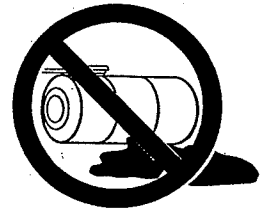


L.U.S.T. LINE



A Report On Federal & State Programs To Control Leaking Underground Storage Tanks

Tank Disposal . . . An Issue Caught In The Regulatory Cracks

*Did ya ever hear the story of the two ton hot potato?
Dug from the earth to avoid the liability?
It weren't filled with butter or sour cream or chives
So dump the old thing...git it out of our lives!
Dump dump dump dumpy dump dump
Dump the old thing...git it out of our lives.*

In deference to federal or state UST requirements and to the insurance industry's stand on liability coverage, tank owners across the country vigorously continue to unearth bare steel tanks. Those of us caught up in the colorful world of UST's are quick to notice newly pulled tanks . . . resting beside their former burial sites or lying among the sedges in old cow pastures. Some have been illicitly trashed along roadsides or "cleverly" refashioned for use as culverts. In the sense that "one man's trash is another man's treasure", used bare steel tanks are even reenlisted for further duty as petroleum (or other product) containers.

LUSTline has identified tank disposal concerns in States throughout the country. States and communities are experiencing tank yanking and replacement operations with mixed emotions. On one hand it is good to be rid of leakers and potential leakers. On the other hand their removal has caused new anxieties. In this issue of LUSTline we are addressing what appear to be the major issues associated with tank disposal. We hope that in future issues readers will provide us with continued enlightenment on this subject.

Tank Disposal A Hazardous Dilemma

Empty UST's may or may not be hazardous. It depends on circumstances . . . conditions . . . the State . . . potential liability. If this sounds complex, it's because the issue is complex, and this is unsettling for tank handlers. The problem is not the tank, its the residue that may be inside it.

Regulations promulgated under the Federal Resource Conservation & Recovery Act (RCRA) set specific standards for managing hazardous waste vessels, but this article is not the place to discuss the intricacies of those standards. However, it can be said, in truth, that federal law is very complex on the subject of identifying hazardous wastes and the subsequent cleaning of tanks.

Alas, waste disposal is one of the more confounding sore spots of our time and two ton used tanks are no exception. In olden days (a few years back) when tanks were newer and leaks seemed fewer and accountability was insured, you could pull tanks and junk'em, like used cars and appliances.

But things have changed. Some

of this junk is dangerous, and scrap metal processors and even junk dealers are getting "picky". They are becoming more aware of material hazards . . . they have become wary of UST's. Even used automobiles must be stripped of 13 items, including gas tanks, before the scrap metal processor will accept them.

What's happening? It's a national disease . . . junk yard and scrap metal dealers have joined the growing ranks of businesses facing the rapidly decreasing availability and affordability of environmental impairment liability insurance.

Junk dealers are in the business of consolidating and redistributing their merchandise. Unless the tanks are sold for reuse as illegal bare steel tanks or marigold planters, their best continued use lies in the direction of scrap metal recycling. But, if the junk dealer hopes to sell his tanks to a scrap processor or even if some other innovative use is found for the tank, he has to find some way to dispose of residue.

Some tank yards have the advantage of being hooked into large municipal treatment plants which have the capacity to absorb washwater used to clean tanks. However, depending on the availability and/or size of a treatment plant, or how a State classifies the washwater and residue, it is not always clear what to do about this waste.

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Tank Disposal *Continued*

If the junk dealer doesn't want to get involved with tank cleaning and/or if he doesn't want to be a hazardous waste storage facility, then he probably won't want the old tank. If he doesn't want it, who does? Where are the dern things going?

In most states, confusion about the hazardous status of UST contents has forced the yanked tank into the starring role of "two ton hot potato". Since the tanks are hot liability items, a lot of folks don't want to be "stuck" with them. In some of the more dastardly tank disposal circles, a "get rid of the damn thing" attitude prevails, while in the more ethical circles, an attitude of "HELP!" prevails. Ethical tank disposal carries a higher price tag. Somebody has to pay for cleaning the tank "properly", for disposing of contents "properly", and for transporting everything "properly". First you've got to find out what "proper" is and that could be the hard part.

Tank disposal appears to have trickled in between the regulatory cracks. Some states are attempting to seal those cracks by using state authorities to designate petroleum product residue as "hazardous waste". This action provides specific administrative requirements for cleaning tanks and tracking the residue from "cradle to grave". Massachusetts has provided some direction for tanks by designating specific yards for tank disposal. This is one approach towards encouraging pro-

per disposal and discouraging "midnight tank dumping".

Scrap Metal or Junk?

It would be better, by far, if used tanks were melted down and reborn as toasters or fork lifts. Unfortunately, domestic scrap use has been on the decline over the past few years. But, according to the Institute of Scrap Iron & Steel (ISIS) in Washington, D.C., the U.S. exported over 9.6 million net tons of carbon steel in 1985, a 4% improvement over 1984 exports.

How do steel tanks fit into the recycling picture? They face the same kinds of problems as containers such as barrels and drums. The ISIS says that scrap processors are rethinking the advisability of handling barrels, drums and other containers as recyclable items.

Scrap processing (in contrast to the "junkyard") is a heavy industrial operation where metallic scrap is sorted, processed to exacting specifications, and then shipped to industrial customers such as steel mills and foundries. According to the ISIS, "the scrap processor is not willing to jeopardize his company's image and possibly its existence by accepting hazardous material, or by processing material in a way that could cause environmental harm, or lead to enforcement actions by regulators."

Dr. Herschel Cutler, ISIS Executive Director, says some scrap processors have totally banned containers that might have contained hazardous wastes or other hazardous substances. He says that some processors will accept such contain-

ers only from sources where the processor is confident that cleaning procedures have been followed and no residues remain that might be released in processing. Often the history of used UST's is better known than that of drums and barrels.

Dr. Cutler emphasizes that the Institute is cautioning its members "not to assume any unnecessary risk, and if that means turning away business that had been realistic in the past, so be it." He explains that some processors will accept tanks if they are accompanied by certification and indemnification documents designed to assure that any potential liability for the residues remains with the original owner of the tank and not the processor.

Good Ideas Anyone?

The solution to tank disposal is clearly not resolved. Scrap processors say the tanks will be processed only if someone else pays for the cleaning. The scrap processing industry operates within a small profit margin. They can't afford to clean the tanks. Who, then, will pay for the cost of cleaning? Who will pay the cost of wastewater disposal? Who will be subject to potential Superfund liability in the event of improper management of the residues/wastewaters? Should tanks be allowed to be closed in place? Can we afford to wait until all the "dumpy dumped" tanks fester and become new hot spots? These are the "\$64,000" tank disposal questions. We don't have \$64,000, but we would love to know about any good answers. ■

LUSTLINE

Editor, Ellen Frye

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Helga Bulter, EPA Project Officer
Jennie Bridge, NEIWPCC Project Officer
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The New England Interstate Water Pollution Control Commission was established by an Act of Congress in 1947 and remains the oldest agency in the Northeastern United States concerned with coordination of the multimedia environmental activities of the States of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island and Vermont.

NEIWPCC

85 Merrimac Street, Boston, MA 02114
Telephone: (617)367-8522

A Tank Disposal Solution In Chicopee, Mass

There is at least one facility in the United States that is thoroughly cleaning used UST's, cutting them up, and selling them as scrap metal. Mass Tank Disposal (MTD) in Chicopee, Massachusetts has been designed for cost effective tank disposal and pollution control. UST regulators from 5 Northeast States visited the facility on September 3, to feast their eyes on such an operation.

At first glance, the site doesn't look like such a big deal. It is located on about ½ acre of compacted clay soil. It is bermed on three sides with an uphill slope on the fourth side. Along the perimeter of the yard are neat rows of excavated bare steel

tanks... even a couple of old chemical reactor tanks. One lone tank sits in the middle of a concrete area in the center of the yard... as if waiting execution. Something stirs your blood as you realize you are about to see this tank steam cleaned and then... cut up.

The concrete area is the washing/steaming pad which slopes to a central drain. The well ventilated tank has been punctured with holes (sometimes the tank arrives with its own supply of holes). A hose is inserted into one of the holes and anchored down. As the high pressure steam begins to build up to 300 psi and the washwater heats up to 400 degrees, noise hushes the voices of

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Maine Tank Removal Accident Prompts Words Of Precaution

Nationally, many tanks have been pulled out of the ground over the summer. In this process some accidents have occurred. It is extremely important that proper removal procedures be followed, especially for tanks containing volatile liquids or vapors. In response to a recent fatal tank removal accident in Portland, Maine, the State Department of Environmental Protection Bureau of Oil & Hazardous Materials Control issued the following memo, "Precautions During Tank Removal", to the State's Certified Underground Tank Installers . . . and other interested parties.

The accident in Portland was largely the result of using a vacuum truck to remove product from the tanks as well as moving air through the tanks to vent the tanks. Because there was no vapor removal mechanism anywhere on the vacuum truck, the air exhausted from the truck contained significant amounts of gasoline vapors. This problem was compounded by the location of the vacuum exhaust at a point low to the ground, and the enclosed nature of the site. These factors allowed the vapors, at the site, to accumulate to an explosive level. A spark from a vehicle ignited the gasoline vapors and fire traveled into a tank which

still contained an explosive level of gasoline vapors. The explosion in the tank blew out one end of the tank while the main body of the tank swung around and struck the victim of the explosion, killing him instantly. There is little doubt that vacuum trucks, as they are presently designed, are not suitable for pumping explosive liquids or vapors from storage tanks.

An issue which future regulations will address is whether any type of purging or venting operation to remove explosive vapors from a tank should be attempted on-site. Because any purging procedure will release some quantity of potentially explosive vapors into the surrounding area, public safety considerations may dictate that purging operations not be performed in densely populated areas where sources of ignition may be too numerous to control.

While the existing DEP regulations and American Petroleum Institute recommendations specify that the tank should be rendered gas-free prior to removal from the site, this should be done only if public safety concerns are completely addressed. In most cases, it will probably be safer to plug all tank openings, except for a 1/8" vent hole, and transport the tank

to a remote site where the venting operation can be done without endangering the public. When planning a gasoline tank removal, consult with the local fire chief - some communities have recently designated sites specifically for venting tanks.

Until a formal regulation change can be made, the following interim guidelines are suggested:

A. Vacuum trucks should not be used to pump explosive liquids or vapors unless the exhaust air from the vacuum pump is filtered or otherwise treated so that the exhaust air contains no explosive vapors. Explosion meters should always be used in conjunction with vacuum trucks to monitor the exhaust area.

Positive displacement pumps designed to be used where explosive conditions may exist (i.e. bronze gear pumps), are recommended for removing explosive liquids from storage.

B. Department of Environmental Protection regulations which specify the on-site gas-freeing of tanks should be disregarded if there is any possibility of this operation causing a threat to public safety. This operation should only be performed at remote sites where public access can be restricted.

C. All tanks should be transported from the site with all openings, including corrosion holes, plugged or capped except for a 1/8" vent hole. Tanks should be securely fastened to the transporting vehicle and be positioned such that the 1/8" vent hole is located on the uppermost point of the tank.

D. Tanks should only be cut up or dismantled in remote areas where public access can be restricted. ■

Disposal Solution Continued

the assembled regulators.

Thwunk...thwunk is heard. The thwinking intensifies as the hose thrashes around the inside of the tank. The energy inside the tank makes the wash/steam pad seem more like a launch pad . . . perhaps a new answer to tank disposal.

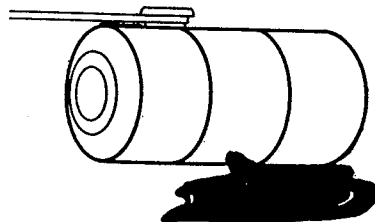
Steam escapes through the tank holes and washwater trickles out into a series of underground filters. Sludge is collected at one level. Water and product are passively separated at another level. The product is collected. The water passes through an air stripper and is discharged into the City sewage treatment system. The steam cleaning process can take up to 3 hours depending on the tank type and contents.

After cleaning, the tanks are spot checked with an explosion meter. While still on the pad a remotely operated cutting torch cuts the ends off the tank. This robot approach keeps the human operator away

from the first cut spark. The tank is then relocated to one side of the yard where it is cut up and stockpiled as scrap steel. A scrap processor purchases the steel and prepares it for export.

Ray Boileau, co-owner of the facility, exudes considerable pride in the operation. Local, federal and state authorities have regulated the facility for such public concerns as health and safety, operational methodologies, pollution treatment, by-product generation and wastewater treatment and discharge. Collected solids are drummed, manifested, and transported to an asphalt drying operation. Liquids are manifested to a disposal site.

The tanks are processed at a cost of about 10 cents per gallon of capacity. Thus, it would cost about \$1,000 to properly clean a 10,000 gallon tank. The success of this kind of operation depends upon the availability of a consistently large volume of tanks. MTD can process 10 to 15 tanks per day, weather depending. ■



Treating LUST Contaminated Soil

When a UST is pulled out of the ground, more often than not, the soil which surrounded it is contaminated...to some degree. The amount of soil which is contaminated depends on whether the tank leaked and, if so, how much and for how long. If the tank never leaked, the soil is still likely to be somewhat tainted through day to day overflow spills.

What happens to this soil? In most instances, it either goes back into the hole after the tank is removed or it sits in a neat ventilating heap (the heaps are sometimes covered to cut down on air emissions) above ground until...until, until.

If a soil is contaminated with a "hazardous" waste or a "hazardous" substance, then Superfund comes to the rescue and EPA does a site by site determination of how clean is clean. They will require that some amount of soil be removed, manifested and properly dumped.

But, soils contaminated with raw product such as gasoline are another story. These soils aren't officially "hazardous" in the eyes of the Feds. (There have been instances where a soil has been ignitable and, therefore, "hazardous" under federal law.) They may be judged hazardous in the eyes of the state, but, if not, then they are not considered hazardous...even though they are not unhazardous.

Thus, if your everyday LUST contaminated soils are regulated at all, it is through state or local decree. Many states have some guidelines about what can and cannot be put back into the ground. If the soil cannot be put back into the ground, then it often goes to the nearest landfill or, if that's not allowed, to another state.

But, if these soils could be treated, then a lot of these disposal problems could be squelched. Indeed, treatment possibilities are beginning to emerge. Land farming has been implemented for oil spill debris and is now being considered for volatile organic contaminated soils. Asphalt batching plants may be another way of processing the debris. Other technologies on the treatment horizon include soil washing, in-situ flushing, and mobile incineration.

Since we cannot endlessly pile our contaminated soils into heaps headed for heaven, soil treatment is a promising alternative. Of course, preventing the problem, in the first place, is the gold medal answer. But if a soil is contaminated and must be treated, the ideal answer would be to effectively treat that soil in place to, ultimately, avoid carting it around.

In the next issue of LUSTline, we'll explore some soil treatment technologies.■

As vendors return their questionnaires, mathematical models will be made from this information...one model per vendor. The Lab will compare vendor models with what they know to be the case with the EPA test tanks. They will also test the vendor model against the various conditions found throughout the 50 states. The vendors will also have the opportunity to come to the test tanks and perform their own tests. They will also be asked to adjust for specified climatic and environmental conditions.

When the tests are completed, what will EPA be able to say? They hope to be able to say what the smallest leak rate is that each testing method can detect. Also, at that rate, they should be able to indicate the probability of false positives and false negatives. They may also be able to say that the sensitivity and probabilities are good for certain classes of conditions and not so good for other classes of conditions.

The time frame in which all of this can be accomplished depends on many factors: the total number of vendors, how efficiently they supply information, and how well things go with the data base. "This is a substantial technical project we are undertaking," explains Jack Farlow, Chief of Technology Department Staff, "a lot of things have to go well. We have spent over a half million dollars on equipment, alone."

This study will probably not set an optimum leak testing rate. The .05 gallons per hour used in NFPA 329, *Underground Leakage of Flammable and Combustible Liquids*, may not be reliably attainable by anyone if conditions aren't just right. Under the NFPA revision cycle, a revised NFPA 329 is to be adopted this Fall. According to Marty Henry, NFPA's Public Fire Protection Division Director, the Association will probably expand that .05 for tanks greater than 10,000 gallons, because they recognize it is extremely difficult technically to measure .05 for tanks greater than 10,000.

"Every method is only so good," says Farlow. "If you push the state-of-the-art to get a lower number, then you end up with a higher error rate." He feels that a lot will be learned by all parties in this experiment. He recalls the oil spill cleanup equipment study which was done a few years back. "A hundred fifty different pieces of equipment were studied and all the players ended up knowing more and made improvements."

On a final note, Jack Farlow says that if anybody thinks they have a good testing method, they should not hesitate to call him at (201) 321-6631.■

Tank Tightness Testing Study Geared Up And Ready To Roll

What's happening with the EPA's "Evaluation of Volumetric Leak Detection Methods" study? This is a frequently asked question in the tank world these days. If tightness testing is to be used to evaluate tank integrity, heaven knows, we've got to know more about testing reliability. Whose test is reliable? What about that .05 gallons per hour number? Why is EPA taking so long? Where are the results?

If good things come to those who wait, then sit back and relax awhile longer, and good information should come along.

As of now, the EPA Hazardous Waste Engineering Research Laboratory has identified at least 30 "commercial" leak detection methods which could qualify for participation in the study. Letters have been written to these leak de-

tecting businesses, advising them that EPA is conducting an evaluation and that if they wish to participate they should send back the reply form. Enclosed with this letter is the reply form, a four page questionnaire, a 108 page statement on how the Lab will conduct the evaluation, and a copy of EPA's *Underground Leak Detection Methods: A State-of-the-Art Review* (so testers can read Chapter 5 to understand the background of the evaluation strategy).

So far the Lab has received 15 responses, and no one has said "no". The two test tanks, one steel and one fiberglass, are ready with their respective data bases. The Lab is now modelling various soil and climatic conditions which exist throughout the fifty states to add to the data base.

Spill Prevention . . . The Other Side Of The Coin

Tanks and piping must be conscientiously selected, installed, maintained and monitored. Over the past year, tank owners have been learning that these practices are key to underground storage system leak prevention. But there is another side to the release prevention coin which could do with a bit more attention; it is the importance of spill prevention. Contaminated soil may not necessarily be the result of a leaking UST. Product transfer spills and tank overfills can penetrate the soil and contaminate groundwater in the same manner as a leak from a UST.

Spills can occur in a variety of ways . . . when a tank is mistakenly or carelessly overfilled; when product remaining in the truck hose is emptied onto the ground after the tank has been filled; or, occasionally, when a delivery is accidentally dispensed into an observation well. Many spills result from human error or from inadequate labelling of fill pipes.

Tank owners need to be aware of how spills can happen. They should also realize that there are ways to prevent spills. The first order of prevention is to implement conscientious operating practices at the underground storage facility. Operating guidelines can be found in the National Fire Protection Association's (NFPA) publication 385, "Tank Vehicles for Flammable and Combustible Liquids 1985"; the American Petroleum Institute's (API) publication 1621, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets"; and the New York State Department of Environmental Conservation's "Recommended Practices for Underground Storage of Petroleum" and "Technology for the Storage of Hazardous Liquids." (For New York publications call (518)457-4114.)

Spill Prevention Techniques/Devices

Spill prevention practices, at the very least, include labelling and color coding pipes and fill ports so that information on product type and tank capacity is easily accessible (see article on API fill port color code). The operator and delivery person should be aware of available capacity in the tank by reading gages and/or dip sticking the tank. (Gas gages, which are useful means of determining available capacity, are standard equipment in cars but not in bulk storage tanks.)

Tank overfill protection is accomplished by measuring and controlling the product level in the tank such that the quantity of product placed in the tank never exceeds its capacity. There are a number of spill prevention techniques and devices on the market which can be used to minimize product delivery and tank overfill spillage. These include: tank level sensors, high level alarms, au-

tomatic shutoff valves, and spill containment manholes.

No matter what kind of spill prevention system is in use, the operator/attendant should see to it that the truck driver delivering the product stays with the truck so that he is not next door at the coffee shop when the tank is nearly full or the hose becomes disconnected.

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New API Fill Port Color Code Available

The American Petroleum Institute (API) has accepted a new Equipment Marking Color-Symbol System which will replace the current API color code. The change was prompted by the rapid proliferation of new motor fuels combined with the limited number of readily identifiable colors. Under this system, petroleum products are assigned color and symbol codes which are applied to appropriate fill ports to make tank contents easily identifiable. The goal of this practice is to minimize product spills and losses caused by delivery to the wrong tank.

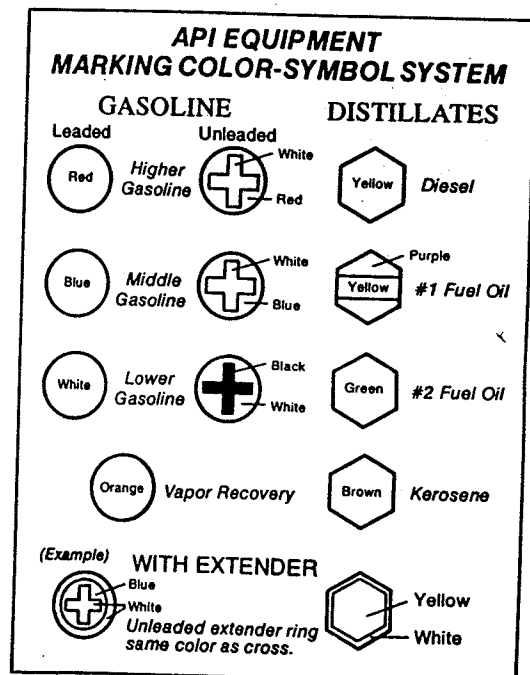
Many petroleum storage facilities have already adopted the current API color code and will change over to the new system. While under serious consideration in Arizona, the States of New York and Delaware now require use of the new system as a spill prevention measure and to encourage uniform code recognition.

Uniformity can be a virtue where petroleum delivery is concerned. Businesses which use their own fill port codes and symbols may, inadvertently, be contributing to code confusion on the delivery end.

The symbol for gasoline is a circle. A red circle indicates the higher octane, blue - medium octane, and white - lower octane. A cross, black on white or white on red or blue, inside the circle indicates the gasoline is unleaded.

A product containing an extender such as alcohol is designated by the addition of a border around the symbol - black around white and white around other colors. A hexagon symbolizes a distillate fuel, with yellow indicating diesel, green - fuel oil, and brown - kerosene.

API is about to publish Bulletin 1637 which will explain in detail how the system is applied and where. It will be available from API - Publication Department, 1220 L St. NW, Washington, D.C. 20005.



It might be a good idea to place a sticker in a conspicuous spot on all tank trucks for ready reference.

Regulatory Progress

OUST is operating on a very tight schedule for developing proposed standards for existing and new tanks (storing petroleum and chemical substances), as well as for corrective action . . . all to be published in the February 1987 Federal Register.

The regulatory requirements currently under consideration fall into the following range of choices:

- For new tanks:
 - Secondary containment tanks with interstitial monitoring (double-walled protected tanks or single-walled protected tanks with a liner).
 - Single-walled tanks and piping with corrosion protection and leak detection.

- A class approach with the objective of greater stringency in vulnerable groundwater areas.

- For existing tanks:

- Leak detection phased in over 3-6 years.

- Upgrading or replacing substandard tanks (i.e. unprotected single-walled tanks) over some extended period of time.

- Gradual upgrading or replacement of all tanks without secondary containment.

- Rapid replacement of tanks without secondary containment.

- For corrective action:

- Fixed national numeric standards for cleanup levels.

- Site-by-site risk assessments and cleanups as necessary to protect human health and the environment.

The office of Underground Storage Tanks' recommendation, at this point, is to focus the Agency's regulatory efforts for proposal in February on the following approaches:

- New petroleum tanks: single-walled protected tanks with frequent to continuous leak detection.

- Existing petroleum tanks: retire or upgrade tanks in ten years. Phase in periodic tank testing or other leak detection in the interim.

- New chemical tanks: secondary containment with variances based on leak detection capability.

- Existing chemical tanks: phase in periodic tank testing or other leak detection, but if leak detection is not available for the substance stored, replace with secondary containment within 5 years. In addition, within 10 years, require frequent to continuous leak detection combined with an upgrade to single-walled protected tanks or replace with secondary containment.

The Administrator has endorsed this approach, but the current focus is not considered to be "cast in concrete", in fact, the other regulatory options will also be discussed in some detail in the proposed rules preamble.

OUST is also working intensively on developing recommendations for a sensible process to approve State UST programs. In addition, the work on financial responsibility requirements to be placed on tank owners and operators is continuing, but will, obviously, be considerably influenced by any LUST Trust Fund (Superfund) legislation enacted by Congress this fall. Recommended approaches for both these areas are slated to be proposed also in February '87.

New Names At OUST

The OUST office has recently added new staff personnel who will be focusing, for the next several months, on the following specific aspects of the program: Joe Italiano (202/382-5875) is assigned to the Exempted Tanks Study. Kim Green (202/475-9379) will work on Interim Prohibition, Ellie McCann (382-7601) is on State Programs, and Betty Arnold (382-4756) is Management Analyst. Louise Wise (382-7601) is now Acting Standards Branch Chief. Helga Butler (382-4756), Special Assistant to the Director, is now in charge of the Office's Communication & Outreach efforts, full time. Ed Morrison (382-5628) is a law student working part time on Definitions. ■

Study of European UST Programs

OUST has initiated a new research project - one that examines and assesses the European experience with underground storage tank use. The focus of the project is to gather statistical data that illustrates the performance of UST technologies over time. This project has been undertaken because such information is not available in this country. As a result of this project, EPA will gain insight into UST practices and technologies that may or may not have worked well.

The project is well underway. During the past few months, UST programs in Belgium, France, West Germany, the Netherlands, Sweden, Switzerland, and the United Kingdom have been analyzed. Interviews have been conducted with regulatory officials, industry representatives from testing institutes. Information has been obtained concerning statutory and regulatory authorities, tank designs, leak detection, inspections, and monitoring. In addition, contacts have provided performance data and information on corrective action for tank releases.

A report of findings will be issued shortly. Information on this will be provided in the next issue of LUSTline. ■

Ginny Cummings (202) 382-7925

EPA Release Incident Study Now Available

Over the past year, EPA has gathered information from State files on releases from underground storage tanks. By April of this year, EPA collected information on 12,500 release incidents. This information was compiled into a report that identified and evaluated the major causes and effects of tank system failures. It is important to realize that this is not a statistically valid survey, but merely a compilation of information from State files. (The findings in this report were discussed in LUSTline Bulletin No. 3 published in May, 1986.) The report is now available to the public free of charge.

Copies can be obtained from:

June Taylor
Outreach Coordinator -
Office of UST's
U.S. Environmental Protection
Agency
401 M Street, S.W.
Washington, D.C. 20460
(202) 382-5628

UST Studies And Reports To Be Published In The Next 3-6 Months

1. Retrofitting Corrosion Control on Existing Tanks
2. Overfill and Spills Control
3. Closure Practices and Regulations
4. A Release Incident Follow-up on the Local Level

Follow-up Study of Release Incidents From Underground Storage Tanks

EPA has begun a follow-up study on release incidents from UST's. Information on release incidents is being collected from key counties and municipalities. The purpose of this study is to supplement information gathered from state offices. Specifically, the Agency is seeking more data on impacts to ground water and soils as well as costs for clean ups. A second purpose for this study is to determine trends between location-specific release information and local regulatory approaches or environmental conditions.

A preliminary report has already been issued. This report contains information from 20 localities on nearly 1,000 release incidents (only 10 percent of these incidents were identified in the previous state study). The county results confirm that the number of releases that are reported is increasing substantially each year and that tank size has no bearing on the probability of release. The county results also indicate a mean tank system age of 19.5 years at the time of the report which compares to a mean age of 17.0 years for the state data.

The most commonly reported cause of release was corrosion. This could be due to the fact that most county release incidents occurred in areas of shallow ground water where would enhance corrosion.

Other findings of the report show that:

- Only 10% of the county leaking tanks were reported to be constructed of fiberglass, compared to 19% at the state level.
- Integrity tests and product inventory were more commonly reported as the initial means of detection at the county level than at the state level.
- Nearly 80% of the release incidents resulted in soil contamination of 0.05 acres or less; about 90% impacted 10 acres or less.
- About half of the release incidents reporting ground water contamination impacted 0.05 acres or less of the aquifer; 90% impacted 10 acres or less.
- More than half of the incidents involving ground water contamination impacted the aquifer to a depth of no more than 20 feet. ■

Questions and Answers

EPA receives numerous UST questions on the Hotline. Here are some of the most frequently asked questions in the past 3 months.

Q. Does metal connecting pipe attached to an underground storage tank have to be cathodically protected against corrosion?

A. Yes. Subtitle I regulates tank systems, which include the tanks and all appurtenances such as distribution lines, fill pipes, vent lines, manifold lines, filters, and pumps. The pipes and line should be cathodically protected using any of the various protection methods. In addition, connecting appurtenances should be electrically isolated from tanks by placing nylon bushings at connecting joints.

Q. A tank owner has bare steel tanks in good condition that are presently not in service and out of the ground. He now wants to bury them and store petroleum in them. Can he put them in the ground as they are? If not, what must he do?

A. No, he can not put an unprotected bare steel tank back in the ground. At a minimum, the tank must be protected against corrosion. To do that, a bare steel tank can be installed with an impressed current corrosion protection system. Or, an epoxy or fiberglass coating can be added along with sufficient anodes to protect it from corrosion. A corrosion engineer should be consulted so that corrosion protection is effectively designed to suit the underground soil environment and to take into account stray current conditions.

In 1985, the National Association of Corrosion Engineers (NACE) published its "Recommended Practice for Control of Corrosion on Metallic Buried, Partially Buried or Submerged Liquid Storage Systems", RP 02-85, which presents state-of-the-art technology for corrosion prevention on buried tanks and piping (for ordering information call 713/492-0535, ask for order department).

Be aware that while outside tank conditions may appear good, internal corrosion or excessive wear beneath the fill pipe may have taken place. Therefore, the tank should first be visually inspected on the inside. This may require the installation of a manway. Secondly, a tank should be air-pressure tested for tightness before installation in the ground. Thirdly, after installation the full system should be tested using one of the many volumetric or non-volumetric test methods.

Q. Tank owners notified their state agency about their tanks. When the land on which the tanks are buried is sold or leased to another party, is the new owner or lessee required to submit a second notification because of his/her acquisition of the property?

A. No. Only one notification is required. It is not necessary to re-notify each time the property on which tanks are buried is transferred (sold or rented) to a different individual.

Q. An underground storage tank is imbedded in concrete. Does this practice satisfy the requirements for the Interim Prohibition (RCRA Subtitle I Section 9003 (g))?

A. No. Concrete is not a non-corrosive material. Some types of concrete can be quite corrosive to steel. In addition, the concrete is not an effective barrier to any leaked substance because it is an inherently porous material which can crack.

Q. Is there one central inventory database of UST's?

A. No. State coordinating agencies are in the process of compiling a database for their respective UST programs. These are in various stages of completion. The States were given the option of using EPA's or developing their own system. To date 29 States have implemented the EPA system and 18 States are using their own. ■

REGIONAL UPDATE

This Regional Update focuses on Region IV and is written by Mike Williams, Region IV's UST Coordinator (404/347-3866)

UST Regulation in the Southeast

Region IV includes the eight Southeastern States of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee. These States have a variety of tank programs ranging from the State of Georgia which is not participating in the Federal program to the States of Florida and South Carolina which have very comprehensive programs.

Much has been written about Florida's program, including an article on the "State Underground Petroleum Response Act of 1986" which appeared in the May issue of LUSTline. Several counties in Florida also have active UST programs.

South Carolina's regulations were signed into law by the Governor on May 22, 1985. Among other things, the regulations call for the establishment of a tank permitting program effective January 1, 1986. A "permit to construct" must be obtained prior to installation of a new tank. The State Department of Health & Environmental Control (SCDHEC) spot checks installations to verify that the Department's minimum installation and tank testing standards are satisfied. The regulations also include requirements for cathodic protection, secondary containment (if tanks are to be installed within 300' of an existing water supply), and strict requirements for leak reporting and cleanup.

North Carolina is currently developing UST regulations which should be out for public comment this fall. Alabama, Mississippi and Tennessee are reviewing their existing State laws to determine what, if any, additional legislative action will be required for them to operate a UST program. For example, the State of Kentucky was able to issue a notification regulation without any additional legislative action. Because Georgia is not participating in the Federal tank program, Region IV is operating their program. The State Fire Marshal has an active program which has helped a great deal on the interim prohibition requirements of the RCRA Act.

The Atlanta Regional Office is focusing much of its attention on assisting the States in establishing pro-

grams. All States but Georgia have received FY '86 UST grants of approximately \$120,000 to assist them in their efforts.

Notification Results

The federal notification deadline of May 8, 1986 has now passed. Notification forms have been received identifying approximately 350,000 tanks regionwide; about 500,000 forms were distributed. Some States estimate they have received notifications for only 60% of the tanks, other report as much as 90%. Forms continue to arrive in all States. One State was notified of a 62 year old tank which is still in use and not leaking.

UST Issue Presentations at 2-Day Seminar

In an effort to keep States advised of the current technology of the tank industry, Region IV sponsored an Underground Storage Tank Seminar on July 23-24, 1986 in Atlanta, Georgia. All of the grant funded States in Region IV were represented, as well as a Regional UST Coordinator.

The opening presentation on Cathodic Protection was given by Kevin Garrity of Harco Corporation. Dr. Rudy White, American Petroleum Institute, volunteered API's cooperation to work with all of us. Ed Nieshoff, Owens-Corning, described the proper installation and usage of fiberglass tanks. Dr. Austin Snow with Dupont presented the use of liners as secondary containment. Reid Van Cleave with Ameron discussed FRP piping. John Sowers, Bethlehem Steel Corporation, presented the installation and usage of Buffalo Tanks. John Gammage with Metal Products Company discussed the installation and usage of Sti-P₃ Tanks. William Greer, Watkins Service Company, discussed proper installation of tanks and how to perform inspections. George Lomax, Health Petrotite, discussed testing methods. B.C. Spigner, Soil and Material Engineers, Inc., discussed the investigation and recovery procedures.

Program Flexibility

The eight Region IV States are quite distinctive in their geographic, economic, political and environmental philosophy. Program implementation methods that will work

in the fast growth areas of Florida will not work as well in the less populated States such as Mississippi or Kentucky. The Region is attempting to provide flexibility to its States, but also maintain basic guidelines. We are encouraging the States to talk to one another to find out what pitfalls they have encountered and, equally important, what successes they are having. Through communication we hope the regulations can also draw on the practical experience of the regulated community. This will, perhaps, make the regulations more practical and implementable.

Region IV is actively pursuing violations of the Interim Prohibition requirements. We are requesting assistance from the States in our pursuit of the enforcement actions. We are also encouraging local fire departments and county governments to become involved with the underground storage tank program. ■

Spill Prevention Continued

Also, the driver should know whether the tank is big enough to hold the contents of his truck.

Product transfer spills can be minimized through the use of disconnect couplings on the transfer hose. Disconnect couplings can reduce spillage from the hose at the delivery end, but product remaining in the line must still be drained. However, if the spill prevention system is such that the delivery never goes above 95% full, then the remaining product in the hose can always be drained into the tank. This would render the disconnect couplings moot.

The placement of spill traps (containment manholes) around the fill pipes helps contain spills which occur at the fill pipe. Spill traps are constructed of impervious materials which surround the fill pipe. But, product or water in the manhole must still be dealt with. Some trap designs retain the product and allow any precipitation to drain into the ground. (Runoff from gas stations, as a whole, is not addressed at all in this country. European stations must have the drainage sloped so that all liquid runoff flows through an oil/water separator.) ■

Alachua County, Florida: A Local Perspective On UST Regulation

Alachua County, Florida has become the first county in Florida to apply for State approval to enact a local underground storage tank ordinance. Florida State law preempts local governments from enacting regulations more stringent than State guidelines without State approval. Two other Florida counties which have tank ordinances, Dade and Broward (Miami and Ft. Lauderdale), were grandfathered, since their ordinances were in effect prior to the enactment of the State preemption. It is interesting to note that Florida law does not allow cities to regulate underground tanks in spite of the fact that a large number of Florida cities operate and need to protect their own municipal well fields and water supply systems.

In response to a number of serious leaks that occurred at underground storage facilities that complied with State standards for monitoring and corrosion protection, Alachua County has adopted an aggressive ordinance. Documented leak incidents include leaks from broken single-walled fiberglass pipe, a ruptured fiberglass tank, and a leaking leak-detector system. Poor installation practices and inadequate monitoring have been the primary factors in most of the serious groundwater contamination incidents in the County, rather than corrosion. Hydrogeologic conditions in the County are such that groundwater is extremely vulnerable to contamination. The feasibility of successful remedial action is often impossible or extremely limited.

Alachua County's Storage Tank Facilities Code requires secondary containment and leak detection for new underground petroleum storage tanks on a county-wide basis. Existing tank facilities are required to retrofit with secondary containment according to an eight year compliance schedule. The compliance schedule considers proximity to water supply wells, hydrogeologic setting, facility age, materials of construction, and history of leaks.

The Code also requires installation of a leak detection system consisting of tank and line leak detectors and monitoring wells. Both vadose zone and groundwater monitoring may be required depending on local conditions. In cases where shallow water table conditions do not exist, vadose zone monitoring allows early leak detection and reduces the risk

of breaching a confining layer during monitoring well installation.

Although the Florida Department of Environmental Regulation (FDER) is close to approving the ordinance, the petroleum industry is vigorously in opposition. In response to a court injunction prohibiting the County from enforcing the ordinance until final approval is obtained from the State, the County has passed a moratorium banning all construction activities associated with UST's. Variances are allowed only for repair or replacement activities associated with a tank leak and to allow the installation of leak detection equipment. The moratorium will be lifted once the ordinance receives approval by the State.

It is the county's position that secondary containment, on a county-wide basis, is the most effective method of preventing and detecting leaks from underground tanks. It is the County's opinion that the State tank regulations provide "floor" as opposed to "ceiling" standards, and that the sensitive conditions of local groundwater mandate additional controls to protect public interest. ■

Chris Bird, Alachua County Environmental Engineer 904/373-8509

TANK TALK

The American Petroleum Institute has released a new publication entitled **Safe Operation of Vacuum Trucks in Petroleum Service**. Copies of publication 2219 are available from API at 1220 L Street Northwest, Washington, D.C. 20005 (202)682-8000.

The Steel Tank Institute (STI) has introduced a new standard that puts all six piping connections in one place inside a manhole on top of the tank. Brian Donovan, Executive Vice President at STI, says this standard does away with 6 possible leaks across the top of the tank, and makes any leaks that do occur immediately visible and accessible through the manhole. Compliance with this STI '86 standard is voluntary. The change will add about 15% to a tank's purchase price. However, Donovan claims that installation cost will be cut by 10%.

Tank Talk Continued

The Pennsylvania Department of Environmental Resources (DER) has released a report, **Investigations of Releases from Underground Storage Systems . . . A One Year Survey**. This report summarizes and presents a statistical evaluation of 173 UST release investigations conducted by the DER from September, 1984, through August, 1985.

Among other things, the study shows that nearly all the released material was petroleum product from uncathodically protected underground storage systems. Half the piping releases occurred in the first 10 years after installation in contrast to buried tanks with 53% of their releases occurring after 15 years. Corrosion was the most significant cause of release. While inventory records were maintained at 69% of the sources, only a small percentage of leaks were discovered through this means. However, notification resulted from 92% of the release sites that were precision tested. Complaints and notifications requiring investigation tended to support the fact that pollution dispersion is directly related to groundwater mobility.

For copies of PaDER Publication, number 210, write to Charles Swokel, Bureau of Water Quality Management, PA Dept. of Environmental Resources, P.O. Box 2063, Harrisburg, PA 17120.

As promised in the last issue of LUSTline, Marcel Moreau has written a summary report, **Some European Perspectives on Prevention of Leaks From Underground Petroleum Storage Systems**. The report is available (no charge) by writing Marcel at the Board of Underground Oil Storage Tank Installers, Maine DEP, Station #17, Augusta, ME 04333. Sometime soon Marcel will release a full report and a videotape of his European UST Survey slide show . . . for a charge. For more information contact Marcel at (207)289-2651.

The Buffalo Tank Division of Bethlehem Steel has been purchased by the newly formed Buffalo Tank Corporation. Buffalo Tank, which markets Buffhide tanks, also markets an FRP clad tank which has been associated with Buffalo Tank's BT10 coating. This coating will now be dropped and replaced with the sti-P3 coating.

Tank Upgrading Programs Underway For Many Multi-Facility Tank Owners

What do the U.S. Postal Service (USPS), The Hertz Corporation and the Army Corps of Engineers have in common? UST upgrading programs with double-walled tank specifications. Besides many of the major oil companies, many other multi-facility tank owners are moving ahead with aggressive tank upgrading programs. While single-walled tanks with leak detection are the more common UST systems replacement practices, a surprising number of programs specify double-walled tanks with continuous monitoring. Many companies have developed unique approaches for analyzing and upgrading their tank systems. Some of these efforts may ultimately lend more insight toward leak prevention, in general.

The USPS tank systems guidelines, issued June 1986, specify steel or fiberglass 360° double-walled tanks designed to have minimum 30-year life. They state that the "annular or interstitial space must be monitored by a positive means to detect any breakdown in the inner and/or outer tank walls by either a vacuum system, positive displacement (using a liquid such as propylene glycol), or a positive pressure system." The list of requirements goes on and includes stringent tank testing instructions, and specifications for piping (double-walled) and installation... effective immediately.

The Army Corps also requires, at a minimum, double-walled tanks and piping with leak detection systems. Steel tanks are to be cathodically protected. The Corps initiated its upgrade program in FY-86. All installations in FY-87 will be double-walled with cathodic protection.

In the past year, The Hertz Corporation began replacing its steel UST's with fiberglass double-walled tanks, leak detection systems, and automated inventory monitoring systems. Priority has been given to the replacement of the 15 to 20 year old tanks first.

The Amoco Oil Company has taken a slightly different tank upgrading approach from some of the other majors. They chose retrofitting rather than replacement as their primary method of upgrading a predominantly conventional steel tank system. According to Dennis Strock, coordinator for Amoco's underground equipment technical matters, internal lining and sacrificial anode corrosion protection became the back-

bone of the program. (Whenever local regulations preclude lining, the tanks are replaced.)

Generally they have replaced tanks under 4,000 gallons and waste oil and heating oil tanks. When installing new tanks, Amoco uses, predominantly, pre-engineered anode protected steel tanks. Of course, all tanks are tested for leaks before they are retrofitted.

Amoco's underground lines have been handled similarly to the tanks. If tanks are replaced, so are the lines. All steel lines are equipped with anodes. If they are pressurized system lines, they are also equipped with pressure actuated leak detectors. Both tanks and piping are electrically isolated from each other and surrounding currents.

To avoid possible product releases during delivery, Amoco has developed a 40 gallon capacity "overflow-spill unit", which automatically returns any intercepted product to the UST, either immediately or as space becomes available.

Finally, the company is installing a set of at least 4 groundwater observation wells around each location's tank field whenever the water table is within 50 feet of the surface.

Strock explains that this program is directed toward minimizing risks, "it is not a replacement program, per se." He stresses, "maintaining and monitoring the system is the key."

On The Chemical Tank Front

Many chemical tanks are above ground already and are not currently regulated under Subtitle I of RCRA. Many of these above ground tanks are regulated under Subtitle C of RCRA. Some of the large chemical manufacturers such as Dow Chemical have developed strategies for avoiding underground storage wherever it is safe and practical to do so. Dow's approach is to remove existing UST's where it is safe and practical, then consolidate to reduce numbers of tanks or replace with above ground tanks. Over the past two years they have removed many tanks that would have been regulated.

IBM, which has a large number of chemical storage tanks, established an environmental protection program in 1979 to prevent the release of chemicals, fuels and waste

materials into the environment. An important element of this program has been the placement of new liquid chemical supply systems above ground or in accessible enclosures. In both situations, the liquid handling system has secondary containment. This approach allows for more effective inspection and early detection of problems, and facilitates maintenance. On-line leak detection devices are also typically provided for portions of those systems that are not readily accessible.

As a result of this on-going program, most of IBM's newer liquid chemical supply systems are located above ground. A high percentage of both the indoor and outdoor piping is also located overhead or placed within trenches that have chemical resistant linings.

EPA is currently studying chemical storage. Clearly, the varieties of chemicals, their uses and chemical processing techniques make regulation more complicated.■

NEIWPC has a growing loan library of UST public information and technical training materials.

Let us know of any new materials (written or audio visual) we can add to this collection.

(617) 367-8522

Clarification of Drawings in PEI Tank Installation Manual

The Petroleum Equipment Institute manual, **Recommended Practices for Installation of Underground Liquid Storage Systems (PEI/RP100-86)**, has received considerable acclaim for its authoritative guidance on UST installation. The NFPA Flammable Liquids Committee has tentatively accepted the document for inclusion by reference in the next edition of NFPA Code 30; the Southern Building Code's Standard Fire Prevention Code has cited the book by reference; the Petroleum Marketers of Iowa have recommended that the manual be adopted by the State's Water, Air and Waste Management Agency; and the State of Maine uses the document as basic reference for its new tank installer licensing program.

In its September 11, 1986 issue of the **TULSALETTER**, PEI pointed out two schematic drawings in the book which might be misleading. These drawings will be altered when a revised edition of the manual is issued. Meanwhile, you may want to make note of these points.

Preinstallation Tank Testing—Section 2.5 describes procedures for air-testing of tanks prior to installation. The final paragraph of the section says this: "(e) A pressure relief device is recommended for over-presurization. The device should have sufficient capacity to relieve the total output of the air source and at a pressure of not more than six psig."

There is no problem with that statement. However, Figure 6 does not indicate the presence of the recommended pressure relief valve described in paragraph (e).

Impressed Current Systems—Section 9.6 of the manual describes procedures for installation of impressed current systems where metal tanks are to be cathodically protected. Figure 36, which accompanies this section, is intended to show the general scheme of an impressed current system. In the diagram, a connecting wire leads from the rectifier to the tank which is to be protected. The positioning of this connection in the drawing, however, implies that the connection should be made to the positive side of the rectifier. In fact, however, the connection should be made to the negative side. ■

Office of Underground Storage Tanks General Information Materials

Code No. Publication Name

UST 15	Draft Development Plan (March 1985)
UST 11	Draft Model Legislation On USTs
UST 5	EPA Form For Notification (EPA Form 7530-1(11-85))
UST 3	Federal Register, Nov. 8, 1985, Final Rule on Notification Requirements for Owners of Underground Storage Tanks
UST 4	Correction Sheet for Federal Register of Nov. 8, 1985
UST 12	Guidance Document for Installing UST's under Interim Prohibition
UST 14	Handbook for Local Officials on UST's (National League of Cities)
UST 7	Hazardous Substance List
UST 17	Interpretive Rule on Interim Prohibition (Federal Register 6/4/86)
UST 10	LUSTline Bulletin 3, May 86 (#2 is still available)
UST 8	Leaking Underground Storage Tanks Containing Motor Fuels: A Chemical Advisory
UST 6	List of Agencies Designated to Receive Notifications
UST 16	List of UST Definitions and Exemptions (OSWER Dir. 9610.3)
UST 9	More About Leaking Underground Storage Tanks
UST 2	Notification Requirements for Owners of Underground Storage Tanks
UST 18A	OTS Development Study (for National Survey)
UST 18B	OTS Report - Volume II - Appendices
UST 18	OTS Report - Volume I - Underground Motor Fuel Storage Tanks: A National Survey.
UST 21	Subtitle I.
UST 22	Summary of State Reports on Releases from Underground Storage Tanks (aka: State Release Incident Survey)
UST 1	Underground Storage Tanks (UST): The New Federal Law
UST 20	Underground Storage Tanks: A Fire Dept Guide to EPA Requirements
UST 19	Underground Storage Tanks: An Implementation Handbook
UST 13	Underground Tank Leak Detection Methods: A State-of-the-Art Review

For copies, write Office of Underground Storage Tanks, U.S. EPA, WH562A Sub-basement 401 M. St. SW Washington, D.C. 20460

New LUST Videos

Leaking Underground Storage Tanks, Little Time Bombs Ticking—a 25 minute (VHS format) video produced by the State of Connecticut. Discusses UST problems, solutions and regulatory controls. Available for purchase, \$16.00, or rental, \$9.00 for 14 day period. Postage and handling is \$4.00 for purchases. Make check payable to DEP Publications, Local Assistance/LUST Video, 165 Capitol Ave., Hartford, CT 06106.

Effective Management of Underground Petroleum Storage Systems—a 27 minute (1/2" VHS, 3/4", or Beta formats) presented by the American Petroleum Institute. Hands-on information is presented on release prevention, detection, investigation and corrective action. Available for purchase from API Publications Dept., 1220 L. St., N.W., Washington, D.C. 20005. The tape is available for rental from the Petroleum Marketing Education Foundation, \$35.00 for 3 days, at 101 North Alfred St., Suite 200, Alexandria, VA 22314 (703)684-0000.

Volatile Organic Contamination Monitoring and Cleanup Techniques—Appropriate Technology for Groundwater Protection—a series of 6 two-hour (1/2" VHS) tapes of a May 1986 EPA-NEIWPCC UST/Groundwater Protection Symposium. Presentations are on soil gas analysis and on-site cleanup and remediation technology, plus comments and presentations by a panel of internationally recognized experts.

Videotaping was funded by a grant from EPA so that this state-of-the-art site assessment and cleanup technology could be shared with a broader audience of state and federal staff, consultants, UST owners, water supply utilities, etc.

Tapes are available for loan, both separately and as a set (at a prepaid charge of \$5.00 per set) from the New England Wastewater Institute, 2 Fort Rd., South Portland, ME 04106 (202)767-2649. The show can be purchased at a prepaid cost of \$250.00 (payable to NEIWPCC) from the NEIWPCC, 85 Merimac St., Boston, MA 02114 (617)367-8522.

A detailed log of the videotape contents is available from both NERWI and NEIWPCC.

Here Lies The Problem, Leaking Underground Storage Systems—a 25 minute slide/tape show produced in 1985 by the NEIWPCC. Explains the LUST problem, why tanks and piping leak, the costs of inaction, and the range of leak prevention alternatives. Available for loan (at a prepaid charge of \$5.00) or for purchase (prepaid cost of \$75.00). See the above video ad for ordering details. Free copies of a companion brochure are also available from NERWI or NEIWPCC.

The "Interim Prohibition: Guidance For Design & Installation Of Underground Storage Tanks" Manual Now Available

The EPA OUST Office has published the *Interim Prohibition: Guidance for Design & Installation of Underground Storage Tanks* manual to provide guidance for acceptable designs and installation practices for UST's. Tank owners and operators must comply with the Interim Prohibition, and can now do so more easily by installing the types of tanks and using the specified methods described in the document.

Besides sending the manual to all EPA Regional and State UST offices, EPA has mailed copies to 10,000 large, professional fire departments throughout the country. The Agency is also sending a brochure describing the document to 20,000 small, volunteer fire departments.

The document addresses corrosion protection, secondary containment systems, installation, compatibility, and tank lining. Appendices include a list of recommended publications and a list of regulated substances.

Copies are available from the Office of Underground Storage Tanks, U.S. EPA, WH562A, 401 M St. SW, Washington, D.C. 20460, Attention "Informatics"

If Lustline Is Not Covering UST Issues You Need To Know About, It's Your Fault!

We are pleased to report that EPA has extended LUSTline's tenure for four more issues. We appreciate the many words of encouragement we have received from our readers. However, we also wish to remind you that communication is a two way street. We use our eyes, ears, and crystal ball as much as possible in deciding what to write about, but we need your suggestions. This is

your newsletter. Hello, out there in Montana! How are things in Sacramento? Do tanks leak in Cincinnati?

You can write to Ellen Frye, LUSTline Editor, at NEIWPCC, 85 Merrimac St., Boston, MA 02114, or call (617)367-8522. If you no longer wish to receive LUSTline, please write and ask us to drop your name. Thanks! ■

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