Tank Tour

Your Guide to the Federal Underground Storage Tank Program

U.S. Environmental Protection Agency
Office of Underground Storage Tanks

March 1989

ACKNOWLEDGEMENTS

This document was prepared under the direction of Sandra Strauss and Steve Vineski of EPA's Office of Underground Storage Tanks (OUST) under contract No. 68-01-7385 with ICF Incorporated.

The ICF Project Director was Tom Ingersoll and the Project Manager was Tony Bansal. The principal author was Ken Rock. Portions of the report were written by Bill Finan, Ed Meyer, and Susan Hughes. Graphics were prepared by Vernon Dunning and Walter Taylor, and Trish Conroy assisted in the cover design. Camera-ready copy was prepared by Marina Miguele.

Additional technical review and comments were provided by Ron Brand, Helga Butler, Sammy Ng, Pam McClellan, and Jerry Parker of OUST.

Many of the publications referred to in this document can be ordered by calling
the U.S. EPA Region 10 Public Information Center
at 206/553-4973
or 800/424-4EPA within Region 10

CHAPTER 1

INTRODUCTION

If you are working in an underground storage tank program and would like to broaden your perspective, this manual is for you. It is an introduction to the world of underground storage tanks, known as USTs, and the Federal program that guides them. The manual explains why tanks leak and why they are a potential threat to human health and the environment. It addresses the following questions:

- Who owns and operates USTs?
- What is stored in the tanks and where are they commonly found?
- Why regulate USTs?
- Who is being affected by UST regulations?
- What do the regulations require and how are they being implemented?

The manual also examines the development of the Federal UST program and explains the roles State and local governments and the U.S. Environmental Protection Agency (EPA) play in solving the problems posed by leaking underground storage tanks. We suggest that you read one or two chapters at a time, then discuss the information with people who work on related issues. This will bring some "real life" perspective and experience to the information presented in this manual.

CHAPTER 2

OVERVIEW OF LEAKING UNDERGROUND STORAGE TANKS

WHAT IS THE PROBLEM?

During the 1970s, Federal and State environmental regulations focused on the problems of air and surface water pollution. In the 1980s, however, there has been a growing recognition that the nation's ground water is also being contaminated and needs to be protected as well. This is particularly important because more than 116 million people--half the population of the United States--rely on ground water as a source of drinking water.

Since the early 1900s, petroleum and chemicals have been stored in bare steel underground tank systems that are very vulnerable to corrosion. Until recently, little has been done to protect these tanks from corrosion, or to emphasize the use of methods to detect leaks as early as possible.

Leaking underground storage tanks (USTs) pose a major threat to ground water. Releases from USTs into water supplies used for drinking and other household purposes may pose risks to public health. Even small quantities of released petroleum are sufficient to contaminate drinking water. Two components of gasoline, benzene and ethyl dibromide, are suspected cancer causing agents.

The threat from leaking tanks is not limited to ground water. Leaking petroleum and chemicals can contaminate surface waters, cause fires and explosions, and generate toxic fumes that can seep into homes and businesses. This problem is described in greater detail in the brochure "Here Lies the Problem".

HOW SERIOUS IS THE PROBLEM?

EPA estimates that there are approximately two million USTs in the U.S. subject to the new Federal regulations. According to recent (1988) EPA estimates, 84 percent of USTs at gasoline service stations are made of bare (unprotected) steel and are highly susceptible to corrosion and leaks. Of the remaining "protected" tanks, 5 percent are steel tanks that are cathodically protected from corrosion, and the remaining 11 percent are constructed of fiberglass reinforced plastic (see Exhibit 2).

According to recent EPA estimates, as many as fifteen to twenty percent of petroleum USTs may be leaking. If this percentage holds true for all regulated underground storage tanks, hundreds of thousands of underground storage tank systems nationwide may be leaking. One study, based on information compiled by States, identifies more than twelve-thousand documented reports of releases from underground storage tanks.

WHY DO RELEASES OCCUR?

Piping failure, spills and overfills, and tank corrosion are the three main causes of releases from underground storage tank systems.

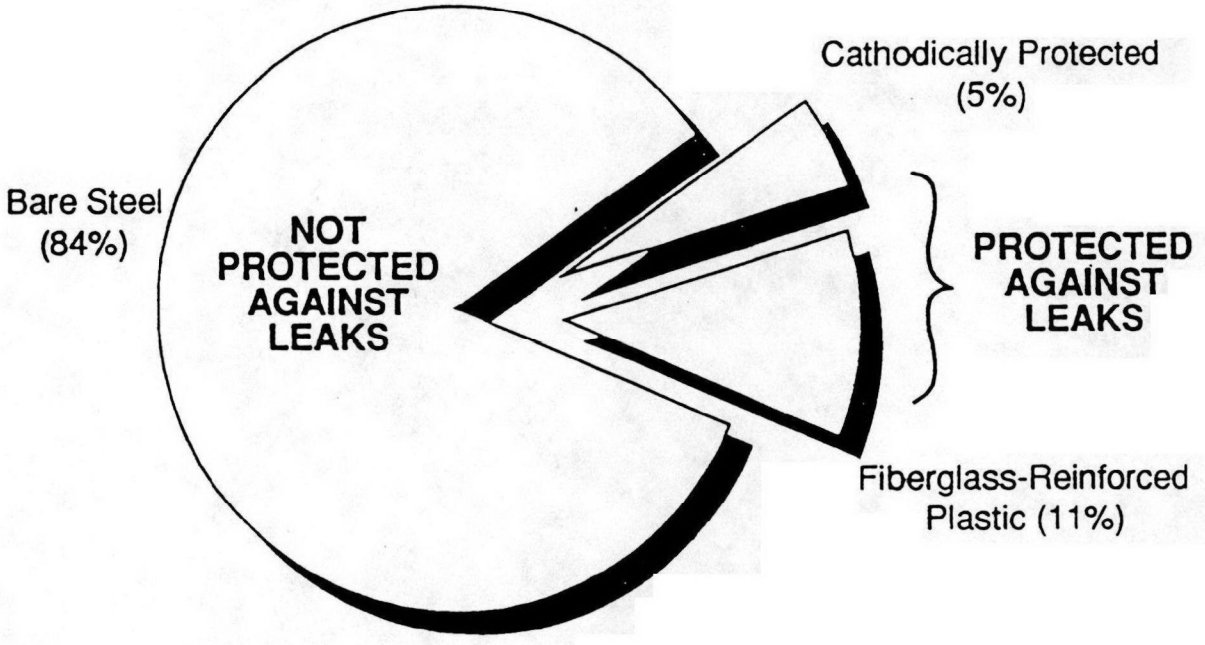
Piping Failure

EPA studies estimate that eighty percent of all releases from underground storage tanks are the result of failures in the piping system that connects the tanks to the gasoline dispensers or in the fittings on the top of the tank. Many of these failures occur because of improper installation. As Exhibit 3 illustrates, service stations with several dispensers and several blends of gasoline have extensive piping systems.

There are two types of piping systems: pressure and suction. Pressure systems rely on a pressure pump in the tank to push petroleum through the piping, whereas suction systems use a suction pump at the dispenser to pull the petroleum through the piping.

Exhibit 2

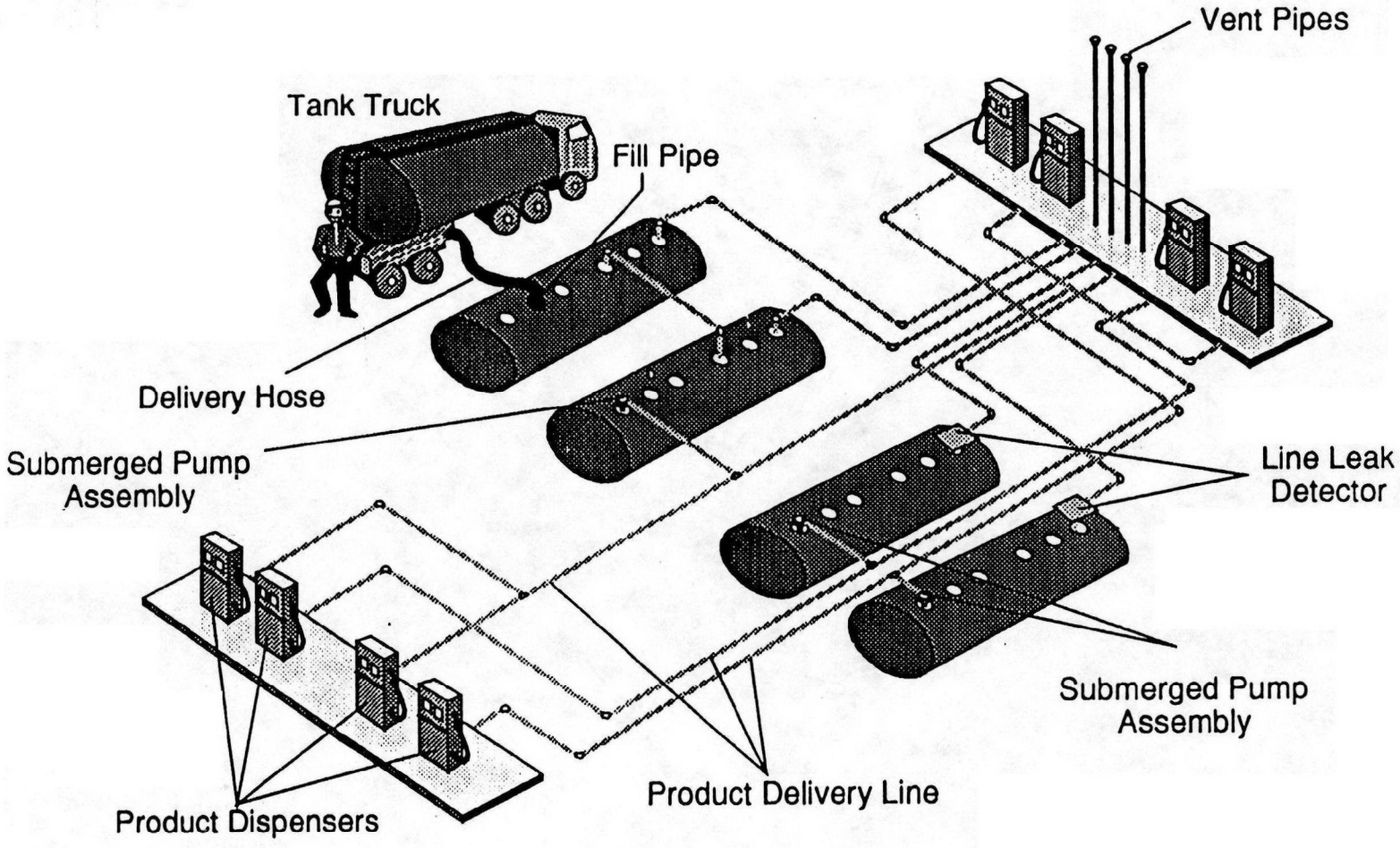
Distribution of Tank Types at Gasoline Service Stations



Source: Regulatory Impact Analysis. August 24, 1988.

Exhibit 3

Piping Configuration at a Typical Four-Tank Station



Pressure systems pose the greater threat of uncontrolled releases. When a leak occurs in a pressure system, the pump continues to push petroleum through the hole in the pipe and into the ground (see Exhibit 4). With a suction system, however, the vacuum necessary for suction is destroyed once a leak occurs, the system starts pulling air through the hole, and petroleum in the piping flows back into the tank.

Spills and Overfills

Spills and overfills are the most common cause of underground storage tank releases into the environment; however, most incidents probably go unreported because of the small volume of petroleum lost, less than twenty gallons in most instances.

Spills often occur when a delivery hose is disconnected from the tank fill tube, when a delivery hose has not been drained properly, or when the disconnect stop valve on the delivery truck's fill tube has not been completely closed.

Overfills occur when more petroleum is pumped into the tank than the tank can hold and the petroleum overflows into the surrounding soil through the vent pipe or loose fittings on the top of the tank. Overfills can result from an incorrect estimate of how much petroleum is needed to fill a tank or from simple carelessness.

Tank Corrosion

The rapid population expansion that began during the 1950s led to the growth of suburban communities across the United States. This growth, in turn, led to the proliferation of retail gasoline stations to serve the growing number of suburban automobiles. Hundreds of thousands of USTs were installed from the 1950s to the present, but until recently, little was done to protect the tanks from corrosion, a natural decay process that occurs in steel tanks unless protective measures are taken. Little attention was paid to the potential damage that could result from leaks. As a result, many tanks currently in the ground are corroded and leaking.

WHAT HAPPENS WHEN A RELEASE OCCURS?

Once a leak occurs, petroleum can -- under certain circumstances -- seep through the surrounding soil into ground water (see Exhibit 5). Because petroleum does not easily mix with water, most of the leaking petroleum forms a plume that floats on top of the water table. Some of the petroleum, however, dissolves in the ground water and may be discharged into wells or surface water.

WHO OWNS AND OPERATES UNDERGROUND STORAGE TANKS?

Underground storage tanks are owned and operated by businesses to store retail motor fuels, non-retail motor fuels, used oil, and chemicals (see Exhibit 6). The retail motor fuel sector accounts for the largest group, comprising thirty-nine percent of the regulated USTs. From 600,000 to 700,000 underground storage tanks are located at more than 200,000 retail gasoline stations across the nation. About one-quarter of these tanks are owned by major oil companies; the rest are part of smaller operations. It is unusual for facilities in the latter group to be owned and operated by a single company or individual. For example, one company or person may lease a tract of land from another on a long-term basis for use as a retail gasoline facility. A third party, a wholesaler, may own the tanks at the facility, and a fourth party may lease the concession and manage the day-to-day operations.

The second largest user of underground storage tanks, thirty-eight percent, is the non-retail motor fuel sector, which includes petroleum wholesalers, agriculture, manufacturing, government, and transportation. Non-retail users of USTs include automobile and truck rental companies; truck and taxi fleets; the Federal Government (military bases, U.S. Postal Service facilities, and a variety of Federal buildings); State, county, and local governments (police, fire, highway, and transportation departments); public and municipal authorities (airports and shipyards); and hospitals.

Exhibit 4

Typical UST Configuration with Pressure Piping Delivery System

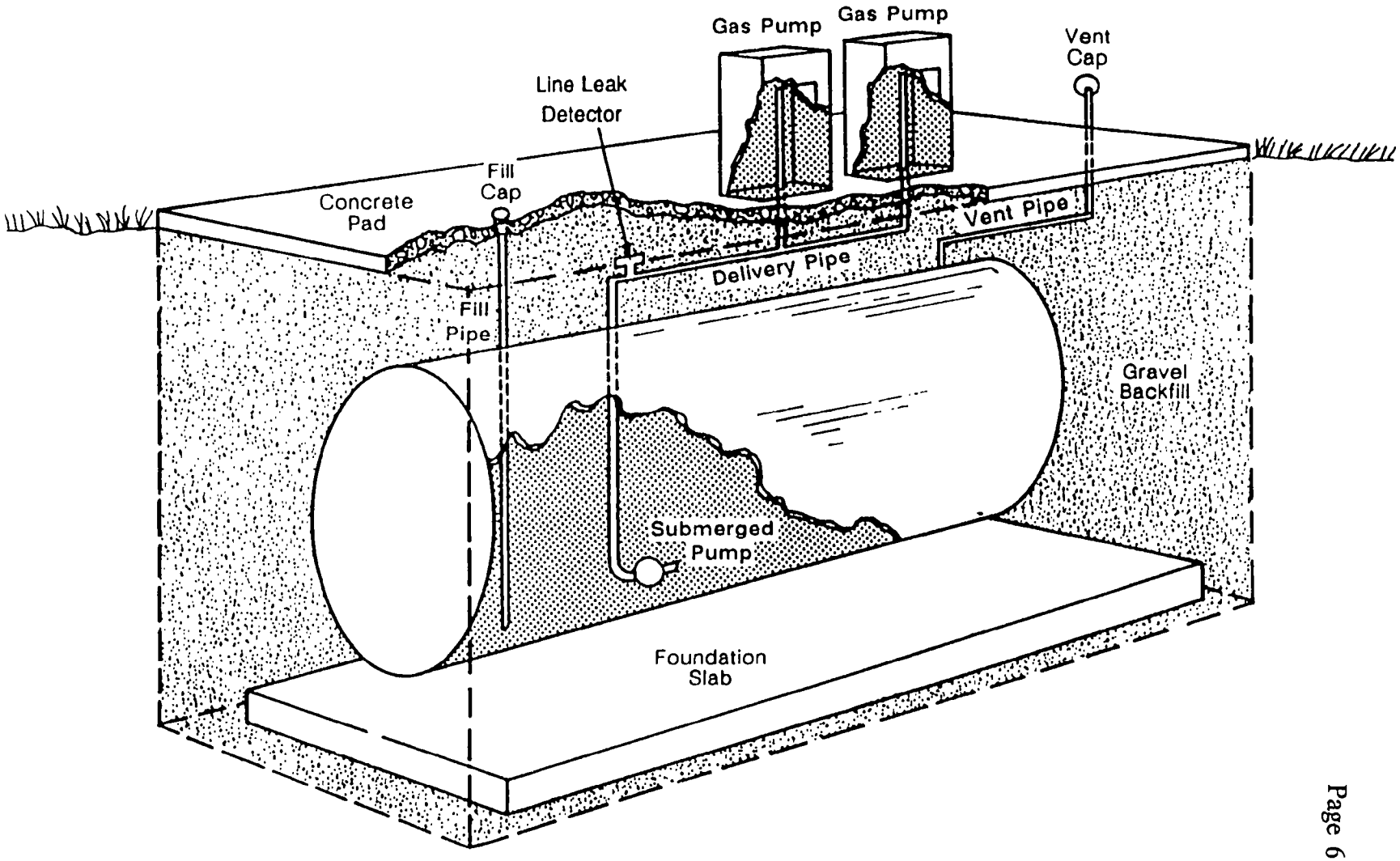
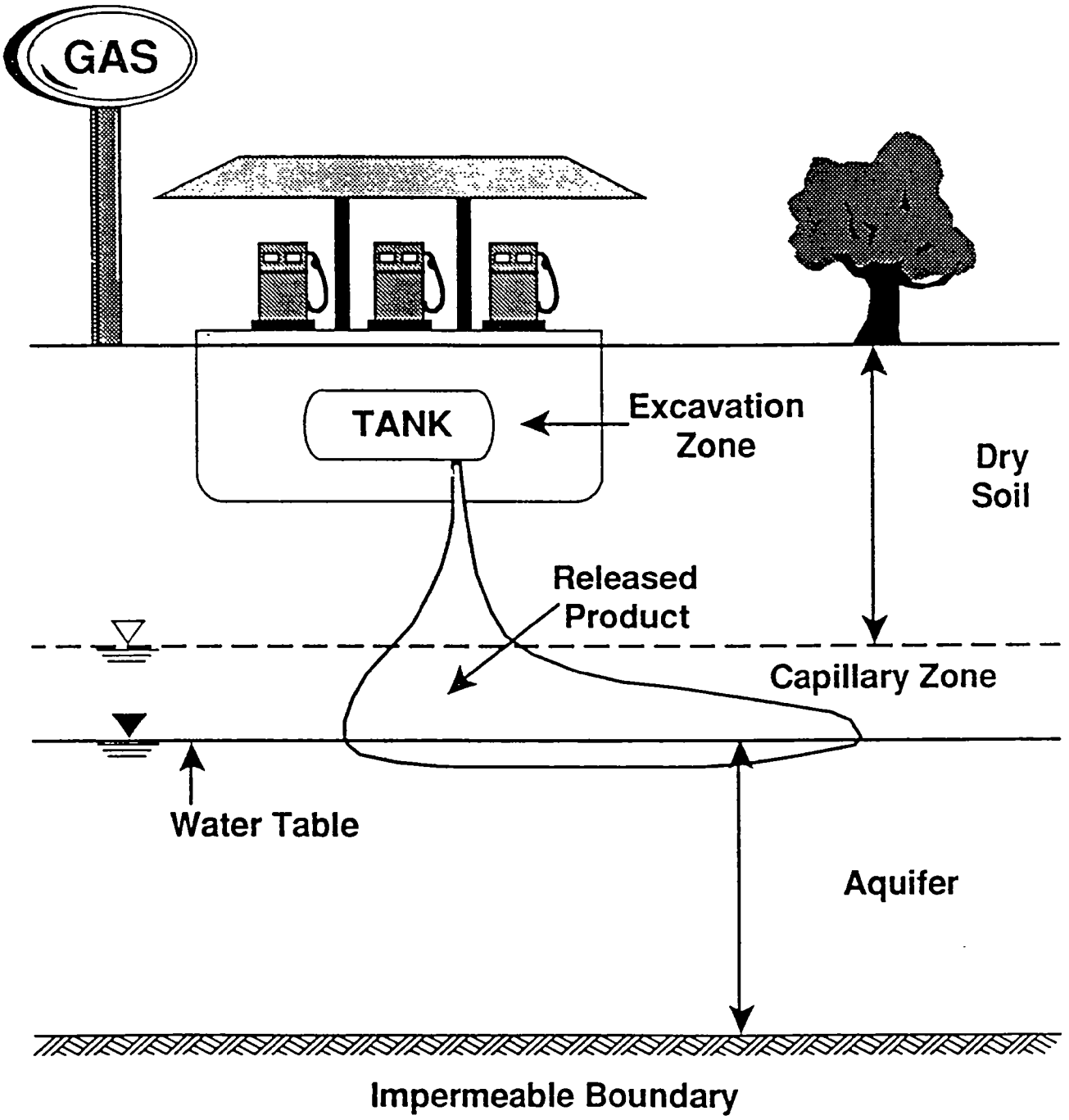


Exhibit 5

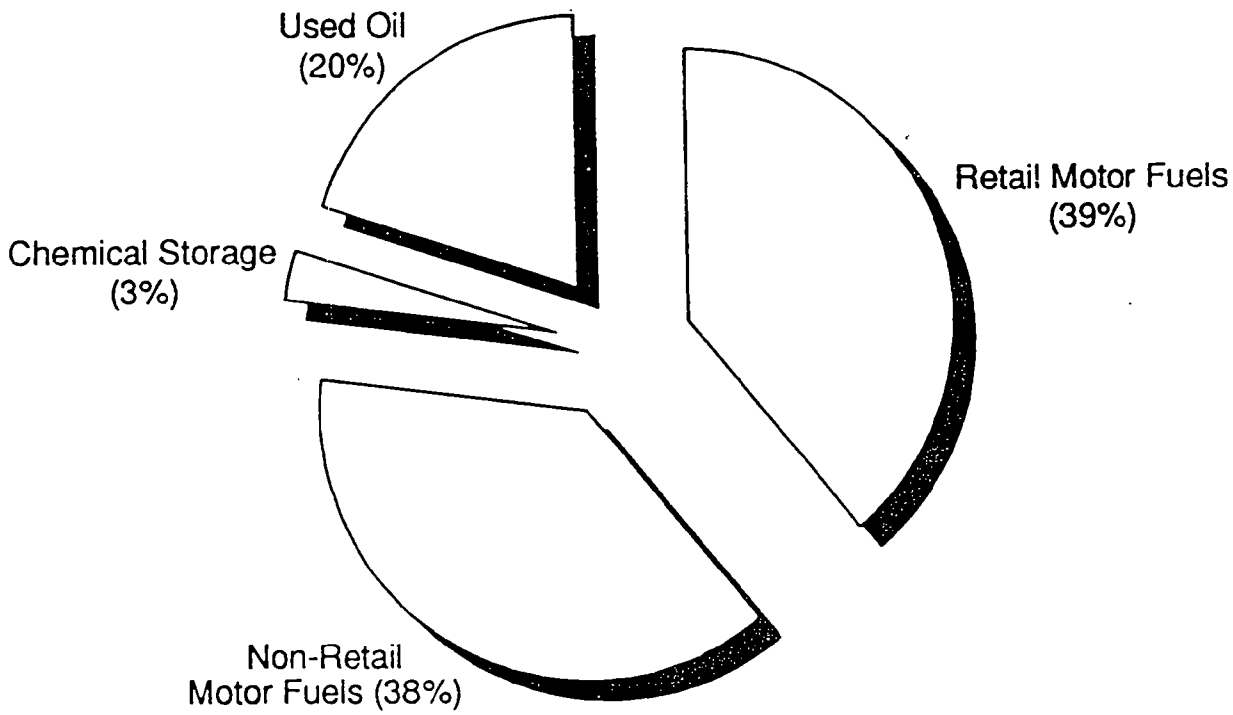
Schematic of Subsurface Environment



Source: ICF Incorporated.

Exhibit 6

Uses of Regulated USTs



Source: Regulatory Impact Analysis of Technical Standards Rule for USTs.

f91020-1

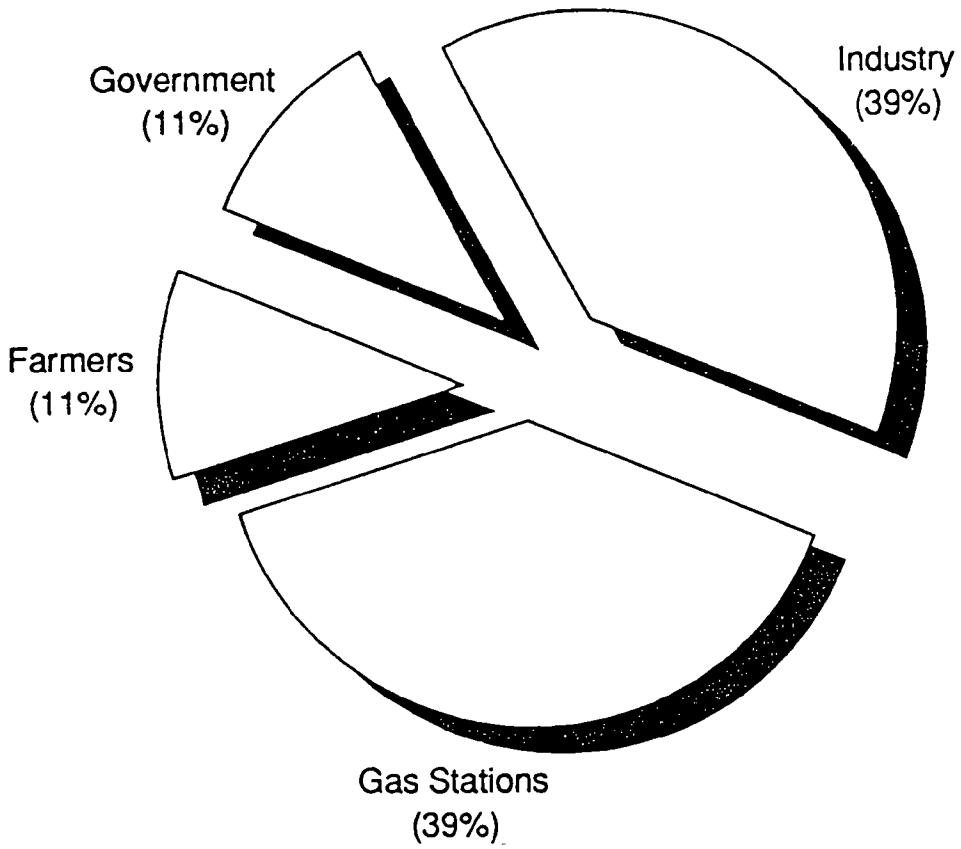
Businesses in the non-retail sector own an average of two underground storage tanks per facility, in comparison with retail motor fuel companies, which own an average of three or four tanks per facility. Twenty percent of regulated USTs are used to store used oil, and three percent contain chemicals.

Exhibit 7 illustrates ownership of USTs used to store petroleum.

More than three-fourths of the petroleum USTs are owned by gas stations and industry, paralleling the retail and non-retail uses shown in Exhibit 6. Government and farmers each own about half of the remaining petroleum USTs.

Exhibit 7

Ownership of USTs Used to Store Petroleum



Source: U.S. Conference of Mayors Report on Underground Storage Tanks (Draft), August, 1988.

f91020-3

CHAPTER 3

THE HISTORY OF UNDERGROUND STORAGE TANK REGULATION

THE HOLE IN FEDERAL ENVIRONMENTAL REGULATIONS

Except in a few instances, Federal regulation prior to 1984 did not address USTs. The Resource Conservation and Recovery Act of 1976 (RCRA) only regulated tanks containing hazardous wastes, not tanks storing petroleum or hazardous products. The Clean Water Act of 1972 required owners of very large underground tanks (those with a capacity greater than 42,000 gallons) to take certain measures to prevent corrosion and to test tanks periodically. However, these requirements applied only to those tanks that were potentially direct sources of pollution into navigable waters. Because underground tanks generally damage only ground water and usually affect surface water only indirectly, the Clean Water Act could not be used as a general basis for regulating most underground storage tanks.

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), commonly known as Superfund, authorizes EPA to respond whenever a hazardous substance is released into the environment. However, Superfund cannot be used to respond to leaks from petroleum tanks because petroleum is specifically excluded from the list of hazardous substances defined under the Act.

CLOSING THE GAP: FEDERAL REGULATION OF USTs

In 1984, Congress was preparing to pass environmental legislation pertaining to management of hazardous substances. The UST problem, which was already a subject of political debate, became more visible because television news shows, such as "60 Minutes" and "Good Morning America", featured stories that highlighted the dangers of leaking USTs.

In February 1984, Senator David Durenberger of Minnesota (a State in which ground water is an important resource) and Congressman Don Ritter of Pennsylvania (in whose district an UST leak had contaminated wells for over three years) each introduced a bill to address the problem of leaking USTs. Both bills sought to establish a comprehensive Federal regulatory program requiring registration of all tanks, technical standards for new tanks, reporting and cleanup of releases, and some mechanism for owners and operators to demonstrate financial responsibility for damages in the event of a leak.

In October 1984, a final version of the Hazardous and Solid Waste Amendments to RCRA (HSWA) was passed by both houses of Congress. In November 1984, President Reagan signed the amendments into law. Title VI of the Amendments added Subtitle I (sections 9001 to 9010) which specifically provided for regulation of underground storage tanks.

At the request of Congress, EPA is also studying the threat posed by underground tanks used to store products other than those covered by current UST regulations, such as heating-oil tank systems, to determine if additional regulations are needed. This study is now underway and a report is expected to be completed in 1989.

Key Provisions of HSWA Subtitle I

Subtitle I includes requirements for tank notification, interim prohibition, new tank standards, monitoring and reporting standards for existing tanks, corrective action, financial responsibility, compliance monitoring and enforcement, and approval of State programs. (Refer to HSWA Subtitle I for specific requirements in each of these areas outlined in the legislation.) The law also requires EPA to develop a comprehensive program for the regulation of USTs "as may be necessary to protect human health and the environment"

(section 9003(a)). More specifically, the law requires EPA to develop regulations for USTs in the areas of:

- Technical standards for tanks (e.g., construction materials, required methods of detecting leaks);
- Financial responsibility; and
- State program approval (i.e., requirements for approving States to run the program).

Developing effective regulations to implement this legislative mandate was a top priority for EPA's Office of Underground Storage Tanks (OUST). On April 17, 1987, the Agency promulgated proposed regulations, along with an invitation for public comments.

Over the next ninety days, EPA received comments and new information on the proposed regulations. A Supplemental Notice to Proposed Rulemaking was published in the Federal Register on December 23, 1987 and OUST received comments on the changes. After considering all completed research and carefully reviewing all comments, EPA published the final UST technical regulations on September 23, 1988. The technical standards regulations are summarized in a brochure called "Musts for USTs". Shortly afterward, on October 26, 1988, EPA published its financial responsibility regulations, indicating minimum levels of insurance UST owners and operators need to ensure they can take "corrective action" in response to any leaks that occur from their tanks and compensate anyone who is harmed by a leak. Corrective action includes assessing the leak and the extent of damage or danger to human health and the environment, determining what action is needed to repair any damage and remove contaminants, and taking the necessary action.

CORRECTIVE ACTION FOR LEAKS: THE LEAKING UST TRUST FUND

Although the 1984 Hazardous and Solid Waste Amendments amended the Resource Conservation and Recovery Act to regulate USTs, there were no provisions for taking corrective action on releases from leaking underground storage tanks in cases where tank owners or operators (1) were either not willing or not able to conduct the corrective action, or (2) could not be found (e.g., abandoned tanks). Many owners and operators simply may not be able to conduct corrective actions, and may not have environmental impairment liability insurance for USTs. If a leaking tank was abandoned or if a tank leaked and the owner or operator could not or would not take the necessary steps to correct the situation, the only recourse left was for the injured party to sue the responsible party. These cases often resulted in lengthy court delays which achieved no reduction in the threat to human health and ground water.

In 1986, Congress responded to public concerns about the need to take action on releases from leaking USTs by passing into law the Superfund Amendments and Reauthorization Act (SARA). Section 205 of SARA amended Subtitle I of the Resource Conservation and Recovery Act (RCRA) to provide Federal funds for corrective actions on petroleum leaks and spills from USTs. This amendment to RCRA established a $500 million "Leaking Underground Storage Tank Trust Fund," paid for over five years by a tax on each gallon of gasoline sold. According to these amendments, priority for corrective actions is to be given to those USTs that present the greatest threat to human health and the environment.

KEY UST REQUIREMENTS UNDER THE SARA AMENDMENTS TO RCRA

Congress authorized EPA to use the Trust Fund for corrective actions on petroleum leaks and spills and to make these funds available to the States (which include U.S. territories) as soon as possible. States are expected to play a key role in Trust Fund corrective actions because State officials are generally closer to the scene and know more about tanks in their States and about local site conditions than Federal officials. Consequently, using the Trust Fund quickly and effectively is one of OUST's top priorities. This was to be accomplished through cooperative agreements with the States. Cooperative agreements are signed contracts between States and EPA that allow them to use the LUST Trust Fund to pay for corrective actions on releases from underground storage tank systems.

EPA is encouraging States to enter into cooperative agreements that specify how the States will use the funds. Until cooperative agreements are in place, States cannot use the Trust Fund to cleanup leaking USTs.

Financial Responsibility

The Trust Fund for leaking USTs was never intended to fund cleanups for all, or even most, releases. In most cases, the State will order the tank owner or operator (the responsible party) to undertake the cleanup. Under the SARA Amendments to RCRA, the State can compel the tank owners and operators to undertake, or pay for, any of the following actions:

- Tank tests for suspected leaks;
- Site excavation to investigate the extent of contamination;
- Assessments of how many individuals may have been exposed to petroleum contaminants and the severity of the exposure;
- Removal of contaminants from soil and water;
- Provision of safe drinking water to residents whose supplies have been contaminated by a tank leak; and
- If necessary, temporary or permanent relocation of residents affected by a release.

Because of concerns that tank owners and operators would not have the financial resources to cover the cost of these activities, Congress required that tank owners and operators be able to demonstrate financial responsibility. This means that tank owners and operators must be able to pay for cleanups and, if necessary, to compensate people or businesses for damages resulting from leaks. Cleanup costs and compensation can be very expensive; therefore, Congress set the minimum coverage for financial responsibility at $1 million per occurrence for tanks at facilities that produce, refine, or market petroleum ("per occurrence" means the amount of money that must be available to pay the costs of one leak). If necessary, EPA may temporarily suspend the enforcement of financial responsibility requirements if insurance or other types of financial assurance are not available to certain groups of tank owners. The brochure on the financial responsibility requirements, "Dollars and Sense," is available from EPA.

Priority Trust Fund Uses

Congress intended that EPA or the State management agency use the Trust Fund only at sites where:

- The costs of the cleanup exceed the minimum insurance coverage that an owner or operator is required to maintain, and such expenditures are necessary to ensure an effective corrective action;
- A solvent owner or operator cannot be found; or.
- The owner or operator fails to comply with a cleanup order.

Tank owners and operators will be liable to EPA or the State for the costs incurred in cleaning up leaks or spills from their tanks. EPA or the State can take action against the owner or operator to recover these costs, a process referred to as "cost recovery."

CHAPTER 4

PARTIES AFFECTED BY UST REGULATIONS AND CLEANUPS

The UST legislation and regulatory program to cleanup currently leaking USTs and prevent new leaks directly affects several groups, including small businesses, major oil companies, and the insurance industry.

SMALL BUSINESSES

Every effort has been made in the regulations to provide tank owners and operators with choices about how to satisfy the requirements. Nonetheless, the cost of ensuring that their tank systems do not leak will be a burden to some owners and operators.

Small businesses are deeply concerned about the costs of complying with the UST regulations as well as their ability to understand what exactly they are required to do. To assist owners and operators of USTs, EPA is preparing a variety of brochures and other materials that address some of the concerns expressed by small businesses. "Leak Lookout," and "Oh No!," are examples of brochures, designed primarily for small businesses which describe specific actions that need to be taken by UST owners and operators with regard to leak detection and in responding to a leak or spill.

Many small businesses feel they may have difficulty raising the capital needed to comply with new regulations. For example, some leak detection systems are expensive, required tank testing could close a business for one or two days, and new tank standards could require upgrading or replacing tanks--all at a significant cost. Yet the financial impact and potential liability associated with a corrective action could be far more burdensome than complying with the regulations for USTs.

MAJOR OIL COMPANIES

Major oil companies have already begun to voluntarily upgrade their underground tank systems. Motivated by the need to avoid product loss and cleanup costs and by the fear of liability suits, many oil companies have begun programs to replace old bare steel tanks with new corrosion-protected tanks and to install monitoring devices to determine if a tank is leaking.

INSURANCE INDUSTRY

Insurers have been reluctant to provide policies for USTs for several reasons. One reason is the unpredictability of the risks associated with unprotected steel tanks that have not been subject to regular leak detection. Another reason is court decisions about liability that make it difficult to relate the risk associated with a policyholder's operation to the potential damages a policyholder will face in court. In addition, it is unclear to insurers how the new UST technical requirements, especially for corrective action, may change the number and cost of claims. This uncertainty also affects the amount of reinsurance that is available for insurance policies written for USTs and therefore limits the number of policies that insurers are able to issue. As a result, pollution liability insurance continues to be offered only by a limited number of specialized providers.

As old, unprotected tanks are removed or are fitted with leak detection systems, many leaks will be detected and corrected. These actions, coupled with increased monitoring, should significantly reduce both the occurrence of leaks and their duration prior to detection. Over the long term, implementation of the UST technical standards should make UST risks more predictable and, therefore, more insurers should be more willing to provide coverage.

CHAPTER 5

EPA'S UNDERGROUND STORAGE TANK PROGRAM

THE OFFICE OF UNDERGROUND STORAGE TANKS

The Office of Underground Storage Tanks (OUST) was created in the summer of 1985 as a part of EPA's Office of Solid Waste and Emergency Response (OSWER). Also within OSWER is the Office of Emergency and Remedial Response, the Office of Solid Waste, the Office of Waste Programs Enforcement, and a separate Emergency Preparedness staff. OUST was created because EPA officials believed that in order to carry out the Congressional mandate to develop and implement a new regulatory program for underground storage tanks, a new organizational unit within the Agency would be required.

OUST is organized into two divisions: the Policy and Standards Division, and the Implementation Division. The Policy and Standards Division has three primary functions: (1) developing regulations and guidance materials for EPA Regions and States; (2) initiating and conducting studies to help resolve technical and policy issues; and (3) establishing standards and procedures to ensure that UST programs are implemented according to established objectives. The Division is composed of two Branches: the Standards Branch and the Regulatory Analysis Branch. The Standards Branch is responsible for proposing and promulgating technical regulations for tank systems and cleanups of releases, conducting or coordinating EPA's UST technical studies and research, and developing policy guidance in these areas for EPA Regions and States. The Regulatory Analysis Branch is responsible for conducting regulatory impact analyses, developing regulations for financial responsibility, formulating policy for Trust Fund utilization, and developing guidance in these areas for EPA Regions and States.

The Implementation Division is also composed of two Branches: the Operations Branch and the Planning and Communications Branch. The Operations Branch is responsible for maintaining regular contact with EPA Regions to monitor the status of UST program activities throughout the country. The Branch also conducts Regional support visits and reviews, coordinates activities with EPA's Emergency Response Division, prepares financial reports, and provides a variety of additional grant management and strategic planning services. The Planning and Communications Branch produces outreach materials (videos, brochures, and handbooks aimed at improving tank management practices), plans and implements communication activities, develops training and technical support programs, develops program implementation plans, and designs enforcement strategies and tools.

In addition to Headquarters, EPA has ten Regional offices in major cities throughout the country. Each of these Regional Offices have UST staffs of four to seven people, including a Regional UST Program Manager (see Appendix A).

THE FRANCHISE APPROACH TO IMPLEMENTING THE UST PROGRAM

EPA managers recognized early in the program planning process that the UST program must be managed differently than EPA's other regulatory programs. Traditionally, EPA "delegated" program responsibilities to States that had program authorities and staffing comparable to the Federal program. In this approach, EPA offered grants to States as an incentive for them to run the Federal program. Once delegated, EPA would "oversee" the State's implementation of the program and intervene when it did not satisfy EPA's standards. In the absence of a comparable delegated State program, EPA assumed full responsibility for the implementation of the national program.

EPA managers realized that this traditional EPA approach would not work for the UST program because:

- There are too many tanks to regulate with too few Federal resources; EPA would simply never have the capacity to address directly tanks at 750,000 sites;
- In many programs grant levels have not kept pace with the States' costs and no longer provide an incentive;
- EPA's traditional claim of program primacy is being matched by strong State and local environmental agencies; and
- The technologies and techniques of tank management are evolving.

EPA managers wanted to keep the program requirements flexible to encourage innovation and voluntary compliance. In this way tank owners and operators have the latitude to experiment with new, low cost alternatives that meet the regulatory requirements. These needs led OUST managers to look for new approaches to implementing the Federal UST program. One model that has captured the attention of OUST managers is the franchise approach.

APPLYING THE FRANCHISE APPROACH

The franchise approach, in the world of commerce, is simply a model for organizing and administering a service organization. A local business meeting certain criteria (capital, management skills, and experience) is authorized to operate a specific activity under a national or regional brand name. The contract between the local business, or franchisee, and the franchisor sets out the rules that govern this business relationship. As incentives to franchisees to join the franchise and pay the franchise fees, the franchisor provides a tested franchise system, training programs, national advertising, and its reputation to franchisees. These products and services reduce both the cost and the risk to the franchisee of entering the business.

To ensure that each franchisee adheres to national standards of quality, the franchisor devotes substantial resources to training, communication, and inspection. A franchisor works closely with each individual owner to ensure there is a focus on quality and to continuously improve their operations.

The franchise system also encourages a balance between maintaining uniformity and encouraging innovation. Uniform standards and services of the "chain" are supported and supplied by the franchisor. Services and products creatively tailored to a locality can be developed by an innovative franchisee. In many cases, products that become national standards are developed by entrepreneurial franchisees.

MAKING THE APPROACH WORK

OUST has adopted the franchise model as its implementation approach in managing the national UST program. While the main goal of businesses is to make a profit, EPA's goal is to protect human health and the environment. This difference is reflected in how the model is used.

State and Local Governments

The State and/or local regulatory agency is the "franchisee" in the UST franchise, operates independently, under a signed agreement with EPA, to operate the UST program. For the national program to work, these State and local franchisees must convince their customers to prevent and undertake corrective actions in response to releases from underground storage tanks. The methods used by the franchisees to stimulate the customer to comply with the regulations will vary. Some customers may need a hard sell (e.g., the threat of enforcement), whereas others may simply need to know what the product and service is and how it will benefit them.

For the national franchise system to continue to improve, franchisees need to develop and test new tank management practices and technologies, and share their experiences with others.

The Regions

The role of the Regional Offices is analogous to that of the field representatives in the franchise model. The Regions serve as liaisons between EPA Headquarters and the State and local franchisees to relay ideas, needs, and information

as efficiently as possible. The Regions' primary role is to help State and local governments build and improve their UST programs. They do this by:

- Promoting the Federal program with State and local officials;
- Understanding the work performed by franchisees;
- Identifying the support services franchisees need to improve their programs;
- Providing assistance, training, funding, and expertise to franchisees; and
- Identifying emerging trends and needs that require the attention of the national programs (e.g., research, improved systems, new guidelines to ensure quality).

EPA Headquarters

Under the franchise approach, the role of EPA Headquarters is to provide general operating guidelines to ensure that all of the State and local agencies are achieving the same basic objectives in managing underground storage tanks. OUST accomplishes its objective by providing Regional staff with the resources needed to understand and improve State and local programs. Activities include:

- Working with the Regions to learn about franchisee UST programs;
- Obtaining grant and travel funding needed by the Regions;
- Setting realistic national policies and standards;
- Funding and managing research directed specifically to solving problems in field performance;
- Obtaining contractor and other technical expertise required by the franchisees;
- Providing training, handbooks, videos, and other tools that enable franchisees to assist tank owners and operators in managing their tanks; and
- Performing a clearinghouse function, including transferring technology and expertise, holding workshops to deal with critical operations issues, and encouraging frequent and continual dialogue between State and Regional UST officials.

In an effort to assist the Regional offices in helping States build their UST program capabilities, OUST is promoting a management system to identify waste and inefficiency in program procedures (e.g., obtaining program approval from EPA, issuing permits, conducting corrective actions), eliminate it, and keep it out. Eliminating this waste will help States and local agencies run their programs in a way that is tailored to meet the specific needs and demands of their own regulated communities.

CHAPTER 6

PROGRESS MADE TOWARD IMPLEMENTATION

STATUS OF UST PROGRAMS IN 1984

A 1984 survey of underground tank regulations at the State level provided an indication of the amount of State involvement in underground storage tank programs. The survey found only one State with a comprehensive program to clean up and prevent leaks from tanks containing either petroleum or chemical products. Nine States had regulations that covered petroleum tanks, but not chemical tanks. Many States regulated tanks through nationally established fire codes, such as those published by the National Fire Protection Association (NFPA 30) and the Uniform Fire Code (UFC 79), although these codes are designed to prevent fires rather than to prevent releases.

PROGRESS SINCE 1984

Since the passage of the Hazardous and Solid Waste Amendments (HSWA) to RCRA in 1984, many States and localities have increased their efforts to address the ground-water contamination threat and cleanup problems posed by leaking USTs. At least thirty-five States have developed UST programs that, at a minimum, regulate the basic elements of proper UST system management. Other States have enacted legislation and are developing regulatory programs. Exhibit 14 shows the increase in State UST regulatory activity from 1984 to 1988.

The high level of UST activity at the State level has taken many routes. Before the Federal program requirements were issued, some State programs had established stringent release detection requirements for existing USTs (California and Florida), while others emphasize state-of-the-art prevention technologies for new USTs (New York, California, and New Hampshire). Some are phasing in the requirement for upgrading or replacement of existing substandard systems (Florida, Connecticut, and Delaware). Others have attempted to tailor their standard-setting based on proximity to sensitive ground-water locations (Maine and South Carolina).

Three State programs--New York, Florida, and California--have begun to develop strong working relationships with local UST programs, a policy they feel is critical to the success of their State programs. In New York, the State has delegated UST program authority to several of the eastern urban county governments, allowing the State agency to focus its efforts on implementing the UST program in the less urban counties where local UST programs are less developed. In Florida, county governments regulate approximately half of the State's tank population. California has delegated primary responsibility for administering and enforcing the State UST program to more than one-hundred local county and city agencies.

THE STATE PROGRAM APPROVAL PROCESS

As an important step toward achieving the long-range goal of developing a network of effective State and local programs, EPA is encouraging States to apply for formal approval of their UST programs to operate in lieu of the Federal program. EPA plans to approve acceptable State UST programs as quickly as possible, and follow up with activities that provide continual assistance to States and localities for improving their capabilities and performance. A list of State UST Program Offices is provided in Appendix B.

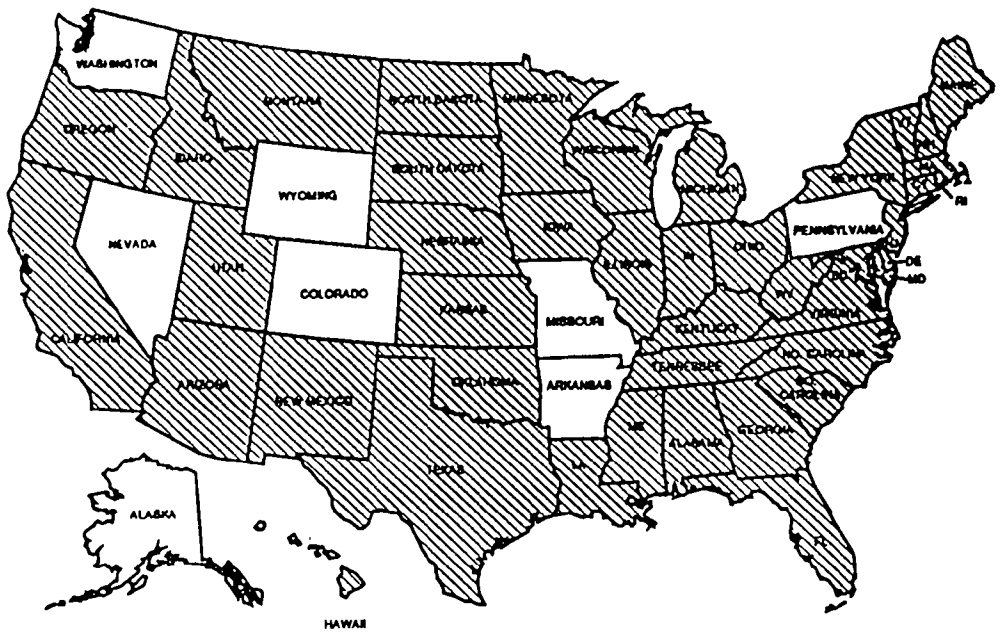
EPA approval of a State program means that the requirements in the State's laws and regulations will be in effect rather than the Federal requirements. Program approval ensures that a single set of requirements (the State's) will be enforced in that State, thus eliminating the duplication and confusion that would result from having separate State and Federal requirements. Once a State program is

Exhibit 14

States with Underground Storage Tank Statutes or Regulations

1984

1988



f91020-7

approved, the State program will operate under a Memorandum of Agreement that clearly delineates EPA's limited role in an approved State and assures the State of its lead role in administering and enforcing the UST program.

Approval of a State program also means that the basic environmental protection afforded by the Federal program is contained in the State program as well. The primary focus of EPA's approval review is to ensure that the State's program will achieve the objectives of the Federal regulations pertaining to the prevention, detection, and cleanup of UST releases and provide for adequate enforcement of compliance.

EPA has encouraged the development of comprehensive State UST programs and believes that States must continue to have the flexibility to develop and carry out their own initiatives. While there is wide diversity in State UST programs, the Federal regulations require that several common elements be part of each State program. These elements must be no less stringent than corresponding Federal requirements, based on a comparison of the State's technical requirements to the Federal objectives for each of these program elements. States must also provide for adequate enforcement of the requirements. EPA has designed its approval criteria to result in as little unnecessary disruption to ongoing State initiatives as is possible.

Federal objectives, contained in the Federal-State Program Approval Standards (published in December 1988), have been identified for the following program elements:

- New UST system design, construction, installation, and notification;
- Upgrading of existing UST systems;
- General operating requirements;
- Release detection;
- Release reporting, investigation, and confirmation;
- Corrective action;
- Out-of-service or closed UST systems; and
- Financial responsibility.

To meet the "no less stringent" requirements using this approach, the State must have requirements that meet the Federal objectives in each of these areas. EPA's criteria for adequate enforcement of compliance require that a State have in place adequate legal authorities for inspection and compliance monitoring, enforcement, and public participation, plus appropriate written procedures for implementing those authorities. EPA seeks to maintain its flexibiltiy to approve a variety of State programs and to encourage States to use innovative as well as traditional approaches in achieving compliance.

THE ROLE OF LOCAL GOVERNMENTS

In addition, more than one hundred major cities in the U.S. have already developed local UST ordinances and programs. Some programs are operated independently of the State; others are part of a wider State regulatory program. The implementation role of local agencies in the UST regulatory effort is being encouraged in many States in order to use local support (e.g., fire marshals and building code officials) as much as possible in order to improve overall administrative and enforcement capabilities. In Maryland, some counties have their own UST regulations or enforce building and fire codes regulating USTs generally focusing on permits and inspections of tank installations. Massachusetts delegates its regulatory program, including inspections and permitting, through the State Fire Marshal's Office to local fire departments. California requires counties to implement and enforce the technical requirements of the UST program, although cities may choose to develop their own programs and override county authority within the city limits.

CHAPTER 7

OTHER SOURCES OF INFORMATION ON THE UST PROGRAM

In addition to the materials in this manual, the UST program also has developed handbooks, slide shows, and video tapes on a wide range of topics to inform States and localities, tank owners and operators, and individuals in related industries about the regulations and program requirements. Many of these materials may be of interest to you. Exhibit 15 is an order form for OUST publications. Exhibit 16 provides information about obtaining OUST's video programs.

In addition to these materials, the EPA RCRA/Superfund Hotline (1-800-424-9346) can assist you with specific questions about the UST regulatory requirements.

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF UNDERGROUND STORAGE TANKS
PUBLICATIONS LIST

General Information

Regulations

Technical Reports

Order Form

Name: _____ Title: _____

Organization: _____

Street: _____

City: _____ State: _____ Zip: _____

Telephone: ( ) _____

Please return this order form to:

U.S. Environmental Protection Agency
Office of Underground Storage Tanks
P.O. Box 6044
Rockville, MD 20850

Please send me the following publications:

3 4A 4B 5 7 10 17 21 26S
32 34B 40 42 73 74 84 88 92

AVAILABLE FROM SOURCES OTHER THAN EPA

Publications

Musts for USTs: A Summary of the New Regulations for Underground Storage Tank Systems
Stock No. 055-000-00294-1 $2.50

Dollars and Sense: A Summary of the Financial Responsibility Regulations for Underground Storage Tank Systems
Stock No. 055-000-00293-2 $1.25

Cleanup of Releases from Petroleum USTs: Selected Technologies
Stock No. 055-000-00272-0 $7.50

Petroleum Tank Releases Under Control: A Compendium of Current Practices for State UST Inspectors
Stock No. 055-000-00295-9 $8.50

Processes Affecting Subsurface Transport of Leaking Underground Tank Fluids
Stock No. 055-000-00269-0 $3 25

Survey of Vendors of External Petroleum Leak Monitoring Devices for Use with USTs
Stock No. 055-000-00277-1 $4 25

Purchase From: Superintendent of Documents
U S Government Printing Office
Washington, D C. 20402
(202) 783-3238

Evaluation of Volumetric Leak Detection Methods for Underground Fuel Storage Tanks
Volume 1. No. PB89-124333 $39.95
Volume 2. No. PB89-124341 $76.95

Purchase From: National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4600

Soil Gas Sensing for Detection and Mapping of Volatile Organics
Catalog No. 49 $38.00/member; $46.75/non-member

Purchase From: National Water Well Association
P.O. Box 182039, Dept 017
Columbus, OH 43218
(614) 761-1711

Computer Software

Reg-In-A-Box software aids understanding/working with Federal UST regulations. Easy to use and available for Macintosh or PC-compatibles with hard disk drives. Not copy protected

Purchase PC-Compatibles From:

Public Brand Software, $5.00 plus shipping and handling, 1-800-426-3475 (24 hours a day), (317) 856-7571 (in Indiana), Visa and MasterCard accepted

Purchase Apple Macintosh From:

Budgetbytes Software, $5.99 plus shipping and handling, 1-800-356-3551 (8 a.m. to 6 p.m., CST), Visa and MasterCard accepted

Audiovisual Programs

VIDEOS

"Tank Closure Without Tears: An Inspector's Safety Guide"
(Focuses on problem of explosive vapors and safe tank removal.)

Video and booklet $30.00 prepaid
Booklet only $5 00 prepaid

"What Do We Have Here? An Inspector's Guide to Site Assessment at Tank Closure."
(A three part video on inspecting sites for contamination where tanks have been removed; provides a site assessment overview [30 minutes], an overview of field instruments [14 minutes], and a brief discussion of soil and water sampling [7 minutes].)

Video $40 00 prepaid
Booklet $5 00 prepaid

Purchase From: New England Interstate Water Pollution Control Commission
Attn VIDEOS
85 Merrimac Street
Boston, MA 02114

Video and booklet $5.00 prepaid

Borrow Closure Videos and Booklets From: New England Regional Wastewater Institute
2 Fort Road
South Portland, ME 04106

"Doing It Right"
(Proper installation of underground tanks and piping for installation crews)

Video $16 00 prepaid

Purchase From Either: American Petroleum Institute
1220 L Street, N.W.
Washington, D C. 20005

or: Petroleum Equipment Institute
Box 2380
Tulsa, OK 74101

"A Question of When: Tank Installation for Inspectors"
(Tank and pipe installation with a checklist for inspectors.)

"In Your Own Backyard"
(What tank owners should require from installation contractors.)

Videos $22 85 each prepaid

Purchase From: National Fire Protection Association
Attn: Jim Smalley
Batterymarch Park
Quincy, MA 02269

SLIDES

"Managing Underground Storage Tanks"
(Segments on all phases of tank management from inventory and installation to leak detection and clean up.)

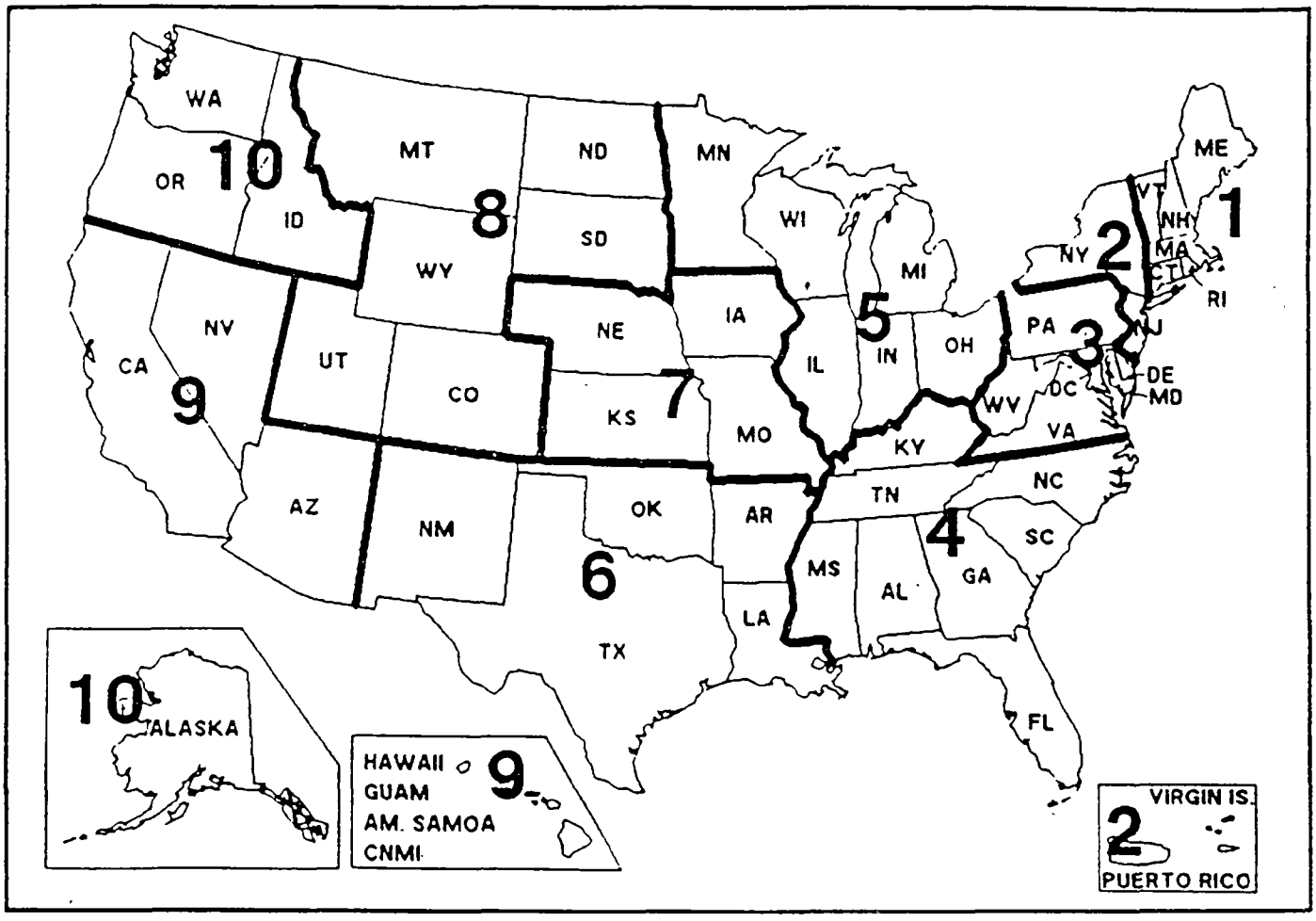
185 Slides, 27 page script, and 103 pages of graphics $120.00

Purchase From: National Audiovisual Center
Customer Services Section/WD
8700 Edgeworth Drive
Capitol Heights, MD 20743-3701
(301) 763-1891

How Can You Get More Information?

You can call the RCRA/Superfund Hotline (1-800-424-9346) or contact one of the EPA Regional UST Program Managers listed below.

EPA Regional UST Program Managers



U.S. EPA, Region 1
JFK Federal Bldg.
Mailcode: HPU-1
Boston, MA 02203-2211
617-573-9604
FTS 833-1604

U.S. EPA, Region 2
Hazardous Waste
Programs Branch
26 Federal Plaza
Mailcode: 2AWM-HWPB
New York, NY 10278
212-264-1369
FTS 264-1369

U.S. EPA, Region 3
841 Chestnut Building
Mailcode: 3HW31
Philadelphia, PA 19107
215-597-7354
FTS 597-7354

U.S. EPA, Region 4
345 Courtland St., N.E.
Mailcode: 4WM-GP
Atlanta, GA 30365
404-347-3866
FTS 257-3866

U.S. EPA, Region 5
230 S. Dearborn St.
Mailcode: 5HR-JCK-13
Chicago, IL 60604
312-886-6159
FTS 886-6159

U.S. EPA, Region 6
1445 Ross Avenue
Mailcode: 6H-A
Dallas, TX 75202-2733
214-655-6755
FTS 255-6755

U.S. EPA, Region 7
RCRA Branch
726 Minnesota Ave.
Kansas City, KS 66101
913-551-7651
FTS 276-7651

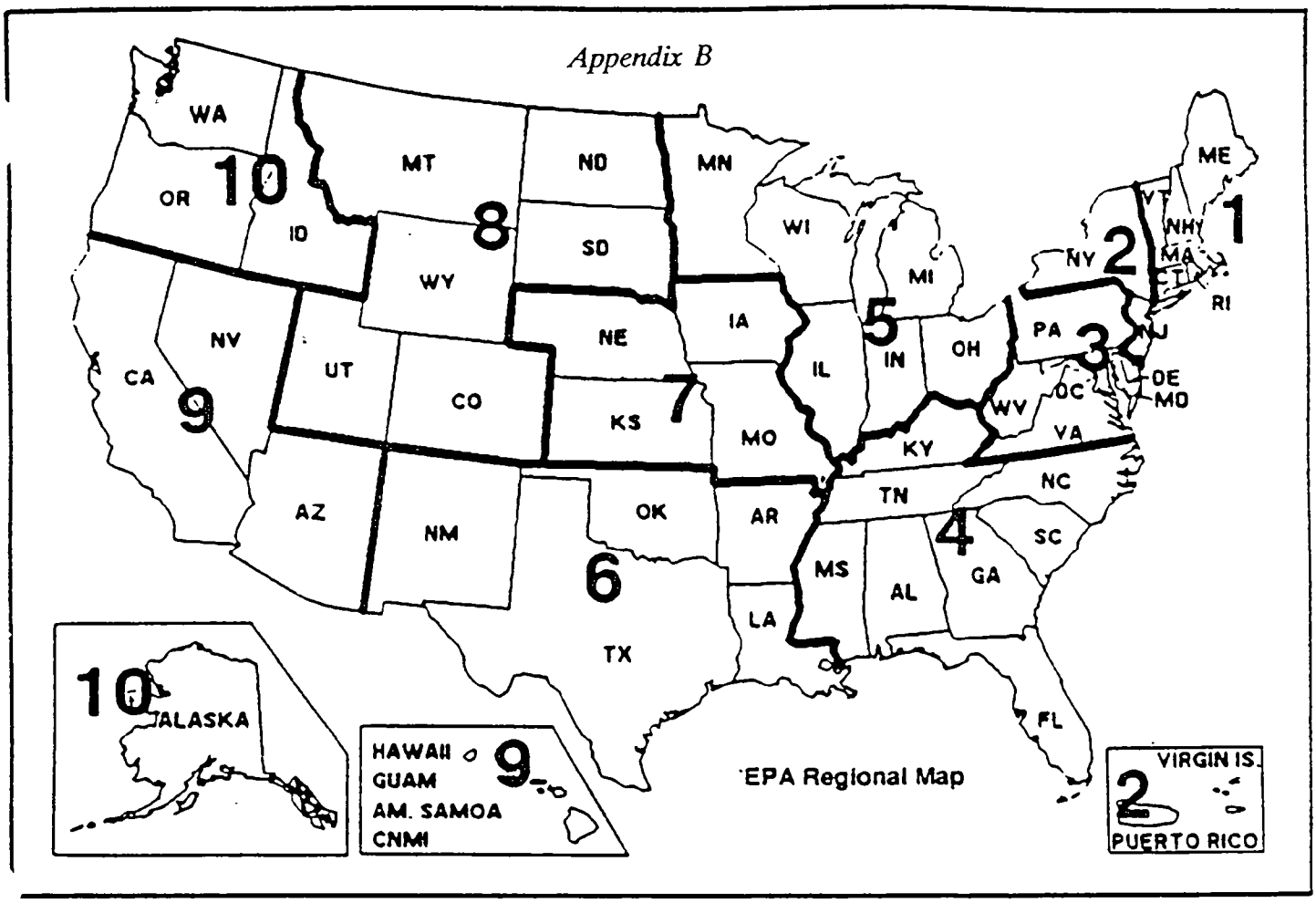
U.S. EPA, Region 8
999 18th Street
Mailcode: 8-HWM-RM
Denver, CO 80202-2405
303-293-1489
FTS 564-1489

U.S.EPA Region 9
75 Hawthorn St.
Mailcode: H-2-1
San Francisco, CA 94105
415-744-1500
FTS 484-2083

U.S. EPA, Region 10
1200 Sixth Ave.
Mailcode: WD-139
Seattle, WA 98101
206-442-0344
FTS 399-0344

State UST Program Offices

Appendix B



AL AL Dept. of Environmental Mgmt.
Ground Water Section/Water Division
1751 Congressman W. Dickerson Dr.
Montgomery, AL 36130
205-271-7832

AK Dept. of Environmental Conservation
P.O. Box 0
Juneau, AK 99811-1800
907-465-2653

AR AR Dept. of Pollution Control & Ecol.
P.O. Box 9583
Little Rock, AR 72219
501-562-7444

AZ AZ Dept. of Environmental Quality
Environmental Health Services
2005 N. Central
Phoenix, AZ 85004
602-257-6984

CA State Water Resources Control Board
OUST
P.O. Box 944212
2014 T Street
Sacramento, CA 95814
916-322-3133

CO CO Dept. of Health
Waste Mgmt. Division
Underground Tank Program
4210 East 11th Avenue
Denver, CO 80220
303-331-4864

CT Hazardous Materials Mgmt. Unit
Dept. of Environmental Protection
State Office Building
165 Capitol Avenue
Hartford, CT 06106
203-566-4630

DC Dept. of Consumer and Regulatory Affairs
Environmental Control Division
516 H Street, N.W.
Washington, D.C. 20001
202-783-3205

DE Division of Air and Waste Mgmt.
Dept. of Natural Resources & Environmental Control
89 Kings Highway
Dover, DE 19903
302-323-4588

FL FL Dept. of Environmental Regulation
Solid Waste Section
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-0300

GA GA Environmental Protection Division
3420 Norman Berry Drive
Hapeville, GA 30334
404-656-7404

HI Dept. of Health
Hazardous Waste Program
P.O. Box 3378
645 Halekauwila Street
Honolulu, HI 96801-9984
808-548-8837

IA IA Dept. of Natural Resources
Henry A. Wallace Building
900 East Grand
Des Moines, IA 50319
515-281-8779

ID ID Dept. of Health & Welfare
Division of Environmental Quality
450 W. State Street
Boise, ID 83720
208-334-5847

IL Office of State Fire Marshal
3150 Executive Park Drive
Springfield, IL 62703-4599
217-785-5878

IN Underground Storage Tank Program
IN Dept. of Environmental Mgmt.
105 South Meridian Street
Indianapolis, IN 46225
317-243-5055

KS KS Dept. of Health & Environment
Forbes Field, Building 740
Topeka, KS 66620
913-286-1594

KY Dept. of Environmental Protection
Hazardous Waste Branch
Fort Boone Plaza, Building #2
18 Reilly Road
Frankfort, KY 40601
502-564-6716

LA LA Dept. of Environmental Quality
P.O. Box 44274
625 North 4th Street
Baton Rouge, LA 70804
504-342-7808

MA Dept. of Public Safety
P.O. Box 490
Tewksbury, MA 01876
508-851-9813

ME Underground Tanks Program
Bureau of Oil & Hazardous Material Control
Dept. of Environmental Protection
Ray Bldg. - Station 17
Augusta, ME 04333
207-289-2651

MD MD Dept. of the Environment
Hazard & Solid Waste Mgmt. & Admin.
OUST and LUST Division
2500 Broening Highway
Baltimore, MD 21224
301-631-3442

MI Fire Marshall Division
MI Dept. of State Police
7150 Harris Drive
Lansing, MI 48913
517-322-1935
800-MICHUST

Underground Storage Tank Program
MN Pollution Control Agency
520 West Lafayette Road
St. Paul, MN 55155
612-296-7743

MO MO Dept. of Natural Resources
P.O. Box 176
Jefferson City, MO 65102
314-751-7428

MS Dept. of Natural Resources
Bureau of Pollution Control
UST Section
P.O. Box 10385
Jackson, MS 39209
601-961-5171

MT Solid & Hazardous Waste Bureau
Dept. of Health & Environmental Sci.
Cogswell Bldg. - Room B-201
Helena, MT 59620
406-444-2821

NC Div. of Environmental Mgmt.
Ground-Water Operations Branch
Dept. of Natural Resources and Community Development
512 N. Salisbury, P.O. Box 27687
Raleigh, NC 27611
919-733-3221

ND Division of Waste Mgmt.
ND Dept. of Health
1200 Missouri Avenue
Bismarck, ND 58502-5520
701-224-3498

NE NE State Fire Marshal
P.O. Box 94677
Lincoln, NE 68509-4677
402-471-9465

NH NH Dept. of Environmental Services
Water Supply & Pollution Control Div.
Hazen Drive, P.O. Box 95
Concord, NH 03301
603-271-3503

NJ Dept. of Environmental Protection
Div. of Water Resources (CN-029)
Trenton, NJ 08625
609-984-3156

NM UST Section (Rm. N. 2150)
NM Environmental Improvement Div.
H. W. Bureau
1190 St. Francis Drive
Santa Fe, NM 87503
505-827-2894

NV Division of Environmental Protection
Dept. of Conservation & Natural Res.
Capitol Complex 201 S. Fall St.
Carson City, NV 89710
702-885-5872

NY Bulk Storage Section, Div. of Water
Dept. of Environmental Conservation
50 Wolf Road, Room 326
Albany, NY 12233-0001
518-457-4351

OH State Fire Marshal's Office
Dept. of Commerce
8895 E. Main Street
Reynoldsburg, OH 43068
614-864-5510
800-282-1927

OK OK Corporation Comm.
Jim Thorpe Building
Oklahoma City, OK 73105
405-521-3107

OR OR Dept. of Environmental Quality
811 SW Sixth Ave.
Portland, OR 97204
503-229-5769

PA PA Dept. of Environmental Resources
Bureau of Water Quality Mgmt.
Non-point Source & Storage Tank Section
9th Floor Fulton Building
Harrisburg, PA 17120
717-787-8184

RI Div. of GW and FW Wetlands
Dept. of Environmental Management
291 Promenade St.
Providence, RI 02903
401-277-2234

SC Ground-Water Protection Division
SC Dept. of Health & Environ. Control
2600 Bull Street
Columbia, SC 29201
803-734-5332

SD Office of Water Quality
Dept. of Water & Natural Resources
Joe Foss Building, rm. 217
Pierre, SD 57501-3181
605-773-3351

TN Division of Ground-Water Protection
TN Dept. of Health & Environmental
150 9th Avenue, North
Nashville, TN 37219-5404
615-741-0690

TX UST Program
Texas Water Commission
P.O.Box 13087; Capital Station
Austin, TX 78711
512-463-8180

UT Bureau of Solid & Hazardous Waste
UT Dept. of Environmental Health
288 N. 1460 West
Salt Lake City, UT 84116-0700
801-538-6170

VA VA Water Control Board
2111 North Hamilton Street
P.O. Box 11143
Richmond, VA 23230-1143
804-367-6350

VT Dept. of Environmental Conservation
Waste Management Division
103 South Main St.
Waterbury, VT 05676
802-244-8702

WA WA Dept. of Ecology, M/S PV-11
Solid & Hazardous Waste Program
Olympia, WA 98504-8711
206-459-6272

WI Dept. of Industry, Labor and Human Relations
P.O. Box 7979
Madison, WI 53707
608-266-7605

WV Division of Waste Management
WV Dept. of Natural Resources
1260 Greenbriar Street
Charleston, WV 23505
304-348-5935

WY Water Quality Division
Dept. of Environmental Quality
Herschler Building, 4th Floor West
122 West 25th Street
Cheyenne, WY 82002
307-777-7085

AS Environmental Quality Commission
Office of the Governor
American Samoan Government
Pago Pago, American Samoa 96799
684-633-2682

GU GU Environmental Protection Agency
P.O. Box 2999
Agana, Guam 96910
671-646-8863

NMI Division of Environmental Quality
P.O. Box 1304
Commonwealth of Northern Mariana Islands
Saipan, CM 96950
607-234-6984

PR Water Quality Control Area
Environmental Quality Board
Commonwealth of Puerto Rico
Santurce, Puerto Rico
809-725-8410

VI Environmental Protection Division
Dept. of Planning and National Resources
179 Altona and Welgunst
Charlotte Amlie, St. Thomas,
Virgin Islands 00802
809-774-3320

U.S. Environmental Protection Agency
Office of Underground Storage Tanks
Washington, D.C.
11/88
Biannual Update