitted facilities, and may not have reported all required information.

There are also differences in definitions. For example, the EPA considers a NOV a formal enforcement action (EPA Enforcement Actions & Tools), although it acknowledges that NOVs can be used as informal actions. The States classify a NOV as an informal action. This becomes a limitation in reporting. Not all state agencies include informal actions when calculating compliance rates, such as TCEQ. Other agencies include both formal and informal actions in their reports, without distinguishing between the two. I accounted for this by using the ECHO site statistics for comparison. The site accounts only for formal enforcement actions, such as Formal Administrative Orders. NOVs and criminal enforcement actions are not included.
CHAPTER 3

RESULTS: SUCCESS OF CRITERIA FOR ELEMENT 1

3.1 Appropriate Identification of Violations

“A successful program is based upon an accurate, current inventory of the regulated community. Data, in turn, should be accessible in an automated data system which is accurate and up-to-date” (EPA Compliance Assurance). This inventory is utilized as a basis for targeting, inspecting and monitoring. Field inspections establish a field presence that provides a deterrent effect, and allows agencies to determine actual compliance. Facility self-monitoring reports must be regularly collected and reviewed. Documentation must be organized and accessible for agents to quickly view information, such as compliance histories, when administering enforcement actions.

3.2 Inspections

Enforcing agencies need procedures to receive, evaluate, retain, and investigate records and reports that owners and operators are required to submit to the implementing agency, and procedures to enforce against failure to submit such mandatory reports. “Site inspections and monitoring are the Agencies’ strongest safeguards against fraud,” in submitted self-monitoring reports (SAO, 2003). “There is an inherent risk that information submitted [by facilities] is inaccurate” (Texas SAO, 2001). Inspections are a method of verification used to determine compliance with program requirements, and the validity of self-monitoring reports.

In measuring the progress of state activity, the EPA uses data such as the agencies’ inspection frequencies (OECA, 2002). This includes the likelihood (in
percentages) that a facility will be inspected each year, and the percentage of inspections adhering to program-specific guidance on inspection frequency.

From the EPA ECHO website, the most recent numbers of facilities and numbers of inspections conducted from 2001 to 2002 were obtained. The data is recorded below in Table 4. The ratios (frequencies) of this data are recorded in Table 5. Because of the limitations of ECHO described in CHAPTER 2, not all facilities are represented. The table includes only major sources for water and air, and Treatment/Storage/Disposal (TSDs) facilities for waste, because inspections of these sources are federally reportable, and are required annually. Therefore, they were the most straightforward statistics to compare. The inspections only reflect those reported to the EPA. Although submitted reports of all inspections are required, State agencies may have failed to do so.

Table 4
Number of Reported Inspections versus Number of Facilities per State

<table>
<thead>
<tr>
<th>State</th>
<th>Water // # Facilities</th>
<th>Air // # Facilities</th>
<th>Waste // # Facilities</th>
<th>Total // # Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>108 // 112</td>
<td>251 // 273</td>
<td>22 // 24</td>
<td>381 // 407</td>
</tr>
<tr>
<td>Louisiana</td>
<td>229 // 232</td>
<td>573 // 915</td>
<td>67 // 68</td>
<td>869 // 1215</td>
</tr>
<tr>
<td>New Mexico</td>
<td>26 // 34</td>
<td>147 // 214</td>
<td>16 // 22</td>
<td>189 // 270</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>87 // 94</td>
<td>372 // 473</td>
<td>23 // 25</td>
<td>482 // 592</td>
</tr>
<tr>
<td>Texas</td>
<td>419 // 535</td>
<td>382 // 1892</td>
<td>137 // 258</td>
<td>938 // 2685</td>
</tr>
</tbody>
</table>
Overall, ADEQ has the highest inspection rate per facility, and is consistently high in its inspection rates. TCEQ is consistently lower in its inspection frequency than the other agencies. Only 20% of Texas major air facilities were inspected, and only 53% of its TSDs were inspected. Overall, TCEQ inspected approximately 35% of its major facilities. Louisiana’s air inspection frequency was relatively low, at only 62%.

However, LDEQ inspected almost 100% of both major water and waste facilities. New Mexico’s inspection frequencies were constant for each media, yet they were relatively low compared to Arkansas’ and Oklahoma’s. Figure 1 graphically illustrates the differences in inspection frequencies per media, for each agency. The frequencies recorded in Table 5 are shown in Figure 1.
Although Louisiana has no formal inspection requirements for permitted air facilities (LLA, 2001), they are required to inspect major (Title V permitted) facilities annually. The regional management staff develops their own annual list of sources to inspect. This list is mainly composed of large industrial sources; sources in non-attainment areas; and smaller sources based on complaint and upset history (LLA, 2002). Based on data provided in the Louisiana Legislative Audit, there is a need for improvement in LDEQ’s inspection procedures. According to the performance audit, seven percent of major air facilities had not had an inspection in three years (1999-2001), and seven percent of minor air facilities had not been inspected in five years (1997-2001). Out of 915 major air facilities, only 62% were inspected in 2001, although all major air facilities require annual inspections. Only one agency had a lower inspection rate for major air facilities.
3.3 Expired Permits

When permits expire, and they are not renewed/updated by the agency responsible, violations can occur without the agency’s knowledge. Often, when permits are renewed, the restrictions of the permit are changed and the strictness of limitations is increased. A facility operating under an expired permit may be following old limitations, resulting in noncompliance. A facility with an expired permit may also break the restrictions of the old permit, under the assumption that they are not closely monitored by the responsible agency.

The Environmental Working Group (EWG), a non-profit environmental research organization based in Washington, D.C., conducted a study in 2000 CWA permits. Information for EWG studies are obtained from EPA documents and policies, Environmental Council of the States (ECOS) studies, various environmental non-profit organizations, and State agency documents. From each state, the EWG took a sample of water facilities permitted under the CWA, and found the percentage of expired permits in each sample. Out of a sample of 108 major Arkansas facilities, 13 (12%) had expired permits. A sample of 247 major Louisiana facilities showed 116 expired permits (47%). In New Mexico, 59% (20) major facilities had expired permits, out of a sample of 34. Twenty-three out of 93 (25%) of Oklahoma major facilities had expired permits. Out of 582 major Texas facilities, 135 (23%) had expired permits. From EWG statistics, New Mexico has the worst record of expired water permits, at 59%.

Currently, approximately 90% of the individual NPDES permits in New Mexico are five or more years old (NMED SWQ-02/1). Outdated permits may not be protective of current water quality standards adopted by the State and revised once every three years.
in accordance with Section 303 of the CWA. According to the Louisiana Legislative Auditor (LLA), many facilities in Louisiana are operating under expired permits. The percentages of expired permits for Louisiana, for each media, are listed in Table 6.

Table 6
Louisiana’s Expired Permits

<table>
<thead>
<tr>
<th>WATER</th>
<th>AIR</th>
<th>HAZARDOUS WASTE</th>
<th>SOLID WASTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>69% majors</td>
<td>11% Title V Permits</td>
<td>54%</td>
<td>73%</td>
</tr>
<tr>
<td>49% minors</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Percentages are of total permitted facilities, as recorded by LLA.

3.4 Data Maintenance

“A quality program maintains accurate and up-to-date files and records on source performance and Agency responses, that are reviewable and accessible. A quality program reports relevant data that is accurate, reliable and complete” (EPA Compliance Assurance). Data must be maintained on the compliance status of the regulated community to monitor compliance trends, and to ensure violations are not repeated. Data on violators must also be collected and maintained, for agents to effectively determine appropriate enforcement actions when violations occur. Simple information, such as company compliance history, reliance of self-monitoring reports, and past inspection data are all relevant in the consideration of penalties, inspection dates, and classification of enforcement actions to be taken.

ADEQ does not have a specific central database where it stores operational data. Instead, it has a Computer Services Division, which is responsible for the agency’s
“multi-vendor computer network and infrastructure” (ADEQ Computer Services). No other information on this service was available.

In Louisiana, water facilities are required to sample their discharges and send their results to LDEQ to show daily, monthly and quarterly compliance. Certain air facilities are required by their permits to report an annual emissions inventory. Hazardous waste facilities are required to submit an annual manifest, and solid waste facilities must present annual disposer reports. According to the LDEQ performance audit for 2001, 26% of a sample of 296 discharge reports were missing or not received. Twenty-two percent (of a sample of 228) emission inventories were missing, although 17 were recorded as received. All but one manifest was submitted, and all but two disposal reports were submitted.

LDEQ is attempting to correct this disorganization. The agency is currently integrating its new integrated data management system called Tools for Environmental Management and Protection Organizations (TEMPO). TEMPO is intended to merge all data, currently kept in LDEQ’s various databases, into one centralized system. TEMPO will improve LDEQ’s oversight of monitored facilities in Louisiana, allowing access to all information on self-monitoring reports, inspections, violations and enforcement actions on one database.

NMED, in their State of the Environment, 2001 Annual Report, admitted that their data management and handling was extremely poor. This was also evident in their lack of statistics of any kind in all published reports, and on their website. The 2001 report contained statistics from 1999, such as “air inspection trends” and “annual received permit applications.” The most current data, from year 2000, only covered
underground storage tanks. Without an accurate, current database, NMED agents cannot readily obtain the information necessary to conduct inspections, issue enforcement actions, assess penalties, or keep the public informed. To remedy this problem, NMED is currently integrating IDEA, “Integrated Database for Environmental Assurance,” into its procedures. This data system will “integrate and automate common data and business processes across all divisions, bureaus and programs” (NMED Annual Report, 2001). IDEA is intended to manage environmental health across all media, standardize and simplify environmental reporting, and provide timely and reliable information to the public. It will eventually be used for all core functions of all programs.

ODEQ’s Air Quality Division (AQD) utilizes an electronic database named “TEAM.” TEAM, which is compatible with EPA databases, serves as the main database for AQD, “and its structure is the template for future ODEQ databases” (ODEQ Annual Report, 2001). TEAM tracks compliance inspections, enforcement and permit functions, air emissions inventories and new sources. There is no lag time for reporting activities to national databases, and all AQD employees can gain access to the database. Since its implementation, employees spend an average of 75% less time reporting to national databases, allowing more time to complete other responsibilities.

According to the Texas State Auditor, TCEQ needs a system that ties together information related to inspections, violations, permits, enforcement actions, and administrative penalties. This data is scatted over 20 official databases and several unofficial systems. However, TCEQ is currently working on several projects to consolidate this information. Current projects include the Central Registry, the Consolidated Compliance Enforcement Database System (CCED), the State
Implementation Plan Data Management System (SIPDM) and the Water Availability Model (WAM). These projects are all attempting to consolidate applicable data into easily accessible data systems for agency review. These projects are further outlined in Appendix E.

3.5 Comparison

Based on the data obtained from the EPA ECHO database, ADEQ has the highest inspection frequency over all media. From 2001 to 2002, ADEQ inspected 94% of its major permitted air, water and waste facilities. TCEQ had the lowest inspection frequency for all media. Only 35% of its major facilities were inspected during that same time frame. TCEQ had the lowest inspection frequency for air and waste facilities as well. LDEQ had the highest inspection rate for both TSDs and major water facilities. The rate of NMED inspections remained fairly constant, at around 70%.

Based on statistics gathered by EWG, New Mexico has the highest rate of expired permits. Of a sample of 34 major facilities, 59% were expired. The sample taken from Arkansas had the smallest percentage of expired permits. The sample size, the number of expired permits within the sample, and the percentage of expired permits within the sample is summarized in Table 7.

Table 7
State Expired Water Permits (EWG study)

<table>
<thead>
<tr>
<th>Permits:</th>
<th>Arkansas</th>
<th>Louisiana</th>
<th>New Mexico</th>
<th>Oklahoma</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>108</td>
<td>247</td>
<td>34</td>
<td>93</td>
<td>582</td>
</tr>
<tr>
<td># expired</td>
<td>13</td>
<td>116</td>
<td>20</td>
<td>23</td>
<td>135</td>
</tr>
<tr>
<td>% expired</td>
<td>12%</td>
<td>47%</td>
<td>59%</td>
<td>25%</td>
<td>23%</td>
</tr>
</tbody>
</table>
Almost every agency had difficulties with their data maintenance systems. LDEQ is missing several reports and inventories, according to the Louisiana Legislative Auditor. However, the agency is in the process of implementing TEMPO, a central database incorporating the data contained in all of DEQ’s databases. Various reports written by NMED, including the 2001 Annual Report and the NMED Strategic Plan for FY 2002, commented on the poor quality of data management. To remedy this, the agency is currently integrating a data management system, IDEA, into their computer systems. TCEQ is also in the process of centralizing data, currently working on four data management programs. ODEQ has the most organized database within its Air Quality Division. TEAM contains all data relevant to the AQD, is accessible to all employees, and enters information without a lag-time. ADEQ does not have a central program to store data. They instead have a Computer Service Division, which is responsible for maintaining the agency’s multi-vendor computer network.
CHAPTER 4

RESULTS: SUCCESS OF CRITERIA FOR ELEMENT 2

4.1 Timely Issuance of Enforcement Actions

“To serve as a general deterrent among the regulated community, a program must provide timely and appropriate responses to significant violations” (EPA Compliance Assurance). In order for enforcement action to be effective, it must be administered as quickly as possible. This means aggressively pursuing identified violators through formal enforcement actions, following through in a timely fashion with adequate referrals for enforcement response, and having no unexplained delays or backlogs in enforcement cases. “If active follow-up and enforcement measures are not taken at the time violations are discovered, the sites might develop problems in the future, leading to further violations and leaving the State liable for cleanup costs” (SAO 2001).

In the National Environmental Performance Partnership System (issued May 1995), the EPA included national timely and appropriate enforcement response criteria to State authorities and procedures. According to the criteria, significant sources in noncompliance, those violating or failing to obtain a major permit, must be addressed within 180 days from the inspection date, 150 days after the inspection report is submitted. Inspection reports must be completed, submitted and approved within 30 days of the inspection (OIG Audit, 1997). State agencies may create a stricter standard for themselves, but they may not be more lenient.

An agency’s complaint process must also be timely. When an agency receives a complaint or concern about the polluting actions of an entity, it is imperative that the agency investigates in a timely fashion, for the same reasons enforcement actions must be
timely. “In addition, untimely resolution of complaints could result in evidence of the violation no longer being present or concealed by the time the inspection is done” (LLA, 2001). Investigating a valid complaint leads the enforcing agency to a violation that had not been discovered through monitoring, allowing the agency to take appropriate enforcement action.

Slowly enforced actions allow a violator to remain in noncompliance. The longer the violator remains without penalty; the longer it has no incentive to correct the violation. While remaining in noncompliance, the violator gains economically. This gain reduces the effectiveness of any assessed penalties. Slow-moving enforcement actions also give the impression of a lax enforcement agency to the permitted community (EPA Compliance Assurance).

4.2 Arkansas

In 1997, the EPA Office of Inspector General (OIG) performed an audit of Region VI’s oversight of ADEQ air enforcement data. The OIG found that enforcement actions in Arkansas are not timely. Out of a sample of 15 air violations, only one was addressed in time. The remaining actions for noncompliance took an average of 940 days. Also, ADEQ did not issue milestone dates (date by which a stipulated compliance action must be implemented) within its enforcement orders. Without a milestone date, the facility is not issued a specific timeframe in which to correct violations. Without the restraints of the timeframe, the violator is not forced to return to compliance as quickly as possible. As a result of the audit, ADEQ agreed to begin enforcement actions upon their identification, and to put milestone dates of compliance in administrative orders.
4.3 Louisiana

The Louisiana Legislative performance audit conducted on LDEQ for 2001 determined that LDEQ is not timely in its issuance of enforcement actions. LLA configured timeliness of actions from the day violations were identified, although LDEQ does not calculate timeliness in this manner. According to the audit, 80% of water actions took place more than 180 days after the violation was identified, as well as 29% of hazardous waste actions, and 34% of solid waste actions. Enforcement actions against air violations could not be evaluated by the LLA, due to lack of documentation and organization. The Auditor was able to obtain the dates of enforcement actions for air violations, but not the dates of the actual violations. LDEQ personnel could not provide the auditor with the violation dates, and according to the auditor, “the status of LDEQ’s file room led [the auditor] to believe that it would be both time-consuming and futile to look for all of the enforcement actions in the air files.”

According to the EPA, a timely enforcement action is issued within 180 days of the inspection that discovered the violation. However, LDEQ calculates timeliness differently for each media, making performance indicators hard to follow. The Enforcement Division within the LDEQ handles all media, unlike other agencies in which each division handles only one media type. Therefore, in order to assess the timeliness of actions, the Division must apply a different time frame to each media. Using the same time requirement for enforcement actions in each media (within 180 days of inspection), would allow LDEQ personnel to assess timeliness with more ease.

Time for air enforcement actions begins with the issue date of the Notice of Potential Penalty (NOPP), and ends with the issue date of the formal enforcement action.
addressing the NOPP. The indicator does not include the time from the inspection to the issuance of the initial informal enforcement action. For water, timeliness is measured from the date violations are recorded on the Quarterly Noncompliance Report, to the issue date of the enforcement action. Hazardous waste timeliness is calculated in the manner set forth by the EPA. The start date is the last date of the inspection, and the stop date is the date the action is issued. For solid waste, the start date of calculation is the date the inspection report is received by the Enforcement Division, and the end date is the issue date of the enforcement action.

LDEQ is not meeting its standards for handling complaints. In its 2001 Executive Budget, LDEQ required that 95% of complaints be addressed within 5 days. From fiscal years 1999 to 2001, LDEQ received 8,601 complaints. Out of a sample of 354 taken by LLA, 120 (34%) were not addressed in the stipulated time period. Eighteen facilities receiving complaints had violations, and 7 of these (33%) received no enforcement action.

4.4 New Mexico

No statistics were available on the timely issuance of enforcement actions by NMED. However, the NMED Strategic Plan for FY 2002 formed goals that the agency intends to fulfill in order to improve its operations. First, NMED wanted to improve its inspection rate of complaints for public drinking water systems. For 2002, NMED intended to inspect 75% public drinking water systems within one week of notification of system problems that may impact public health. Second, NMED wanted to ensure that at least 40% hazardous release sites confirmed in 2002 were undergoing assessment or corrective action. These two goals were formulated to improve current operations within
NMED. Therefore, at least 25% of drinking water complaints were not inspected in a timely fashion, and at least 60% of confirmed release sites were not issued timely enforcement actions in prior years.

4.5 Oklahoma

In 2001, 100% of hazardous waste enforcement actions (54 informal and 11 formal) were issued by ODEQ within the required time frame (ODEQ Annual Report, 2001). However, an Environmental Working Group (EWG) study showed that out of a sample of ten major air facilities, five were out of compliance for an average of 3 quarters (274 days). According to the EPA, timely enforcement actions are issued within 180 days of inspection. By not issuing timely enforcement actions, ODEQ allowed these facilities to remain in noncompliance for an extra 94 days.

ODEQ requires closure of complaints within 90 days. To consider a complaint as closed or resolved, an inspection has been performed, and enforcement actions have been issued for present violations. Enforcement actions issued within this time frame are more rapid than the EPA guidelines. According to the OK Conservation Commission, ODEQ received and resolved 4622 complaints in 2001. In less than 30 days, 3709 complaints were resolved, and 834 were resolved in less than 120 days. While the Commission didn’t report on the number resolved in less than 90 days, it did report that the average time taken to resolve a complaint was only 19 days. This is down from 2000 (average of 21 days), and 1999 (average of 22 days). Each year the ODEQ is improving management of the complaint process (See Figure 2). Only 79 complaints took over 120 days to resolve. Only two complaints received in 2001 took over 1 year to resolve.
4.6 Texas

In 2001, TCEQ discovered 22,823 leaking petroleum storage tanks. Tank owners and operators are required by state law to clean releases by these storage tanks. By the end of the year, enforcement actions had ensured 16,176 site cleanups were completed, and actions were under way for 6,647 more sites (TNRCC SFR 57/01). One hundred percent of these actions were issued within one year. Seventy-one percent of these actions were completed within the year.

In January 2001, TCEQ had recorded 1,968 cases against environmental violations from the prior year. Of these, 984 were pending, 833 were enforced with the mandated time frame (180 days), and 151 were backlogged (TCEQ Enforcement Report, 2001). The pending cases are those referred to the Attorney General’s Office. According to TCEQ, AG actions typically take from 6 months to 5 years from the date of referral to
final judgment. These cases are considered to be under development until the issuance of a final judgment. Inspections are still conducted on facilities in these “pending” cases. Including the pending cases, 92% of the actions were issued in a timely manner.

4.7 Comparison

From the EPA ECHO website, I obtained the number of facilities in noncompliance for each media, and the number of enforcement actions issued for each media. Using the same criteria as in CHAPTER 3, only major water sources, air sources, and TSDs were included. The data, from years 2001 to 2002, is recorded in Table 8. The ratios of enforcement actions issued to total violations are recorded in Table 9. Figure 3 summarizes this data, giving the ratio (in percentages) of the number of enforcement actions issued compared to the number of violations detected.

Table 8
Number of Enforcement Actions Issued Compared to Number of Violations

<table>
<thead>
<tr>
<th>State</th>
<th>Water</th>
<th>Air</th>
<th>Waste</th>
<th>Total</th>
<th>Penalties Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>4 // 8</td>
<td>25 // 66</td>
<td>4 // 15</td>
<td>33 // 89</td>
<td>52</td>
</tr>
<tr>
<td>Louisiana</td>
<td>27 // 39</td>
<td>35 // 47</td>
<td>15 // 31</td>
<td>77 // 117</td>
<td>26</td>
</tr>
<tr>
<td>New Mexico</td>
<td>2 // 8</td>
<td>16 // 17</td>
<td>3 // 10</td>
<td>21 // 35</td>
<td>29</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>17 // 25</td>
<td>74 // 114</td>
<td>0 // 0</td>
<td>91 // 139</td>
<td>93</td>
</tr>
<tr>
<td>Texas</td>
<td>29 // 95</td>
<td>52 // 112</td>
<td>20 // 55</td>
<td>101 // 262</td>
<td>94</td>
</tr>
</tbody>
</table>
Table 9
Frequency with which Enforcement Actions are Issued for Violations for each Media-Specific Program

<table>
<thead>
<tr>
<th>State Agency</th>
<th>Water</th>
<th>Air</th>
<th>Waste</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADEQ</td>
<td>0.500</td>
<td>0.379</td>
<td>0.267</td>
<td>0.371</td>
</tr>
<tr>
<td>LDEQ</td>
<td>0.692</td>
<td>0.745</td>
<td>0.484</td>
<td>0.658</td>
</tr>
<tr>
<td>NMED</td>
<td>0.250</td>
<td>0.941</td>
<td>0.300</td>
<td>0.600</td>
</tr>
<tr>
<td>ODEQ</td>
<td>0.680</td>
<td>0.649</td>
<td>N/A</td>
<td>0.655</td>
</tr>
<tr>
<td>TCEQ</td>
<td>0.305</td>
<td>0.464</td>
<td>0.364</td>
<td>0.385</td>
</tr>
</tbody>
</table>

Figure 3.
Frequency of Enforcement Actions for Violations in Each Program

NMED issued enforcement actions for air violations with the highest frequency, and issued enforcement actions for water violations with the lowest frequency. When combining all media, LDEQ and ODEQ issue a larger percentage of enforcement actions per violation. LDEQ takes the most frequent enforcement measures against waste violations. ODEQ is not represented for waste violations on the graph because no
violations were reported for 2001. ADEQ and TCEQ issue a smaller ratio of enforcement actions when combining all media.

LLA determined that LDEQ is not timely in its issuance of enforcement actions. Eighty percent of enforcement actions for water were issued after the specified timeframe (180 days), along with 29% of hazardous waste actions and 34% of solid waste actions. LDEQ does not handle complaints in the specified time frame, either. LDEQ policy states that 95% of complaints are to be addressed within 5 days, but out of a sample of 354 complaints, only 66% were addressed in time. In New Mexico, at least 25% of drinking water complaints were not inspected in a timely fashion, and 60% of confirmed waste release sites were not handled quickly. ODEQ handled all hazardous waste enforcement cases within the given time in 2001, yet 5 major air facilities remained out of compliance for an average of 274 days. The average time taken by ODEQ to resolve a complaint was only 19 days. TCEQ addressed 100% of leaking petroleum tanks discovered in 2001, and 92% of 1,968 environmental violations from year 2000.
CHAPTER 5

RESULTS: SUCCESS OF CRITERIA FOR ELEMENT 3

5.1 Escalation of Enforcement Actions for Continuing Violations

When a violation is detected, an enforcement action must be issued, to deter the violator from committing further violations. The enforcement action must penalize the facility enough to give a disincentive for breaking regulations, and must ensure the company did not profit from the violation. If no enforcement action is issued, or if the action does not penalize the violator, the company has no incentive to correct its violations. If, upon the issuance of an enforcement order, the facility continues to remain in noncompliance, or continues to violate environmental regulations, the original action was not successful in bringing the facility to compliance.

To induce compliance, the level of action needs to be escalated, which means a more severe enforcement action is issued to the violator. This is to deter noncompliance of the violator and to deter violations from the regulated community. The action needs to be severe enough to penalize the violating facility, preventing it from releasing unwarranted pollution. “The threat of more stringent enforcement actions and penalties remains an important factor in the success of compliance programs” (EPA State Handbook, 1992). Increasing the severity of consequent enforcement actions instills this threat within the regulated community.

“Deterrence of noncompliance is achieved through: 1) a credible likelihood of detection of a violation [Element 1], 2) a timely enforcement response [Element 2], 3) the likelihood and appropriateness of the sanction [Elements 3 & 4], and 4) the perception of the first three factors within the regulated community” (EPA Oversight…
When violations continue or recur, inspections, timely responses and penalties have not been effective in deterring subsequent violations. These violations distort the perception of an effective enforcement program within the regulated community. Environmental enforcement programs that escalate enforcement actions for continuing/subsequent violations are viewed as firm, fair and professional by the regulated community (EPA Compliance Assurance).

A repeat violator is either one who fails to correct the initial violation after the first enforcement action is issued, or who commits a similar type of violation after the initial problem has been corrected. Generally, an informal notice is issued first for minor violations. When the entity remains in noncompliance, or commits a similar violation, a formal administrative enforcement action ensues. When these violations continue, penalties are assessed (or raised, if they are already issued). The issuance of a formal administrative order can also be escalated to a judicial civil order, bringing a formal lawsuit against the violator.

5.2 Arkansas

Out of 30 entities receiving formal enforcement actions for water violations sampled by Arkansas Division of Legislative Audit, only 4 (13%) had received past formal actions since 1995. The audit determined that the past violations were unrelated to the current violations. Due to the facts that only 4 facilities committed multiple violations, and the violations were unrelated, the enforcement program of ADEQ’s Water Quality Division has been effective in deterring permit violations.

However, the initiation of formal enforcement actions by ADEQ is inconsistent. The extent of preliminary actions, taken before formal enforcement is commenced, is up
to agent discretion (AR DLA, 2000). For example, some ADEQ agents are willing to send more (informal) warning letters than others, before initiating a formal administrative order. This allows some companies to continue violating their permit for longer periods of time, while others receive stricter penalties. To penalize violators in an equitable manner, ADEQ needs a consistent method or guideline to escalating ineffective enforcement actions.

ADEQ also fails to document follow-up inspections of violating facilities, and any additional orders than may ensue (ALA, 2000). Without knowledge of previously issued enforcement actions, ADEQ risks issuing unfairly extreme or inappropriately lenient enforcement actions. Without documentation of all inspections and orders, ADEQ cannot equitably penalize continuing violations.

5.3 Louisiana

The EPA defines a violation as “a noncompliance with one or more legally enforceable obligations by a regulated entity, as determined by a responsible party,” (EPA 2002). Therefore, if an agency finds an issue of noncompliance, it should be considered a violation. However, LDEQ defines a violation as “a condition that receives an enforcement action,” (LLA, 2002). Therefore, an “area of concern” is not considered a violation until it receives an enforcement action. Violations receiving certain informal enforcement actions, such as phone calls or written warning letters, are not recorded as violations by LDEQ, distorting the agency’s perception of the frequency of violations. When recording all enforcement actions, the agency realizes repeated violations when they occur. By not recording all enforcement procedures taken, LDEQ does not know when continuing violations are actually occurring. This procedure is ineffective, because
facilities that continue to violate regulations, but are not documented as such due to the manner of the initial enforcement measure, will not receive an appropriately severe penalty.

In measuring the effectiveness of State enforcement activity, the EPA considers the ratio of violations to enforcement actions, or the likelihood that a violation will lead to an enforcement action (OECA 2002). The performance audit conducted on LDEQ revealed violations not receiving enforcement actions. For water permits, 31% of inspection violations and 38% of monitoring violations did not receive enforcement actions. Enforcement orders were not issued to 25% of air monitoring violations. However, all hazardous waste violations received (formal and informal) enforcement actions, and 96% of solid waste violations received enforcement actions. Considering these percentages, LDEQ has been effective in enforcing hazardous and solid waste permits, and, in comparison, ineffective in enforcing air and water permits.

The Legislative Audit performed on LDEQ for 2001 revealed the failure of LDEQ in appropriately escalating enforcement actions (See Figure 4) for continuing violations. Out of 37 facilities receiving multiple enforcement orders for the same or similar types of water violations, 57% were not escalated. For example, LDEQ sent a Compliance Order and Potential Penalty to one facility for an unauthorized discharge. One year later the agency issued another Notice of Violation and Potential Penalty to the same facility, for yet another unauthorized discharge. Although enforcement measures were issued for both violations, the latter violation was no more severe than the former. Twenty-one facilities committed multiple air violations, yet 76% were not issued more severe penalties. Five hazardous waste facilities received more that one enforcement action for
the same violation, of which 58% were escalated. Out of 31 solid waste facilities receiving multiple actions for the similar violations, 71% of the actions were escalated.

Figure 4. Escalated Enforcement Actions Issued by LDEQ

5.4 Oklahoma

Oklahoma meets all federal air quality standards, as well as Arkansas. All of Oklahoma’s Air Quality Control Regions are in attainment, indicating effective enforcement against air violations. However, a study performed by EWG in 1999 shows differently. The study collected data on fines received by violators with major CAA permits, and their total revenues. Out of a sample of 10 Oklahoma companies, 5 major facilities were out of compliance. Their total combined revenue equaled $49 billion, yet their total fines added to $1,080,000. This is only 0.0022% of the companies’ total revenue, hardly an effective deterrent against noncompliance.
5.5 Texas

Texas’ definition of violations is similar to Louisiana’s. TCEQ determines an entity is out of compliance “only if violations result in formal administrative orders or court action,” (TX State Auditor, 2003). Using this definition, TCEQ claims a 95-99% compliance rate. For instance, TCEQ claims that 98.3% of air facilities inspected are in compliance, 99% of water facilities, and 96.5% of waste facilities. However, violations receiving informal administrative actions are not included in calculating the compliance rate. According to a study conducted by an attorney with the Austin office of Environmental Defense, inspectors find violations in one third of conducted inspections, (Dallas News, 2003). The study was sponsored by the Alliance for a Clean Texas, a statewide network of environmental, religious and consumer organizations. Verbal/informal notices do not show up as violations on state reports. Due to this definition, TCEQ has an inaccurate perception of the frequency of violations in Texas, and cannot effectively deter violations until formal enforcement orders are issued.

The 1999 EWG study on CAA violations sampled 50 major facilities in Texas. Of this sample, 28 facilities were in noncompliance status, and only 19 were fined. The total combined revenues of the fined companies equaled $458 billion, yet the total fines imposed upon these companies was $5,703,511. This is only 0.0012% of the companies’ revenues. The study also reported that 21 known significant violators of the CAA were not inspected, along with 73 facilities in significant noncompliance with the CWA. Because of their known violations, these facilities should have been closely monitored by TCEQ to indicate a need for escalated actions, yet they were not even inspected.
TCEQ has a strong penalty policy for repeat violators. When a respondent is designated as a repeat violator at the site under enforcement, the recommended administrative penalty for the case will be enhanced by 25 percent. If culpability exists, 25 percent will be added to the penalty amount as well (TCEQ Penalty Policy, 2002). When enforcement actions do not achieve compliance, TCEQ pursues compliance through the TX Attorney General’s Office (AGO) in court. In 2001, TCEQ escalated 36 actions to civil judicial orders. The AGO issued approximately $6.5 million in penalties. These penalties are significantly more severe than those issued through Formal Administrative Orders. In 2001, TCEQ issued 850 Administrative Orders. Penalties for these orders totaled $4.3 million. Yet, penalties from 36 Judicial Orders totaled $6.5 million.

5.6 Comparison

ADEQ’s Water Quality Division is effective in deterring repeat violations; out of 30 facilities receiving enforcement orders, only 4 were multiple violators, whose current violations were unrelated to past violations. LDEQ, however, is not issuing enforcement actions for all water and air violations. Enforcement measures were not issued for 31% of water inspection violations, 38% of water monitoring inspections, or 25% of air monitoring violations. Almost all hazardous and solid waste violations received enforcement actions. LDEQ is also failing to escalate enforcement for multiple violations. Fifty-seven percent of repeat water violations were not escalated, as well as 76% of repeat air violations. TCEQ failed to inspect 21 known violators of the CAA, and 73 known violators of the CWA.
ADEQ does not regularly document inspections conducted to ensure compliance as a result of a previous violation, or actions that ensue. LDEQ does not record all informal enforcement actions, such as warning letters, and TCEQ does not include informal enforcement actions in calculating compliance rates. These actions all hinder effective enforcement, by preventing agents from identifying past violations of facilities in noncompliance.

EWG gave examples of lenient penalties imposed by both ODEQ and TCEQ. Penalties issued by ODEQ to a group of facilities matched only 0.0022% of the companies’ combined total revenue. Fines imposed by TCEQ on a group of facilities comprised only 0.0012% of their total revenue. According to EWG, these fines are not severe enough to deter these facilities from further noncompliance.

TCEQ increases penalty amounts by 25% for repeat violators, according to their penalty policy. Also, the agency consistently refers escalated cases to the Attorney General’s Office, where a formal lawsuit ensues, and penalties increase significantly.
CHAPTER 6

RESULTS: SUCCESS OF CRITERIA FOR ELEMENT 4

6.1 Ability to Assess and Collect Penalties

Penalties for violations of environmental regulations play an essential role in an enforcement program. “Penalties are a critical ingredient to creating the deterrence needed to encourage the regulated community to anticipate, identify and correct violations. Appropriate penalties for violators offer some assurance of equity between those who choose to comply with requirements and those who violate requirements” (EPA Oversight… 1993). Penalties seek to recover the economic benefit of noncompliance plus a portion reflecting the gravity of the violation. The gravity component is primarily based on the risk of harm to public health and the environment, the regulatory scheme of the violation, and the actual harm resulting from the violation. To ensure equitable treatment of violators, other factors considered in a penalty assessment include: the violator’s history of noncompliance, its inability to pay, the degree of willfulness or negligence, its efforts to comply, and the degree of cooperation with enforcing officials to resolve the violation (EPA Oversight… 1993).

Agencies must have an efficient way to fairly assess penalties. “The EPA has strongly encouraged States to develop written penalty policies,” which are reviewed and evaluated, but not formally approved by the EPA (EPA Oversight… 1993). Utilizing a penalty policy benefits the enforcing agency. A thorough penalty matrix allows “flexibility for state governments to introduce alternative and supplemental sanctions and approaches for calculating economic benefit and directing penalty dollars” (EPA Oversight… 1993). Following a set of guidelines allows for more consistent penalties,
better defensibility in court, a stronger bargaining position during negotiations, deterrence of subsequent violations (based upon economic considerations and more equitable treatment between violators and non-violators), and a basis for penalty decisions under judicial orders.

An inability to collect penalties hinders effective enforcement. If the agency does not collect an assessed penalty, the goal of deterrence is defeated. The facility has no incentive to return to compliance if its penalty remains uncollected and it retains the economic gain of noncompliance. The regulated community is treated inequitably, because violators are benefiting, while those choosing to comply with environmental regulations are doing so at a cost. A final administrative penalty amount must have a deterrent effect on the individual violator, and on other violators in similar positions (EPA Oversight… 1993).

6.2 Arkansas

In determining penalties, ADEQ first groups the violators into categories (see Table 10). Then, certain factors are considered, including the seriousness of noncompliance and its environmental effects; the cooperative and expeditious effort to correct the violation; history of noncompliance; intention of the violator; economic benefit from violation (ALA, 2000).

The 2000 Performance Audit revealed ADEQ is inconsistent in levying fines. The available worksheet is often not used, and broad guidelines are used on a case-by-case basis. For example, in 1999 major water facilities received a higher rate of formal enforcement actions than minor water facilities. Also, penalties against industrial water
facilities are higher than municipal water facilities. Out of 47 water violation enforcement actions, 20 (43%) were against municipal facilities, and 27 (57%)

<table>
<thead>
<tr>
<th>Table 10</th>
<th>Violator Categories Used in Assessing Penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Penalty Range (per day, per violation)</td>
</tr>
<tr>
<td>Low Priority Violators</td>
<td>$300-$3,000</td>
</tr>
<tr>
<td>Medium Priority Violators</td>
<td>$500-$5,000</td>
</tr>
<tr>
<td>High Priority Violators</td>
<td>$1,000-$10,000</td>
</tr>
</tbody>
</table>

were against industrial. Yet, municipal facilities received only 14% of the penalties ($10,925). Industrial facilities received 86% of the issued fines ($68375). This relationship, in regard to formal actions issued and penalties assessed, is illustrated in Figure 5. The audit recommended that ADEQ “develop a more uniform penalty structure that provides for the initiation of formal enforcement and the levying of fines based upon predetermined guidelines and equitable formulas” (ALA, 2000). This will ensure enforcement actions and fines are fairly distributed among violators of all facility types.

6.3 Louisiana

The Legislative Audit performed on LDEQ shows that from 1999 to 2001, 171 penalties were issued equaling $5,981,793.91. However, $4,458,344.66 still remains uncollected. Of the penalties assessed, 58% of water penalties were not collected, 66% of air penalties were not collected, 78% of hazardous waste penalties were not collected, and 98% of solid waste penalties were not collected. Overall, LDEQ has failed to collect 74.5% of the penalties it issued from 1999 to 2001.
All penalties that LDEQ collects are deposited into the Hazardous Waste Site Cleanup Fund, unless the balance in the fund is greater than $6 million. If the fund is above $6 million, the penalties collected are transferred into the Environmental Trust Fund, which are LDEQ’s operating monies (LLA, 2001). According to the LLA, the Hazardous Waste Fund is normally above $5 million. Therefore, by not collecting all the penalties assessed, LDEQ is not receiving all of the money it is owed for environmental violations. Failure to collect also weakens the penalty’s affect in deterring noncompliance.

6.4 New Mexico

Few statistics on NMED penalties were available. However, the guidelines NMED follows in order to assess penalties are uniform and equitable, matching EPA standards (described in EPA Oversight… 1993). NMED penalty guidelines are shown in
Table 11. In year 2000, NMED reported 181 underground storage tank violations. Of these, 143 were issued Notices of Violation. The remainder was issued fines, totaling $23,700.00. In 1999, $357,323 was collected as a result of air permit violations.

Table 11
NMED Civil Penalty Guidelines

- Maximum civil penalty to be levied: $15,000 per violation, per day
- Procedure followed to calculate penalty:
  1. Determine the gravity-based penalty amount;
  2. Add the multiple day component (if applicable);
  3. Adjust the sum for case specific factors;
  4. Add the economic benefit of noncompliance.
- Factors to consider for adjustments:
  1. The true effort of the facility to comply;
  2. Culpability of the violator;
  3. The facility’s history of noncompliance;
  4. The financial condition of the facility/violator.

6.5 Texas

Texas uses similar criteria set forth by other states to calculate penalties. Determinants include the nature of the violation, the severity of its impact, compliance history, culpability, good faith efforts to comply, economic benefit, and deterrence value (TCEQ Annual Report, 2002). TCEQ’s penalty policy also sets straightforward criteria for assessing fines against repeat violators and culpable violators. If a facility in noncompliance is considered a repeat violator, the original penalty is to be increased 25%. The same guideline applies to a culpable violator.

Studies performed by the Alliance for a Clean Texas have found that the average penalty administered by TCEQ has declined, from $15,000 in 1996 to $7,500 in 2000.
(Dallas News, 2003). The average penalty for water quality violations alone has dropped from $13,000 to $1,000. In 1998, the State Auditor’s Office determined TCEQ methods of collecting and reporting administrative penalties were poor (SAO 98-070). Their findings show that over $4.29 million in penalties went uncollected in 1998.

6.6 Comparison

In order to make a comparison of the policy mechanisms of the Region VI states, I accessed the EPA ECHO database, using the same criteria as in CHAPTER 3. I only included major sources for water and air, and TSDs for waste, since these inspections are federally reportable. The same timeframe is used as well, from 2001 to 2002. I obtained the number of facilities in noncompliance for each media, and the number of enforcement actions issued for each media. I then obtained the number of penalties issued, to determine the ratio of penalties to violations. The data is recorded in Table 8 (CHAPTER 4). The frequencies with which each state agency issues penalties for violations are recorded in Table 12. Figure 6 summarizes the number of penalties issued per violation.

<table>
<thead>
<tr>
<th>State Agency</th>
<th>ADEQ</th>
<th>LDEQ</th>
<th>NMED</th>
<th>ODEQ</th>
<th>TCEQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penalty Frequency</td>
<td>0.584</td>
<td>0.222</td>
<td>0.829</td>
<td>0.669</td>
<td>0.356</td>
</tr>
</tbody>
</table>

NMED issues penalties for noncompliance of major sources more frequently than other state agencies. For 2001, NMED issued penalties to 83% of major permit violators. LDEQ is the least frequent, issuing fines to only 22% of major permit violators. TCEQ
issued fines to 36% of the violating facilities, ADEQ issued penalties to 58%, and ODEQ issued penalties to 67% of major source violators in 2001.

![Frequency with which Agencies Issue Penalties for Violations](image)

**Figure 6.**
Frequency with which Agencies Issue Penalties for Violations

ADEQ is inconsistent in levying fines. Although industrial water facilities accounted for 57% of the violations in a sample taken by the Arkansas Legislative Auditor, they received 86% of the levied fines. Municipal water facilities accounted for 43% of the violations, yet only received 14% of the penalties.

LDEQ and TCEQ both need to improve their methods of collecting penalties. From 1999 to 2001, LDEQ issued $5,981,793.01 in penalties, but only collected $1,523,448.35. This is only a 25% collection rate. In 1998, TCEQ failed to collect $4.29 in penalties.
Figure 7. Trends in Environmental State Agency Functions

Figure 7 gives a brief summary of the enforcement functions of each state agency. Most of the data that has been compared thus far is included in the chart. With the exception of expired permits, the information is not media-specific; it covers trends from air, water and waste enforcement.

According to this data, NMED has been the least efficient in decreasing its backlog of expired permits. According to the study conducted by EWG, for year 2000, New Mexico’s percentage of expired water permits was 59%. This inhibits New Mexico from meeting its newest water quality goals, as outdated permits may not be protective of current standards. Arkansas was the least “inefficient” of the agencies in renewing water permits.
permits, considering their backlog was only 12% of the water-regulated community. It is crucial for regulating agencies to review and renew permits when they expire. To achieve environmental goals, states often increase the restrictions in permits when they are renewed. When operating under old permits, facilities are not further reducing their emissions or discharges, inhibiting the attainment of that goal.

Figure 7 illustrates the state’s inspection rates for major facilities as well. Inspections are necessary to verify compliance with environmental regulations. Self-monitoring reports aid in monitoring compliance, yet there is always a risk that the information included in these reports is erroneous. Therefore, regular inspections are inherent in identifying violations. I have used inspection rates as a factor in comparing the effectiveness of state environmental enforcement.

For years 2001 to 2002, I obtained (from ECHO) the number of permitted air, major water, and TSD facilities for each State agency within Region VI, and compared them with the number of inspections conducted. Based on this data, ADEQ has consistently higher inspection rates than the other states. ADEQ inspected at least 90% of facilities within each media and 94% of the total major facilities inspected. NMED had consistent inspection rates as well, but they were below 80% in all media. With the exception of water inspections, TCEQ had lower inspection rates than the other agencies. In the 2 year time period, it only inspected 35% of its major permitted facilities.

Both TCEQ and LDEQ were inconsistent in their inspection frequencies. Both states need to increase the rate with which they inspect major air facilities. For instance, of the Region VI states, LDEQ inspected the highest percentage of major water and waste facilities (99% and 98%, respectively). However, its inspection rate of major air facilities
was only 63%. As shown in Table 8, air facilities committed the most violations in Louisiana during this time frame.

The same rationale applies to TCEQ. Although all of its inspection rates were relatively low, TCEQ inspected air facilities the most infrequently. TCEQ’s inspection rate was 78% for water facilities, 53% for waste facilities, and only 20% for air facilities. Yet, air facilities had a greater number of violations than the other facilities. Louisiana and Texas need to inspect air facilities more frequently, to deter these violations.

When violations are discovered, enforcement actions must be administered as quickly as possible, to deter subsequent violations from both the violator and the regulated community, and to prevent excess pollutants from entering the environment. EPA’s criterion for timely enforcement is to address violations within 180 days of the inspection discovering the violation. A timely complaint management process is necessary as well, to uncover previously undiscovered violations. Enforcing infractions discovered from complaints will in turn deter subsequent violations and further protect the environment.

According to the data in Figure 7, the percentage of violations found through inspections was fairly constant for all states. LDEQ had the lowest frequency of violations through out the Region. The agency also assessed fewer penalties per violation, and issued more formal actions per violation. However, this does not necessarily indicate that LDEQ has the most effective enforcement program. When comparing enforcement functions for individual media, it is evident that each state has strengths and weaknesses in its enforcement functions.
To compare the states’ records of issuing enforcement actions across individual media, I calculated the ratio of the ‘number of enforcement actions issued’ to the ‘number of violations discovered,’ using data from ECHO. The results were recorded in CHAPTER 4. NMED issued enforcement orders for air violations more frequently than for any other media, yet issued enforcement orders for water and waste violations at a relatively much lower rate. The other agencies were more consistent in issuing enforcement actions across all media. ODEQ and LDEQ issued more enforcement actions per violation than the other states. In comparison, ADEQ and TCEQ issued orders at a much lower rate.

To determine whether each agency’s enforcement record was deterring violations, I compared the number of violations discovered to the number of inspections conducted. I compared this trend for all states across all media, shown in Figure 8.

Figure 8.
Frequency of Violations Found During Inspections
Although ADEQ was very consistent in its inspections, at rates above 90% for all permit types, almost 70% of the TSDs inspected had violations. TSDs had the highest frequency of violations in Arkansas, yet ADEQ issued enforcement orders to these facilities at the lowest rate. In order for inspections to effectively deter violations, enforcement actions need to be issued when violations are found.

New Mexico is consistent across all categories with inspection frequency as well, yet hazardous waste violations occurred at a greater rate than other violations. As discussed in CHAPTER 4, NMED is not timely in issuing enforcement actions against leaking hazardous waste sites. NMED also issues few enforcement actions for hazardous waste violations. Figure 3 shows that the agency issues orders for only 30% of violations. The low percentage at which NMED issues waste enforcement actions, and the slow pace at which they are issued, are not effectively deterring waste violations, because these violations occur at such a large rate compared to air and water violations.

In 2001, ODEQ inspected 92% of its TSDs, and found no violations. Of the other hazardous waste sites violating regulations, either formal or informal enforcement actions were issued to all. Judging from ODEQ’s complaint process, the agency is also timely in issuing enforcement actions. Of 4622 complaints received in 2001, 98% were resolved in less than 120 days, the average being 19 days. Because there were no TSD violations in 2001, and because of ODEQ’s high inspection and timely enforcement rate, ODEQ has been effective in deterring hazardous waste violations.

With the exception of Oklahoma, the percentage of violations by hazardous waste facilities was higher than that of air or water permitted facilities, exceptionally so in Louisiana, New Mexico, and Arkansas. Despite this proportion, these three states issue
fewer formal enforcement actions for waste violations than for other violations. LLA reported that LDEQ had issued either formal or informal enforcement actions to 100% of the hazardous waste violations occurring from 1999 to 2001. Because of the low frequency of formal actions issued, it is evident that the majority were informal actions. Judging from the high percentage of conducted inspections, the relatively high rate of waste violations, and the slow rate at which they are issued (29% were determined as untimely by LLA), LDEQ’s use of inspections and informal enforcement orders is ineffective, or not deterrent.

The methods LDEQ uses to calculate timeliness inhibit their ability to enforce these actions quickly. Despite the fact that the Enforcement Division contends with all permits, LDEQ assesses timeliness differently for each media-specific enforcement action. This creates complexity in processing timely enforcement actions, because agents do not have a standard method of ensuring that violations (of permits for each media) are handled within the required time period. Calculating timeliness in the same manner for all enforcement actions will aid LDEQ in processing actions more quickly, by reducing complications in different formulas. Efficient data maintenance also contributes to this process, as a central database would reduce time taken to find information on violators, such as compliance history, and enforcement actions already issued.

Without an efficient method of managing data, an enforcement agency cannot successfully monitor the regulated community. If data is incomplete or inaccessible, the agency cannot accurately monitor compliance trends to ensure violations are not repeated, because the compliance and inspection records are missing. If repeat violations occur, the agency cannot impose an appropriate penalty on the violator, because 1) it has
no record of the past violation, or 2) it has no record of the initial enforcement order. To appropriately identify violations and enforce regulations, data needs to be accurate, reliable, complete, and accessible.

LDEQ, NMED, and TCEQ are all currently implementing central data systems into their operations, to improve operational efficiency. LDEQ has problems with data management, as approximately a quarter of water discharge reports and a quarter of air emission inventories are missing. Its new data management system, TEMPO, will merge all data into one centralized system. NMED has reported having a poor system of data maintenance and management, which is projected to be mended with IDEA, an integrated environmental data information system. TCEQ is centralizing data with its Central Registry, and incorporating more specific data (still available in Central Registry) into 3 other accessible databases. ODEQ has the most efficient data management system, because it is the only one fully integrated to date. The database, TEAM, has reduced reporting time by 75%.

For speculative purposes, I wanted to evaluate the size of each environmental agency compared to the size of the facilitated community. My intent was to check for a correlation between agency size (i.e. the workload of the agency) and agency performance within each element.

To determine the workload of each agency, I divided the number of permitted facilities in each state by the number of employees in each agency (See Figure 9 for comparison). Although the agencies contain clerical personnel as well as agents, the ratio of clerical personnel to agents in each state should be similar. A large agency requires a greater number of clerical employees and a greater number of agents. A smaller office
needs fewer clerical employees, and fewer agents. There is no basis to believe the ratio of employees would be any different. Therefore, including all duties employees should have no effect on my analysis.

Using this method, LDEQ employees undertake the largest amount of responsibilities. The ratio is highest for Louisiana, with 21.1 regulated facilities per employee. Oklahoma has 16.9 facilities for every ODEQ employee; Arkansas has 15.6 facilities per ADEQ employee; and each NMED employee accounts for 11.8 facilities. TCEQ has the greatest amount of employee resources, in terms of facilities per employee. The ratio for TCEQ is 11.2 facilities per employee. If employee number, in terms of the state agency’s workload, has an effect on the performance of enforcement programs, then TCEQ and NMED should have the largest output in each performance measure. In turn, LDEQ should have the lowest output for each element, because each employee has a relatively higher amount of responsibilities.

Agency performance in the enforcement elements coincided with this hypothesis in some areas, and conflicted in other areas. For example, if there is a correlation between employee/facility numbers and agency output, TCEQ and NMED should have conducted the highest percentage of inspections for year 2001, and LDEQ should have conducted the lowest. However, TCEQ and NMED inspected the lowest percentage of facilities when comparing all five states.

LDEQ has a relatively large number of expired permits, coinciding with the hypothesis. Yet, NMED has an even larger percentage. LDEQ issued more enforcement actions than NMED and TCEQ, but issued the smallest percentage of penalties. As predicted by the workload ratio, LDEQ was inefficient in issuing timely enforcement
actions, and TCEQ was successful. However, NMED had timeliness issues as well.

Both LDEQ and TCEQ were found to be ineffective in collecting penalties.

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**Figure 9.**
*Facility-Employee Ratio for Each Agency*

Overall, agency actions do not correspond with the facility/employee ratio.

TCEQ has the most employees per facility, yet conducts the smallest percentage of inspections, issues the lowest percentage of penalties, and failed to collect a significant amount in penalties. In contrast, LDEQ has the fewest number of employees per facility, conducts a large percentage of inspections, and issues a larger percent of enforcement actions per violation. NMED has a relatively small workload, but the largest percentage of expired water permits. In analyzing performance, the ratio of facility number to employee number is not a concrete factor.
CHAPTER 8

CONCLUSION

8.1 Comparing the Elements

To evaluate the effectiveness of state environmental enforcement, I researched the output of each state agency within four elements:

1. The appropriate identification of violations;
2. The timely issuance of enforcement actions;
3. The escalation of enforcement actions for continuing violations; and
4. The ability to assess and collect penalties.

While each of these elements is individually important in a successful enforcement program, the agencies’ success in each element is affected by the agencies’ output for all of the elements. This became apparent in CHAPTER 7, with analytical comparisons of state efficiency. For example, LDEQ inspected 98% of its TSDs in 2001. Although the agency was successful in Element 1, almost 50% of the facilities inspected were in violation. This is due to lack of success in fulfilling the other elements. LDEQ issued fewer formal enforcement orders to waste facilities than it did to other facilities, and issued them in an untimely manner. Inspections cannot be deterrent if there is little threat of an ensuing enforcement action.

The common goal of each element is to deter the regulated community from violating environmental laws. When permitted facilities perceive that agencies are likely to identify violations, and that the agencies will issue swift and aggressive penalties, they are dissuaded from disobeying regulations. However, the community must perceive these actions by as effective. If the community believes that agencies will not issue
appropriate penalties upon discovery of a violation, the regulated facilities have no incentive to take extra precaution against spills and accidents. In addition, if the community realizes that penalties will be issued, but perceives that the enforcing agency is unlikely to inspect or identify violations, then there is nothing to deter the community from subsequent violations.

Inspections establish a field presence within the regulated community. If they are routinely and consistently conducted, facilities will make a greater attempt to remain in compliance. The threat of enforcement actions for violations discovered during an inspection is a deterrent against violations. When a violation is detected, an enforcement action must ensue, in a timely manner. If the enforcement agency habitually fails to issue penalties and orders in the quickest time possible, violating facilities will remain in noncompliance for an extended amount of time, defeating the purpose of the agency: to protect and preserve public health and the environment. Understanding that a violation will result in a swiftly issued enforcement order deters facilities from intentional violations.

Once a penalty is issued, the enforcing agency must collect. Time frames need to be set, for both penalty payment, and correction of the violation. If the enforcement agency continually fails to collect penalties, the regulated community will take notice. Once this perception is established, the use of penalties has lost its deterrent value, because facilities will expect any assessed penalties to go uncollected. A guideline or policy on issuing penalties is just as essential. These guidelines ensure penalties are being equitably assessed. Penalties that are extremely lenient are unjust to those entities choosing to remain in compliance with environmental regulations, and to those violators
receiving inappropriately austere fines. Inappropriately lenient penalties fail to deter the sentenced violator from recurrent violations.

Finally, when entities continue to break regulations after an enforcement action has been issued, the issuing agency is obligated to issue a more severe order. This obligation is to the public whose health the agency is protecting, to the regulated community remaining in compliance (to be equitable), and to the enforcing agency. The agency has an obligation to itself to ensure that the regulated community perceives it as both firm and fair. Ultimately, it is this perception that deters noncompliance.

8.2 Appropriate Identification of Violations

8.2.a Data Maintenance

To ensure the regulated community is dissuaded from violations, an environmental enforcement agency must have the ability to identify and recognize violations when they occur. This is done through field inspections and efficient data management. Data must be maintained in an easily accessible information system, to store an inventory of the regulated community. This inventory is utilized as a basis for targeting, inspecting and monitoring. These databases are also important for other enforcement procedures. They inform agents on the timeliness of enforcement actions issued to violators, the compliance history of violators, and past enforcement proceedings for repeat violators.

All five states are currently using or implementing a central database system, allowing them to access all reported information on the regulated community within their jurisdiction. ODEQ is at the forefront, with its “TEAM” database. ODEQ’s Air Quality Division has already experienced substantial results from the database, which has cut
reporting time by 75%. LDEQ, NMED and TCEQ are taking a step in the right direction. All agencies reported difficulties resulting from poor data management, and are taking steps to improve the problems.

8.2.b Inspections

In measuring the progress of state activity, the EPA uses data such as the agencies’ inspection frequencies (OECA, 2002). The frequency is the likelihood that a facility will be inspected each year. As with all program measures, most of the state agencies demonstrated strengths and weaknesses. The Arkansas Department of Environmental Quality performed the best in identifying violations. The agency was consistent in its inspections of media-specific programs. LDEQ and TCEQ both had substantial inconsistencies in their frequency of inspections for each media-specific program. For both agencies, inspection rates for air programs were considerably lower than for other programs. To ensure deterrence across all programs, consistency is important. When a media-specific program is continuously inspected less frequently than others, the community within that program loses the field presence that inspections establish. Facilities no long perceive the risk of penalties when inspections are seldom conducted, and the deterrent nature of inspections is lost.

8.3 Timely Issuance of Enforcement Actions

When violations are discovered, enforcement actions must be issued as quickly as possible, to prevent further environmental damage, and to deter subsequent violations. When actions are issued quickly, the perception of a sound enforcement program is strengthened within the regulated community. Thus, the deterrent value of the
enforcement action is increased. For the same reason, complaints also need to be handled quickly.

In all states but Oklahoma, a greater percentage of total hazardous waste facilities were in noncompliance, compared to other media-specific programs. Yet, these facilities consistently received fewer enforcement orders than the other programs. This demonstrates a weakness on the state agencies’ part, as hazardous waste facilities are not effectively discouraged from noncompliance.

With the exception of ODEQ, the agencies were fairly inconsistent in issuing enforcement actions for the media-specific programs. NMED was the most inconsistent, issuing enforcement orders to almost all air violations, but to less than 40% of waste and water violations. This has been effectively deterrent to air facilities, due to the fact that such a relatively small percentage of air facilities committed violations. The water and waste facilities are not dissuaded, though, judging from the higher percentage of violations from these facilities. The agencies need to issue enforcement actions more consistently among the violating media-specific programs, to effectively deter further violations from all sectors.

According to the data, ODEQ’s performance in issuing enforcement actions is the most deterrent, in comparison with the other agencies. ODEQ is consistent in the percentage of enforcement actions it issues for media-specific programs, and the percentage of violations committed by media-specific programs is consistent. There are no major outliers, as with the percentage of hazardous waste violations in New Mexico and Arkansas. The agency resolved 98% of received complaints in less than 120 days in 2001. The average time to resolve a complaint was only 19 days. For all other waste
violations (excluding TSDs), enforcement actions were issued to all, within EPA’s timeliness guidelines (180 days).

8.4 Escalation of Enforcement Actions for Continuing Violations

When a violation continues, or recurs after an enforcement order has been issued, the initial enforcement action was not severe enough to deter subsequent violations. When this occurs, enforcement agencies need to issue a new, more severe penalty. This is done for several reasons. First, actions are escalated to bring the violator into compliance. When in noncompliance, the violator is affecting the quality of the environment. Second, any economic benefit the violator may have gained needs to be accounted for. This ensures all facilities are treated equitably, by not allowing violators to have a competitive advantage. Finally, actions are escalated to deter the violator from remaining in noncompliance, and to deter subsequent violations from members of the regulated community. When enforcement actions are escalated, the community’s perception of the threat of more stringent actions and penalties is enhanced. In turn, the facilities are daunted, and effectively deterred from disobeying regulations.

Enforcement programs within each state agency had mixed results in efficiently escalating enforcement actions. For example, ADEQ is inconsistent in its initiation of formal enforcement actions. The extent of informal actions that can be taken before a formal order is issued is up to agent discretion. The agency also does not document actions, such as follow-up inspections, or additional informal notices, following the initial warning. Because of this, multiple violators are keeping the benefits gained from violations, and often are not reported as multiple violators. By failing to report all actions, facilities are not deterred by escalated actions.
Both LDEQ and TCEQ suffer from this same fallacy. Informal actions are not always reported or incorporated into compliance rate calculations. LDEQ also failed to issue escalated enforcement actions for many repeat water and air violations.

However, TCEQ has guidelines that are used to determine the escalated penalty for repeat violators. This allows for consistency and equity in treatment of repeat violators. None of the agencies were completely efficient, or more so in relation to the others. Policies on reporting all enforcement actions, and documenting all follow-up activities would enhance the agencies’ ability to effectively administer escalated enforcement actions.

8.5 Ability to Assess and Collect Penalties

Penalties are important because they serve another purpose (along with encouraging compliance and creating deterrence). Penalties strive to ensure equity among the regulated community. They are also issued to ensure violators do not get a competitive edge over neighboring, non-violating facilities. The threat of penalties for violations is a deterrent to the community, as long as the enforcing agency collects them when they are assessed. When enforcement programs fail to collect assessed penalties, the community no longer takes the threat seriously, and the penalty process has lost the value of deterrence.

Most agencies need to improve their penalty procedures. For instance, ADEQ is inconsistent in levying fines to major water sources. Although municipal water facilities accounted for 43% of water violations in 2001, they were only issued 14% of the total assessed penalties. Industrial water facilities received the remaining 86%. According to
ALA, ADEQ personnel agreed that penalties against municipally owned water facilities are not an effective deterrent against future violations.

LDEQ and TCEQ have each failed to collect over $4 million in assessed fines. These agencies cannot effectively deter violations through enforcement actions if they continue to allow the penalties they assessed to go uncollected. The regulated community will no longer perceive penalties to be a serious threat, until the agencies improve this aspect of the enforcement process. The two agencies levy fines less frequently than the other states, however, major facilities in Louisiana and Texas commit violations less frequently per year than in New Mexico, Oklahoma or Arkansas.

8.6 Evaluation

Without being efficient in all four elements, a state environmental enforcement agency cannot be considered to have the best or most effective program. Success in each individual element is important, but the most effective enforcement program will be efficient in all four elements, because performance in one aspect of environmental enforcement has an effect on all other aspects. Frequent inspections are needed to monitor the regulated community, and to deter the community from violating environmental regulations. However, inspections lose their deterrence value if enforcement actions are not issued for violations. Initial enforcement actions lose their deterrence value when recurring violations do not receive escalated actions. Finally, the community will not take these escalated actions seriously if the penalties issued are not collected.

An effective program would use the information provided from all areas of the elements to make educated enforcement and monitoring decisions. Inspections reveal
which media-specific programs are most frequently violated. The agency can then place primary focus on those programs, until violation trends are more consistent across all programs. Reviewing trends of past enforcement for violating programs will give data indicating parts of the enforcement program that are not deterring the programs from violating requirements. For example, NMED is fairly consistent in frequency of inspections across all media-specific programs, but a much larger percentage of waste facilities are in noncompliance. By browsing over the information for each enforcement function, one can see that NMED infrequently issues formal enforcement orders to waste facilities, compared to other programs.

None of the Region VI State environmental agencies are completely efficient in all four enforcement areas. Strengths and weaknesses were evident for each state throughout the analysis. Although some states have more strengths, and some have more weaknesses, all can improve on their environmental enforcement procedures. I was surprised by some of the findings, though.

Beginning this research, I expected LDEQ to be the most inefficient in almost all aspects; because of the exposure I received to environmental crime while interning with the EPA CID office. I didn’t have any preconceptions about Oklahoma or Arkansas, but I did expect New Mexico and Texas to be quite efficient. My only basis for these assumptions was the research I had conducted in previous years on NMED’s Green Zia Environmental Excellence Plan, and my exposure to Region VI news from the Region Headquarters in Houston. However, Louisiana actually had a smaller frequency of violations in comparison with the other states, and it issues enforcement actions more frequently. New Mexico had the largest percentage of expired permits, and is
inconsistent in issuing enforcement actions. TCEQ is inefficient in collecting penalties, conducts the smallest ratio of inspections, and is inconsistent in the proportion of inspections per media-specific programs. Further data analysis needs to be conducted to determine the best method to improve these programs, and which elements are most effective, or most deterrent, in each state’s regulated community.

“An effective enforcement program results in high rates of compliance, provides credible deterrence, and achieves positive environmental results” (EPA Compliance Assurance). A strong program also ensures that enforcement measures are applied in an equitable manner, preventing violators from economically benefiting to the disadvantage of entities spending money to remain in compliance (TCEQ Annual Report, 2002). The four elements of effective environmental enforcement are designed to provide for this. Inspections, monitoring, and swift, strong enforcement actions provide the deterrence. When facilities positively respond to this deterrence, high compliance rates result, which in turn lead to positive environmental results. When violators are penalized, those in compliance are treated more equitably, and are therefore deterred from violations as well. Most importantly, a strong enforcement program ensures that the public and environment receive the benefits of the promises embodied in environmental statutes, regulations and permits.
CHAPTER 9

RECOMMENDATIONS

9.1 Performance Evaluations

The state agencies should evaluate their performance in each of the elements. As mentioned before, this would give invaluable information for department utilization. The agency would be able to determine what actions need to be taken to correct any inefficiency, and it could determine reasons why its actions are not deterring violations. For instance, an agency may conduct regular, frequent inspections, but still find a low compliance rate. These elements would allow the agency to look at perspectives it may not have thought of, such as the lack of documentation of informal enforcement orders. The regulated community’s perception of the agency can be taken into account as well. Deterrence is achieved through the community’s perception of the effectiveness of agency programs. Evaluating this perception may lead to less obvious, but just as beneficial, solutions.

9.2 Inspections

Agencies that are limited on resources may have difficulties conducting systematic inspections to detect non-compliance (EPA Compliance Assurance). One alternative is to conduct target inspections. Target inspections are conducted by developing inspection priorities, taking into account factors such as: the nature and magnitude of the threat; the availability of resources for preventative action; and the results of past leak incidents.
Another option is to use alternative inspectors. States can delegate certain compliance monitoring responsibilities to other governmental entities or to private parties through certification (EPA Compliance Assurance).

State environmental protection agencies could also team up with other governmental agencies, to share monitoring responsibilities. Usually there are other state environmental organizations that take samples from the environment, or monitor pollution trends. For example, the Oklahoma Water Resources Conservation Commission (WRCC) monitors the health of Oklahoma’s waters. By sharing monitoring and pollution data, the two agencies could actually save a lot of time and manpower.

9.3 Measure Environmental Results

To get a different perspective on the effectiveness of enforcement programs, states can measure environmental results, and compare the environmental trends per year. For example, states can monitor their toxic air emissions, and compare the results to determine 1) if environmental quality is improving; and 2) if the agency’s current practices are effective. The states can compare their emissions per person, per square mile, and in total, to monitor environmental health.

9.4 Strive to Fulfill Each Element

Most importantly, each agency should strive to fulfill each element. Consistency is key. Media-specific programs should be inspected with a consistent frequency. Enforcement actions should be issued for violations at a consistent frequency across all media. A policy for the consistent escalation of enforcement actions is necessary to prevent discrepancies in the treatment of violators. Guidelines for assessing penalties
will ensure the equitable treatment of all facilities, including those in compliance. A timetable for collecting penalties is also helpful, to ensure penalties are actually collected, and to maintain the deterrence characteristic of penalties.
REFERENCES


---. Legal Division. Interview with author. 24 March 2003.


Louisiana. Department of Environmental Quality. “Re: env enforcement information.” E-mail to author.


New Mexico. Environment Department. “Questions for NMED.” E-mail to author. 26 March 2001.


“Criminal Investigation Division Statistics for the Fiscal Year 2000.” Received from Region VI CID Office in Baton Rouge, 2002.

“Criminal Investigation Division Statistics for the Fiscal Year 2001.” Received from Region VI CID Office, 2002.


“Public Participation in Louisiana’s Air Permitting Program and EPA Oversight.” Audit Report 01351-2002-P-00011. 7 August 2002.


APPENDIX A

REGION VI STATE ENVIRONMENTAL AGENCIES

Arkansas Department of Environmental Quality (ADEQ)

The Arkansas Department of Environmental Quality has a staff of approximately 361 members, and a budget of $30,000,000. ADEQ is composed of several regulatory Divisions, including separate sectors for air, water, solid and hazardous waste.

The Air Quality Division (AQD) is composed of three branches. The Permits Branch issues Title V permits, minor source permits, general permits, and permit modifications. The Enforcement Branch ensures that permitted facilities are operating according to state and federal regulations through inspections, stack testing, and monitoring of reports. The Planning & Air Quality Analysis Branch reviews and revises regulations, analyzes pollutant emissions and population exposure, and provides technical and educational assistance as necessary.

The Water Quality Division (WQD) issues NPDES permits, state permits, storm water permits, animal waste permits, land application permits, subsurface wastewater disposal permits, and underground injection well permits. Four branches establish the Division. The Inspection Branch investigates citizens’ complaints and performs routine inspections. Under federal regulation, all NPDES permits are inspected annually. The NPDES Branch and the State Permits Branch administers all permits. The Water Quality Planning Branch develops water quality standards, and assesses the quality of Arkansas’ waters.

The Solid Waste Management Division (SWMD) regulates the management of recycled materials and the disposal of non-hazardous solid waste. There are five
branches in this Division. The Technical Branch is responsible for all facility permitting, including landfills, composting facilities, waste recover facilities, and transfer stations. The Enforcement Branch gives compliance assistance, investigates complaints, and takes enforcement actions. Inspections are conducted quarterly, and are unannounced. The Programs Branch collects fees and administers programs for grants, licensing and waste tire management. The Recycling Branch offers grants and assists in recycling programs, and the Market Development Branch assists in the development of markets for recycled materials.

The ADEQ Hazardous Waste Division (HWD) has received delegation of RCRA from the EPA, and administers a State hazardous waste program as well. Three branches comprise the HWD. The Active Sites Branch permits and inspects facilities that treat, store and dispose of hazardous waste (TSDs). Unannounced inspections are performed annually, and scheduled inspections are conducted twice yearly for commercial TSDs. The Inactive Sites Branch investigates abandoned sites potentially containing hazardous waste, and manages maintenance and cleanup of abandoned sites. The Technical and Administrative Support Branch coordinates enforcement actions, risk assessments, data management and administration for the Division. (www.deq.state.ar.us).

**Louisiana Department of Environmental Quality (LDEQ)**

The Louisiana Department of Environmental Quality has an annual budget of $113,000,000, and currently staffs about 1000 employees. It is the primary governmental agency in Louisiana concerning environmental protection and regulation. LDEQ has three main offices, which deal with all media-specific programs. The Office of Environmental Services issues all permits. The Office of Environmental Compliance
conducts inspections, complaint investigations, and enforcement actions. The Office of Environmental Assessment implements regulations, conducts ambient monitoring, and remediates contaminated sites.

For discharges into water, LDEQ issues major source permits, minor source permits, general permits, and NPDES permits on behalf of the EPA. Air permits issued by LDEQ consist of state permits, Title V permits, air toxics permits, and New Source Review (NSR) permits. Under federal authorization of RCRA, LDEQ issues permits to TSD facilities, and oversees generators of hazardous waste (not required to have permits). The EPA does not direct LDEQ’s solid waste program. Permits are issued to disposal facilities (both industrial and non-industrial), processing facilities (industrial and non-industrial), and to separation facilities, composting facilities, and construction/wood waste landfills. (www.deq.state.la.us)

New Mexico Environment Department (NMED)

The New Mexico Environment Department staffs approximately 600 employees, and has an annual budget of $45 million. NMED is responsible for New Mexico’s environmental management and protection through permitting and enforcement actions, remediation efforts, and public outreach. The Department’s branches are subdivided into Bureaus striving for quality in each media. The Environmental Protection branch covers air and solid waste. The Water & Waste Management branch includes ground water, surface water, and hazardous waste.

The NMED Air Quality Bureau (AQB) has statewide jurisdiction, with the exceptions of Albuquerque and Bernalillo Counties and tribal lands. The Bureau’s Permits Section issues and modifies permits for stationary and mobile sources, for Title V
standards, and for other federal stipulations. The Compliance Section assesses facilities out of compliance, and ensures they return to compliance status. It also calculates penalties for violations, and conducts settlement negotiations. The Enforcement Section performs inspections on permitted facilities to ensure compliance with state and federal regulations, and carries out enforcement actions when appropriate. The Technical Analysis Section evaluates permits and regulations to ensure pollutants are meeting federal and state standards.

The NMED Solid Waste Bureau (SWB) is responsible for the mandates of state and federal solid waste regulations. The focus of the Bureau’s efforts emphasizes developing cost effective solid waste management systems, assisting communities with regulatory compliance problems, prosecuting and reducing illegal dumping, and implementing ground water monitoring programs at required sites. The SWB issues permits to landfill facilities, transfer stations, and to recycling, compost, and infectious waste treatment facilities. Routine inspections are conducted on these facilities, however much of the enforcement effort is spent on illegal dumping.

The NMED Ground Water Quality Bureau (GWQB) aims to protect and improve the states’ ground water quality through pollution prevention and regulatory programs. The GWQB establishes ground water quality standards, assesses ground water quality, adopts regulations and issues discharge permits, and takes enforcement action when necessary.

NMED Surface Water Quality Bureau (SWQB) evaluates surface water conditions in all continuously flowing rivers and streams, and funds non-point source pollution cleanup projects. Compliance inspections are conducted to ensure state and
federal regulations are not violated. NPDES permits are federally issued, as NMED is not authorized under this program. SWQB uses grant funding to coordinate efforts preventing discharges into watersheds.

The NMED Hazardous Waste Bureau (HWB) ensures hazardous waste generators manage, transport and dispose of wastes safely. Site Inspections and audits are conducted to test compliance. The Bureau follows RCRA guidelines for permitting, inspections and enforcement. A Technical Assistance Program, sponsored by HWB, provides consulting services to businesses. Clean up of contaminated sites is receiving much attention, and abandoned hazardous substances are handled on an emergency basis.

(www.nmenv.state.us)

Oklahoma Department of Environmental Quality (ODEQ)

The Oklahoma Department of Environmental Quality has 512 full-time employees, and a yearly budget of $17 million. Some of ODEQ goals include administering effective regulatory approaches, issuing timely permits, timely management of complaints, and focusing compliance activities on improving environmental quality. The ODEQ is divided into sections for each media-specific program.

The ODEQ Air Quality Division (AQD) implements the state and federal Clean Air Acts. Monitoring of criteria pollutants is done through samples taken from ambient air monitors. Inspections are conducted annually, and a “cradle to grave” method for handling cases has been implemented. Air quality rules and strategies are continuously reviewed and developed. DEQ Regional Office at Tulsa (ROAT) performs AQD duties—permitting, inspection, and enforcement—in the eastern third of Oklahoma.
The ODEQ Water Quality Division (WQD) issues NPDES permits, storm water permits, indirect discharge permits, and construction permits. The Division takes advantage of newly available general permits as well. Inspections and enforcement actions are also carried out by WQD.

The ODEQ Land Protection Division (LPD) inspects and permits hazardous waste and solid waste TSD facilities, permits and inspects underground storage wells, manages radioactive materials, restores contaminated land, and conducts appropriate enforcement measures. Landfills are regulated by the LPD, as well as biomedical wastes.

(www.deq.state.ok.us)

**Texas Commission on Environmental Quality (TCEQ)**

Formerly the Texas Natural Resources Conservation Commission, the Texas Commission on Environmental Quality is Texas’ primary agency for ensuring environmental health. TCEQ employs 3000 staff members, and has an annual budget of $400,000,000. TCEQ issues permits for all media-specific programs, sets quality standards for air and water, and participates in EPA delegated programs. The duties of TCEQ are divided into distinct offices. The Office of Permitting, Remediation and Registration is responsible for implementing the federal and state laws and regulations governing all permitting issues; oversees the investigation and cleanup of hazardous pollutants; registers and manages the reporting requirements for certain facilities; and implements the petroleum storage tank reimbursement program.

The Office of Enforcement and Compliance oversees agency enforcement, emergency response, dam safety, monitoring activities, and the operation of 16 regional offices. These offices are responsible for compliance and complaint investigations,
issuing enforcement actions, ambient monitoring, approving pollution abatement plans, and providing environmental education and technical assistance to the community.

The Office of Environmental Policy, Analysis, and Assessment has four major functions. This office provides for strategic environmental analysis and assessment; the coordination of all agency policy development and rulemaking; the coordination of border affairs; and the technical analysis of data to support these functions.

(www.tnrcc.state.tx.us)
APPENDIX B

KEY PROVISIONS OF FEDERAL ENVIRONMENTAL LAWS

1. CLEAN AIR ACT (CAA), 42 U.S.C. §7401 et seq.

The purposes of the CAA are to:

1. “protect and enhance the quality of air resources, thereby promoting public health and welfare;
2. initiate and accelerate a national research and development program to achieve the prevention and control of air pollution;
3. provide assistance to State and local governments in the development and execution of their air pollution prevention and control programs; and
4. encourage and assist the development and operation of regional air pollution prevention programs” (42 U.S.C. §7401(b)).

CAA regulates air pollution sources through: emission limits contained in State Implementation Plans (SIPS); more stringent control technology and permitting requirements of new sources (NSPS); requirements to control other air pollution problems, such as hazardous air pollution (HAP); and a comprehensive operating permit program (Title V) (EPA Yellow Book). New Source Performance Standards (NSPS) apply to stationary sources constructed or modified after publication of the regulations. Stationary sources are “any entity which emits or may emit any air pollutant” (§7411(a)(3)). The Title V Permitting Program (§7661) is generally administered by State air pollution agencies authorized by the EPA, to all stationary sources of air pollution. The permit includes a compliance schedule, enforceable emission limits and standards, and requirements for submitting monitoring data.
National Ambient Air Quality Standards (NAAQS) are mandated in §7409. Primary NAAQS protect public health, and secondary NAAQS protect public welfare by designating an allowable amount of criteria or hazardous pollutants present in the air. Criteria pollutants consist of sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter. In the SIPs required by the CAA, States set requirements for the attainment of NAAQS within their geographic areas. These Air Quality Control Regions (AQCRs) are classified as either “attainment” or “non-attainment” areas. Non-attainment status is received if air quality within those areas does not meet the required levels set by the NAAQS.

SIPs also include enforceable emissions limitations and other control measures, monitoring procedures, and enforcement guidelines of new and existing stationary sources. If the control measures of the SIP meet the requirements of the CAA, the State is authorized (by the EPA) to adopt and implement measures to attain and maintain the primary and secondary standards for each AQCR. This includes the issuance of Title V permits.

Title V permits are federally issued in States without authorization, although the State’s primary environmental enforcement agency is still responsible for the inspection and monitoring of those facilities. All CAA programs authorized to the States must be as stringent, or more so, than federal requirements.

2. CLEAN WATER ACT (CWA), 33 U.S.C. §1251 et seq.

CWA established national programs for the prevention, reduction and elimination of pollution in United States waters, including standards for water quality and treatment of discharges. Its principal objectives are to:
1. “prohibit discharges of pollutants in U.S. navigable waters, except in compliance with a permit;
2. develop and implement area-wide waste treatment processes to assure adequate control of sources of pollutants;
3. achieve an interim goal of protecting water quality that provides for the protection of wildlife and aquatic life, and provides for recreation in and on the water; and
4. develop and implement programs for the control of non-point sources of pollution” (33 U.S.C. §1251(a)).

The term ‘navigable waters’ is defined as [all] “waters of the United States, including the territorial seas” (§1362(7)). This also includes wetlands.

CWA authorizes the EPA and the States to regulate, implement and enforce compliance with guidelines and standards to control the discharge of pollutants. The National Pollutant Discharge Elimination System (NPDES) Program establishes national effluent standards for point source discharges (§1342). The EPA delegates the authorization of this program to States demonstrating the capability to administer this program. Under this program, States issue NPDES permits for fixed terms not exceeding five years, require reports from permitted facilities, inspect and monitor these facilities, and abate permit violations through penalties and enforcement (§1342(b)).

States are required to establish Total Maximum Daily Loads (TMDLs) for their waterways. The TMDL for each pollutant is set at a level necessary to maintain water quality at applicable water quality standards (§1313(d)(C)). In addition, Best
Management Practices (BMPs) and measures are implemented to control and reduce pollutant loadings resulting from non-point source discharges (§1329(b)(2)).

CWA establishes pretreatment standards, requiring all industrial users to pretreat wastewater discharged to Publicly-Owned Treatment Works (POTWs) to prevent pollutants exceeding certain limits from passing through POTWs or from causing interference in the operation of the treatment works (§1317(b)). §1344 establishes a dredge or fill discharge permit program, (commonly referred to as §404 permits), administered by the Army Corps of Engineers. This program regulates the placement of dredge or fill material into waters of the United States, including wetlands.

3. RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 42 U.S.C. §6901 et seq.

RCRA provides “cradle-to-grave” control of solid and hazardous waste by regulating their generation, transportation, treatment, storage, and disposal (often referred to as a manifest system). A solid waste is “any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid or contained gaseous material resulting from industrial, commercial, mining and agricultural operations” (§6903(27)). A hazardous waste is “a solid waste, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or pose a substantial present or potential hazard to human health or the environment when improperly…managed” (§6903(5)).

The principal objectives of RCRA are to:
1. Protect human health and the environment from potential adverse effects of improper solid and hazardous waste management;

2. Conserve material and energy resources through waste recycling and recovery; and

3. Reduce or eliminate the generation of hazardous waste as expeditiously as possible (§6902(a,b)).

Subtitle C (§§3001-3023) establishes the national hazardous waste management program, which includes the identification and listing of hazardous wastes, standards applicable to generators and transporters and to owners and operators of Treatment, Storage, Disposal Facilities (TSDs) and provisions for permitting, inspections, and enforcement (EPA Yellow Book). Subtitle I (§6991) addresses leaking underground storage tanks (USTs) and requires EPA to establish standards for tanks installed both prior to and after passage of the new requirements. These standards cover UST design, operation, cleanup, administration, and closure. Subtitle D (§6941) sets national standards for the management of solid waste.

Under RCRA, records must be kept of all hazardous waste management, whether it is generated, treated, transported, stored or disposed. A manifest is a form documenting all aspects of the waste, including quantity, composition, origin, routing and destination. All entities in contact with the waste must document it as well. RCRA also establishes requirements for State solid waste programs, including criteria for sanitary landfills and the upgrading or closing of open dumps.
APPENDIX C

SUPPLEMENTAL ENVIRONMENTAL PROJECTS

A Supplemental Environmental Project (SEP) is an in-kind service or cash contribution to a project designed to advance environmental interests and which an entity agrees to perform in partial settlement of an enforcement action. The EPA has certain mandates for the use of SEPs (OECA, 1998). First, penalties may be lowered, but combined with the cost of the SEP, they must not be less than the initial administrative penalty. There must be a relationship between the SEP and the violation. How the surrounding community can benefit should be considered. A project must be performed; simple donations to a charity or environmental organization are not acceptable. An SEP is always voluntary on the part of the violator. It cannot be a prior or in-work project, and the facility must go beyond compliance. The project cannot merely bring a facility into compliance, because it is expected to come into compliance regardless of the project. Table 13 shows categories an SEP must suit.

Table 13
Nature of Acceptable Supplemental Environmental Projects

<table>
<thead>
<tr>
<th>An acceptable SEP must sponsor one of the eight following categories:</th>
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<tbody>
<tr>
<td>1. Public Health</td>
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<tr>
<td>2. Pollution Prevention</td>
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<td>3. Pollution Reduction</td>
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<td>4. Environmental Restoration and Protection</td>
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<td>5. Emergency Planning and Preparedness</td>
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<td>6. Assessments and Audits</td>
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<tr>
<td>7. Environmental Compliance Promotion (i.e. aiding another company in reaching compliance)</td>
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<tr>
<td>8. Other projects of Environmental Merit</td>
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</tbody>
</table>
Preferred projects directly benefit the environment in the community where the violation occurred. Acceptable projects reduce or prevent pollution, enhance environmental quality, or contribute to public awareness of environmental matters. Unacceptable projects are those required to bring the respondent into compliance or are otherwise required to be completed or previously completed. The agency issuing the SEP is required to monitor its performance.

I had initially intended to include SEPs in my analysis of state environmental enforcement. Unfortunately, information regarding the states’ use (or misuse) of SIPs in lieu of penalties is limited. Instead, the information I have collected is reported below.

Arkansas does not allow more than a 35% reduction in the recommended administrative penalty. At least a one-dollar expenditure for the SEP is required to justify a one-dollar reduction in penalties. Preferred projects are acceptable at this 1:1 ratio ($1 expended for every $1 reduction in penalties). Acceptable projects are allowable at a 3:1 ratio ($3 expended for every $1 penalty reduction). ADEQ stipulates that it may refuse any SEQ based on the facility’s history of noncompliance, and the facility must demonstrate the ability to perform the SEP. Any money not spent (from a specified amount) on the SEP is forfeited as a remaining penalty.

Louisiana uses the terms Beneficial Environmental Project and Negotiated Settlements, instead of SEP. The legislative audit performed in 2002 found many inadequacies with LDEQ’s use of BEPs. The audit revealed that LDEQ’s use of BEPs does not deter facilities from subsequent noncompliance. The projects were not effectively penalizing facilities, and monitoring of the projects was not consistently
conducted. LDEQ has no formal process to ensure projects are completed as outlined, or that the actual costs match those agreed upon in the negotiation.

The audit revealed that 10 BEPs cost less than the original penalty assessment. Ten projects provided some economic benefit to facilities, such as decreased disposal costs or upgrades and improvements. Eight BEPs were completed before the final settlement agreement was even approved, allowing facilities to use an already completed project as a penalty. Three specified a project directly benefiting the LDEQ, providing services the agency would have to pay for anyway during the normal course of operation. Also, a donation was made to a cancer study, rather than an environmental project, clearly against EPA stipulations.

New Mexico follows the guidelines mandated by the EPA, however, NMED does not allow an SEP unless the calculated civil penalty exceeds $25,000. Texas follows the federal guidelines as well. However, TCEQ allows a maximum 50% penalty reduction, which is a greater reduction than the other states allow.
APPENDIX D

TCEQ ONGOING DATABASE PROJECTS (SAO 03-360)

- **Central Registry** – establishes common identifiers for management of facility/site information across programs and environmental media. The objective is to build an information system in which the Commission’s core data is placed in one location, where it can be centrally administered and its quality can be assured.

- **Consolidated Compliance Enforcement Database System (CCED)** – consolidates more than 30 databases into one integrated system.

- **State Implementation Plan Data Management (SIPDM)** – receives and stores area and mobile source emissions inventory data.

- **State of Texas Air Reporting System (STARS)** – development of a large subset of TCEQ’s existing point source database.

- **Water Availability Model (WAM)** – develops Texas river basin models to determine water availability for issuing permits.
VITA

Rebecca Louise Marcus earned her Bachelor of Science degree in biology in 2001, from High Point University in High Point, North Carolina. After researching the genetics of *Polygonatum biflorum* (common name Solomon’s Seal) under Dr. Gerald Smith, she decided to pursue her education in environmental sciences. With a Louisiana Board of Regent’s Fellowship, she entered the Master of Science program in environmental planning and management at Louisiana State University’s Department of Environmental Studies. During this time, she interned with the United States Environmental Protection Agency Criminal Investigations Division in Baton Rouge, Louisiana. Rebecca is a native of Mechanicsville, Maryland, and currently resides in Baton Rouge.