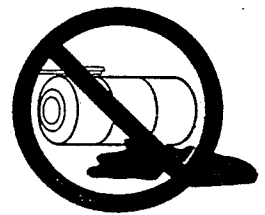


L.U.S.T. LINE



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

Hey, You With The Tank . . . Comply Or Cry!



*Did you notify the State?
Never mind, never mind!
Did you test your tankies yet?
Never mind, never mind!
Have you kept yer records straight?
Oops! Afraid that it's too late,
Got a leak,
Got a fine,
Cleanup tab,
Never mind?*



A Greece, New York tank owner slipped up—he failed to register his tanks properly, test his tanks, and keep proper inventory records—all violations of State petroleum storage regulations which have been law for two years. The State Department of Environmental Conservation (DEC) zeroed in on this situation when the operator reported a pronounced inventory of water in one of his gasoline tanks.

The down side of this story is that the owner faces criminal charges with a possible 527 misdemeanor counts (reflecting the number of days he was in violation of State law), and a one year jail sentence. Each count carries a fine that could range from \$2,500 to \$25,000.

Also, three out of the four tanks at the station had leaked. "One tank had several holes the size of golf balls," says Bruce Finster, Chief of the Spill Response Unit of the DEC. "The tanks were losing

something like 500 to 700 gallons of gasoline per week." Gasoline was found pooled on top of the groundwater at about 8 feet down. Using monitoring wells, the plume was found to be about three feet deep at its deepest point and spread about 75 feet from the tank.

"Gasoline recovery has been a big job," says Finster. "So far, we have recovered over 1,700 gallons of gasoline, and the cleanup costs, which are being shared by the station owner and operator, have come close to \$75,000."

The up side of this tale is that the geology of the area prevented a bad situation from being down right dangerous. "The area is heavily populated," Finster says, "and serious safety problems could have arisen if gasoline had accumulated in sewer lines, allowing vapors to spread into homes or businesses, where we would be concerned about an explosion hazard. Fortunately, the plume did not move in the direction of these lines." Also,

because area residents use public water, not wells, there has been no threat to public health.

The DEC would like to resolve the whole matter administratively using consent orders, whereby both parties agree to the terms of the order, rather than go the route of criminal charges. Why? Finster says the most important part of any release is to work out a way to get the mess cleaned up. The owner of the Greece station owns three other facilities with petroleum tanks, all of which are unregistered and untested. These facilities could also have leaks.

"The administrative approach," says Finster, "can be a more effective way of getting the owner to agree to a compliance schedule for all facilities and to agree to pay a civil penalties fine, which is not as bad as what criminal laws would allow. If an owner refuses to negotiate administratively, then the State can resort to criminal charges and enormous fines."

Enforcing Softly, With A Big Stick

EPA and the states are very serious about enforcement. Because of the large tank population nationwide (1.7 million or more), the primary responsibility for enforcing UST regulations lies with state and local programs. EPA is concentrating on building the effectiveness of these programs. Many states plan to step up their enforcement efforts through inspections.

continued on page 2

Comply or Cry Continued

As state programs evolve and staffing capabilities increase, tank owners will not necessarily have to be up to their ears in oil to become a non-compliance statistic.

States are not eager to drag non-compliers into court, but they will if necessary. The whole process of using the big stick is time consuming and, shall we say, "uncongenial," compared to the more, shall we say, "pragmatic" cooperative approach. In fact, the buzz words in UST regulation are "voluntary compliance," *s'il vous plait*. Save the big stick for the guy who won't budge.

"In this State, there is a diminishing population of those who refuse to update their business practices to comply with regulatory requirements," says Karl Souder, Manager of New Mexico's UST program. "With a few prominent exceptions, most major companies involved in retailing fuels and other large tank owners are now in a mode of voluntary compliance. We stay in close and frequent contact with these companies concerning evolving regulations. The big problem is those owners of just a few tanks who are not well tied into the information flow—who are not aware of their obligations."

Nationally, there remains a vast collection of tank owners who are not in compliance with federal or

state UST regs, who continue to—who knows—hold out and play "catch me if you can," or who function, perhaps, in a sphere of oblivion far from the rigmarole of societal purpose. Many tank owners still don't understand the importance of testing their tanks and the possible consequences of not complying with UST regulations. The owner and operator in Greece, New York could not have imagined that things would turn out this way—and it could have been much worse if anyone had been hurt or killed or if the water supplies had been damaged.

Souder feels that once more inspectors get into the field, his State will gain greater compliance by educating tank owners on registration, inspection and technical requirements. "Our goal is to inspect every facility at least once a year," says Souder. "If we explain things to owners and operators, they are more apt to comply. Obviously, if they continue to ignore their responsibilities we will seek penalties."

Also, one man's misery can be used to advantage as another man's message. Bruce Finster says after news of the Greece, New York incident got out, there was a tremendous upsurge of tank registration and voluntary compliance with regulations. Many states recognize that press coverage of state actions and court cases helps stimulate compliance. If people know that the state will take action and can see it happening, regulatory agencies find that the number of people who submit tank notifications or who report releases tends to increase.

New Tank Ethic Emerging

On the other hand, thousands of tank owners across the country have voluntarily complied with state and federal notification requirements. Thousands have taken measures to test their tanks, upgrade their facilities, and install tanks protected from corrosion and structural failure. In fact, in the few short years since Congress mandated EPA to regulate UST's, a new and enlightened UST ethic has emerged nationwide within the petroleum storage community.

For example, a recent New York DEC Water Bulletin gave the following update on some of the effects of UST regulation in that State:

"Larger companies experienced in petroleum handling understand

the need for updating their practices and the benefits to be derived by preventing leaks and spills.

"For example, AT&T had 136 USTs at 74 sites in the State. Ninety percent of this storage was No. 2 fuel oil used to run turbines. As a result of the Petroleum Bulk Storage (PBS) regulations, 55 were replaced with new double-walled fiberglass clad steel tanks (NYS requires secondary containment), 30 were tested and passed, 14 closed in-place, and 37 more permanently closed by removal. The number of UST's owned decreased from 136 to 85, and storage capacity was cut in half, from 1.2 million gallons to .6 million gallons.

"While DEC regulations have been successful in eliminating some leaking tanks during the first two years, most of the facilities brought into compliance have been those owned by major businesses. Much work needs to be done to inform smaller businesses of their responsibilities. The next step the DEC will take is to increase field inspections and enforcement where voluntary compliance has not been accomplished." ■

A Note from the Editor: We strongly encourage other states and local UST regulators to let us in on some of your war stories, successes and frustrations.

Consent Orders continued

more streamlined cleanup authorities. These new tools encourage early involvement, provide for quicker cleanup, and elicit a quicker response from the potential responsible party.

One example—in Maryland, the State can issue a "demand letter" putting all potential responsible parties (PRP's) on notice that the State is going ahead with cleanup. The letter lists the actions the State will take and gives the PRP the option of doing the work or not . . . and settling accounts later. The demand letter approach recognizes the PRP's right to due process under the law, but provides a way for remediation to proceed in a timely manner.

In California, an Administrative Civil Liability "damage assessment" can be imposed on the PRP. The letter specifies an amount the violator can pay for the State to contract for the cleanup of a site. The PRP still has the right to due process, the time consuming regional board hearing, but he can waive the hearing and pay the damage assessment, which is used to pay for the cleanup. ■

LUSTLINE

Editor, Ellen Frye

Prepared by the NEIWPC with a grant (#CT-901555-01-0) from the U.S. Environmental Protection Agency

Susan Mann, EPA Project Officer
Jennie Bridge, NEIWPC Project Officer

LUSTLine is issued as a communication service for the Subtitle I RCRA Hazardous & Solid Waste Amendments rule promulgation process. This publication may be copied.

Please give credit to the NEIWPC. The New England Interstate Water Pollution Control Commission was established by an Act of Congress in 1947 and remains the oldest agency in the Northeast 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.

NEIWPC

85 Merrimac Street, Boston, MA 02114

Telephone: (617)367-8522

Layout/Typesetting:

LMY Studio, Inc., Winchester MA

First EPA Consent Orders Issued

Within the first three months of 1988, EPA signed Consent Orders under which Amoco, Chevron and Exxon have agreed to cleanup groundwater contamination at three gasoline station sites in Jacksonville, Maryland. Chevron has also agreed to investigate the extent of groundwater contamination at a service station in Pineville, West Virginia. These orders were the first in the nation issued by EPA under a new authority (the 1986 RCRA Amendments). They essentially expedite the process of getting potential responsible parties to take cleanup action as promptly as possible . . . without necessarily admitting to any wrongdoing.

EPA does not expect to use this authority very often since they expect enforcement to be carried out, first and foremost, at the state level. In fact, in the case of the Pineville and Jacksonville Consent Order agreements, EPA will turn over some enforcement authority to the States through their LUST Trust Fund programs.

The Pineville, West Virginia agreement, the very first of these agreements, states that Chevron will perform groundwater sampling and monitoring, soil sampling, and aquifer characterization testing; and will conduct air monitoring inside a single family dwelling near the site. Chevron has already completed a significant portion of this work. The

need for any additional work will be assessed after Chevron submits a report of its findings to EPA.

In this case, Chevron owned three large UST's at the Pineville site in the 1970s, although they neither owned nor operated the station itself. In 1979, Chevron removed one of the tanks and filled the other two with an inert material. They then installed three new 4,000 gallon steel UST's at the facility. Since 1981 Chevron has not owned any tanks at the facility.

In early 1987, air sampling in a nearby residence indicated the presence of hydrocarbons at near explosive levels. Other sampling indicated the presence of gasoline in the soil and groundwater in the immediate area. Because of the obvious danger posed by the situation, State authorities requested EPA assistance.

At the Jacksonville, Maryland site, Exxon, Amoco, and Chevron have already completed an initial joint site assessment and a report of the findings. Based on these results, the terms of the Consent Orders are that the companies will continue groundwater monitoring and sampling efforts and pump and treat the groundwater to eliminate contaminants. The Baltimore County Health Department has ordered several nearby residents not to drink from their wells because of groundwater contamination.

States Crack Down on Cleanup

In 1984, when the nation's attention turned to the millions of buried USTs that could be leakers, these potential leakers were referred to as "time bombs"—corroding steel, just old enough to release product into the environment . . . at any moment, if not sooner.

Well, state and local inspectors across America can now attest to the proof of that prophecy. As one New York State Department of Environmental Conservation UST regulator put it, "We're in a spill response 'catch 22.' We hire more inspectors, but the spills multiply faster than our staff . . . this year we had 12,000 spills." (While not all spills are from UST's, a majority are.)

States are very busy responding to tank releases and trying to assign cleanup priorities based, primarily, on people impacts—threat to public health and safety. Now that state UST regulations and notification programs are taking shape, many states are beginning to "beefup" cleanup enforcement efforts. Release cleanup, however, has traditionally been a frustration—trying to get the responsible party to cleanup and abate as quickly as possible without resorting to tedious legal proceedings.

But EPA and state agencies are acquiring new enforcement tools such as administrative fines and

continued on page 2

A Financial Responsibility Breather?

The predominant comments on EPA's proposed financial responsibility (FR) requirements were that many many tank owners need more time to find adequate insurance coverage at an affordable price. Many of those who commented simply felt it will not be feasible to comply with the regulations 90 days after they are published. More time is needed to develop financial assurance programs, either through private insurance, some kind of state sponsored insurance program, a state fund, or . . . heaven-knows-what.

So, after considerable deliberation about what EPA can and cannot do under the law, the Agency issued a Supplemental Notice on March 31 asking for public comments on a phase-in compliance approach.

"We have thought a lot about the most sensible way of providing more time to the people who need

more time to develop financial assurance mechanisms," says Sammy Ng of EPA's OUST. "A phase-in approach could allow different groups of tank owners to come in to compliance at different times after the rule is promulgated."

EPA gave an example in the Notice of how a phased-in approach could work. The example uses the number of tanks owned as one possible dividing line for different groups. Owners of between 50 and 1,499 tanks might be required to comply 6 months after the effective date of the regulations, while owners of 1,500 or more tanks would not be given additional time, since they would most likely be owned by larger corporations with better insurance resources.

"Those are only examples," Ng says, "we are asking for comments on how groups should be divided;

by tank numbers? risk? industry groups? We are also asking for comment on the time frame for the phase-in; 6 months? longer? shorter? Then we will use the information from the comments to make up our final rule."

While EPA is now considering the possibility of this phase-in approach, the Agency may still determine that it just won't work, or would not be appropriate. To consider a phase-in approach, however, EPA needs comments (the comment period ended on May 2), since this approach was never discussed in the proposed regulations. But, some sort of breather does seem promising.

To add "fuel to the fire," a Congressional hearing and a Government Accounting Office (GAO) report both reached similar conclusions: that a delay in the effective date of the FR regulations might be a sensible recourse. ■

OUST Reaches Out

At last, what you have all been waiting for! A national conference on underground storage tanks, for states. OUST will host a 2½-day workshop for state prevention and cleanup staff, the regions, and invited participants, in Santa Fe, New Mexico, November 15-17. The focus will be on state program improvement.

The conference will help states develop a national peer network of other state folk who deal with similar UST problems and issues. Participants will share their expertise and experiences in a variety of workgroups and panel discussions.

Anyone with questions, comments, or ideas concerning this event, please contact Susan Mann, OUST, 202/382-7894.

Lust Trust Fund Update

By the end of FY'88 (9/30/88), EPA will have awarded 43 states and 3 territories \$50 million from the LUST Trust Fund for cleaning up petroleum releases. The monies are managed under cooperative agreement with EPA. The President's budget for FY'88 currently proposes \$40.5 million in Trust Fund money for states.

OUST recently issued the Guidance, which addresses the concerns of many states, that applies to FY'89 cooperative agreements. These issues include: cost recovery, solvency, allowable costs, use of the Fund at government facilities, and the link between Trust money and state progress in developing UST prevention programs and applying for state program approval.

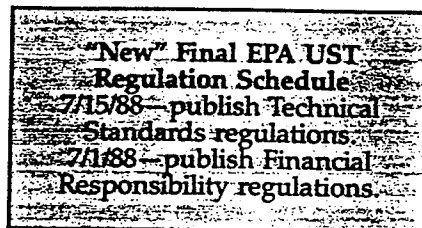
EPA's regional offices will continue to negotiate, award, and oversee the cooperative agreements. Contact Regional Coordinators for FY'89 LUST Trust Fund Guidance.

State Program Approval "Test Runs"

To facilitate the state program approval process and evaluate the accompanying guidance, OUST conducted "test runs" with each regional office using the draft State Program Approval Handbook. State officials provided positive feedback which will be very helpful in revising the draft of the Handbook. The revised version of the Handbook will be ready when the final rules are published.

Test teams found that states are generally interested in obtaining program approval. States felt that

the test project was useful in alerting them to possible problems in the future. While many are concerned about financial responsibility requirements, they are not sure exactly what to be concerned about until they see the regulations. States were quite anxious to know how soon the federal regulations would be promulgated so they can begin supplementing their own regulations in a timely manner.



Transition Strategy

The EPA "Transition Strategy," distributed to the regions in April, is designed to provide policy guidance to the regions and states. It identifies appropriate activities for each to undertake during the transition period between the effective date of the federal regulations and the time state programs are authorized to operate "in lieu of" the federal program. Its thesis is that from the start, and to the extent possible *the states, as franchisees, must be the implementing agency.* Therefore, federal activities should focus on assisting and encouraging the development of state programs. EPA is not expecting the regions to carry out direct federal implementation of the UST regulations in states with emerging programs.

The Transition Strategy covers FY 1989 and 1990. In FY 1990, OUST will develop an updated implementation strategy which will take into account, among other things, the status of state program applications and approvals.

FY'89 State UST Program Grant Guidance Issued

The final FY'89 State UST Program Grant Guidance was issued on April 1st (no April fool's joke). The total amount of awards has increased from \$6.58 million in FY'88 to \$9 million in FY'89. The allocations to the regions are based on \$162.5 thousand per state. This is up from \$125 thousand in FY'88. The priority tasks under the FY'89 grants have been modified to include (in priority order): state program development, program approval application, outreach

efforts to promote compliance, and compliance monitoring and enforcement.

Environmental Task Force Receives EPA Grant

The Environmental Task Force (ETF), a public interest group for various environmental organizations, has received a grant from EPA to help them educate and alert their constituency on UST issues. One task already completed is an ETF mailing of 15,000 copies of *Here Lies the Problem . . .* (an ETR update of NEIWPCC's 1985 brochure) to state environmental groups. To become part of this ETF network, or for more information contact:

Safe Tank Campaign
1525 New Hampshire Ave., N.W.
Washington, D.C. 20036
202/745-4870

What's New . . . In Publications?

Cleanup of Releases from Petroleum UST's: Selected Technologies. This report (available in early June) will serve as a reference document or engineering manual for local and state personnel who must make decisions on the most appropriate corrective actions to use at a site that has been contaminated by leaking USTs. Copies may be obtained by writing: the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, or by calling 202/738-3238. Ask for stock #055-000-00272-0.

OUST has published a list of 31 titles containing data in support of the UST Final Rule. Copies can be viewed at the Underground Storage Tank Docket at EPA Headquarters, Washington, D.C.

Three brief documents about the Edison study of tank tightness testing methods are now available from U.S. EPA's Office of Underground Storage Tanks. **An Approach to Evaluating Leak Detection Methods in Underground Storage Tanks** (publication no. 61) describes the methodology used in the Edison study. A second paper, **U.S. EPA Evaluation of Volumetric UST Leak Detection Methods** (publication no. 62), describes the data obtained in initial tests at Edison and concludes that tank testing is theoretically capable of detecting 0.05 gallon per hour

leaks, 99 percent of the time. Recent Edison results are contained in a memorandum from John Farlow (Edison Lab) describing actual performance of commercially available tank testing methods (publication no. 60). These results do not provide information about how specific methods performed in the evaluation, but do indicate the potential range of tank testing performance. The memo concludes that "Ten percent of the methods tested already meet the 0.1 gallon per hour standard in the proposed regulation. Thirty percent can meet the same standard by adopting protocol changes, and 60 percent of the methods can meet the same standard . . . by adopting both the suggested protocol and the equipment changes."

Copies of these documents can be obtained by requesting publication numbers given above from: U.S. EPA, Office of Underground Storage Tanks, P.O. Box 6044, Rockville, MD 20850.

Edison's final report will be released in July. No additional results will be available until that time. Sources of availability and ordering information for the final report will be provided in the next L.U.S.T.Line.

To obtain a list of available publications from OUST, Please request publication #25 from the U.S. EPA OUST, P.O. Box 6044, Rockville, MD 20850.

Another possible source of UST information is the US EPA Center for Environmental Research Information, 26 W. Martin Luther King Dr., Cincinnati, OH 45268.

UST Videos . . . Celestial Happenings

On February 24, the National Fire Protection Association broadcast two UST installation videos by satellite to approximately 1,500 fire stations across the country. These receiving stations had the opportunity to make copies of the tapes for other fire stations in their area.

The first video, *A Question of When: Tank Installation for Inspectors*, is a 36-minute overview of the most important steps in proper tank and pipe installation with a checklist of key items that will guard against future leaks.

The other video, *In Your Own Backyard*, is a shortened version of the inspector's installation video. This is for tank owners and opera-

tors, and gives an overview of what should be expected or required from installation contractors.

Copies of these videos (1/2" VHS) are available for \$22.85 ppd. from NFPA, Battery March Park, Quincy, MA 02269, attention Jim Smalley.

The New England Interstate Water Pollution Control Commission (NEIWPCC) will debut another EPA funded video, *Tank Closure Without Tears: An Inspector's Safety Guide*, along with a repeat performance of the NFPA videos, by satellite broadcast on Wednesday, May 25. The NEIWPCC video focuses on fire, explosion and other safety considerations associated with tank closure. While the video is for UST inspectors, tank removal contractors will also benefit from this discourse on safety. NEIWPCC has also prepared an illustrated companion booklet to the video. Copies of video and booklet are available for \$25.00 ppd. from NEIWPCC, 85 Merrimac St., Boston, MA 02114. Make checks payable to NEIWPCC. ■

L.U.S.T. LETTERS

Here are some thoughts from three of our readers on the Bulletin #7 article, An Emphasis On LUP's—The Weak Spots in Piping, by Marcel Moreau.

Soap and Water Not Always the Best Test

Nick Hartsook, Hartsook Equipment & Pump Service, Cheyenne, Wyoming, comments on soap testing of new piping installations. He points out that in his geographic area there is a considerable amount of wind. He has found situations where leaks have been undetected with soap and water, but when a chemical specifically designed for leak location has been used, the leaks have become very apparent. He recommends the use of this kind of chemical in lieu of soap and water.

Unions, Swing Joints, and Other Sources of Piping Leaks

Charles Frey, Sr., Highland Tank & Mfg. Co., Manheim, Pennsylvania writes:

Unions and Other Piping Connections: The forces acting on underground piping come not only from pressure inside the pipe, but also

EPA's Reg-In-A-Box

OUST believes that the better people understand our regulations, the more likely they are to comply with them. However, legal or technical language used in regulations is often unfamiliar to those who are expected to comply. Complicated or distant references to other sections of the regulations may also handicap the reader. And, unlike many other books, there's no key-word index in the back where you can look up the page references for the particular thing that you want to find. But, OUST has found a new way to help readers of our forthcoming regulations to overcome these barriers to understanding—personal computer software (PC clones and Macintosh) we're calling *Reg-In-A-Box*.

Reg-In-A-Box has the full text of our tank technical, corrective action and financial responsibility regulations on a disk. On a *Reg-In-A-Box* screen you can see the text of the regulations, plus an on-screen "button" marked "Explain." When you press this button a plain-English explanation of the text pops up on your screen, then goes away when you de-select it. Cross-references are bold-faced and when you select one, the cross-reference pops up on your screen just like the plain-English does. *Reg-In-A-Box* also has lists of key words—select one and it zooms you right to the part of the regulation where this word is found. And if you know the part of the tank system you're interested in, but can't remember what it's called, *Reg-In-A-Box* provides a schematic diagram of a tank: select the point of interest on the tank, and you're zoomed to the corresponding text of our regulation.

Recently, OUST demonstrated a working version of *Reg-In-A-Box*, which contained the text of our April 17, 1987 proposed regulations, at EPA's Washington Information Center open house. We will be testing this with a cross-section of users in May and June. After the Final Rule is published, OUST will plug it into *Reg-In-A-Box* and make it available to the regulated community. ■

For more information contact Bill Foskett at 202/382-7870.

continued on page 6

Breaking With Tradition: New Risk Retention Group Could be Insurance Beacon for Other Trade Groups

It is sometimes risky to break with tradition, especially when you are trying to establish one of the first risk retention groups in the country. But Max Clay, President of the Planning Corporation in Reston, Virginia, did the deed. He brought together a group of petroleum marketers and established the Petroleum Marketers Mutual Insurance Company, PETROMARK, a Risk Retention Group licensed and domiciled in Tennessee, but operating in all states. PETROMARK is dedicated exclusively to providing pollution liability insurance to petroleum marketers.

The existence of this Risk Retention Group could be inspiration to other tank owning groups (car dealerships, truck fleets, etc.) in search of risk underwriting mechanisms.

"The fact that PETROMARK successfully got off the ground shows that this can be done," says Sammy Ng of EPA's Office of Underground Storage Tanks. "It shows that USTs are an insurable risk . . . that the situation is not as bleak as everyone thought. The Risk Retention Group can provide a new market for pollution liability insurance. States could even tie in with these groups to pick up part of the coverage."

PETROMARK is owned exclusively by its policyholders and is operated by a Board of Directors consisting of petroleum marketers. Any "profit" made by the Group must be used *solely* for the benefit of policy holders. The capital contribution required from each participating firm is a payment equal to the initial annual premium.

Marketers purchasing insurance from the Group will incur no liability beyond what they can incur

when buying from any other insurance company (non-assessable). The Company cannot go back and require additional capital from insureds. Currently, PETROMARK is writing limits of \$500,000 per occurrence, \$1,000,000 annual aggregate. Available limits will increase as additional capital is collected.

Filling In Where Tradition Faltered

As the insurance industry applied a tighter and tighter squeeze on the insurance market, Congress responded to entreaties from the business community and passed the **Liability Risk Retention Act of 1986**. The Act essentially enables firms in a specific industry to form an insurance company in one state which can then operate in all states by designating itself a Risk Retention Group. The insurance industry has traditionally been regulated state by state. Licensing requirements for each state had to be satisfied before business could be written in that state.

This state by state business was extremely tedious and unwieldy. Thus, many entities such as trade associations and large corporations would establish captive insurance companies and domicile them "off-shore" in places like Bermuda, Barbados, or the Cayman Islands. These captives would then obtain a licensed domestic "fronting" company to issue policies inside the U.S. This was costly since the fronting company would charge a substantial fee without taking any of the risk.

The Liability Risk Retention Act eliminates the need to domicile the

insurance company off-shore and presents an opportunity for industry groups to develop programs which are free of cyclical availability and pricing swings so characteristic of standard insurance.

Currently Federated Insurance, the Pollution Liability Insurance Association (PLIA), and now PETROMARK are the only companies writing pollution liability insurance for USTs. Federated, the biggest insurer, is not licensed in all 50 states and insureds must buy all of their insurance from them. PLIA is a reinsurance company with some member companies writing pollution liability insurance policies.

Prior to organizing PETROMARK, Planning Corporation had been reinsured by PLIA and had been their primary provider of pollution liability insurance. Because of this experience, the Planning Corporation was able to present the Tennessee Insurance Department with premium and loss data accumulated since 1982. The Tennessee authorities examined PETROMARK's business plan and actuarial studies to verify that premium would be sufficient to cover all losses and expenses. The Company must maintain premium and capital levels that the Tennessee Insurance Department determines are necessary to cover all current and future liabilities.

EPA is encouraged by the successful establishment of this new Risk Retention Group, because it offers hope that other Groups can be formed to fill the need for financial assurance among UST owners and operators. For more information on PETROMARK contact Max Clay at 703/481-0200. ■

LUSTLetters continued

from the dynamic situation we find underground due to freezing, thawing, settlement, filling and emptying of the tank, changing water tables and just the plastic movement of the ground in many areas. The external forces on the pipe, therefore, are many times more important to consider than the internal pressure. It has been the practice in the plumbing trade to use equipment that can stand a pressure test double the internal pressure. Unions are an excellent way to isolate piping that is being cathodically protected. It is important, however, that the unions

be at least 250 lb. test or better. Some improved unions that are virtually leakproof, because of the use of "O" rings, can be successfully used.

Swing Joints: In my experience, many swing joints leak because close nipples were used where almost the total wall of the nipple was reduced to about half its normal thickness by the threading, or they leak in a situation where light duty elbows were used and internal and external pressures caused them to crack.

Other Sources of Leaks: Another source of underground leaks that was not mentioned in Mr. Moreau's

article has to do with the use of the straight-threaded pipe couplings that are often shipped with pipe to protect the threads. People installing piping should always be sure they are using heavy duty couplings that have threads tapered from each end. It is standard operating procedure in our plant to remove and discard shipping couplings from the piping when it is received.

Underground leaks also occur when shipping thread protectors, not meant to be used as permanent fixtures, are left in the openings of tanks and other pieces of equipment.

Continued on page 8

Stalking the Elusive .85 Volts—Monitoring Cathodic Protection

by Marcel Moreau

Very likely, the most technically confusing ramification of the 1984 Subtitle I RCRA Amendments has been the requirement for corrosion protection of buried metal. EPA's Interim Prohibition on unprotected underground storage systems, in effect since May 8, 1985, introduced a new word into the tank community's vocabulary—cathodic protection.

Actually, cathodic protection is not a new concept—it originated with Sir Humphrey Davy in about 1826—but it is a concept not commonly taught in schools. Moreover, the concept is not intuitively obvious, even to those with a scientific bent. As a result, cathodic protection has on occasion been confused with religion—"Why do steel tanks have to be installed by a catholic?", and medicine—"I didn't know tanks had adenoids!". No doubt, it's going to take a while for storage system installers to get the hang of cathodic protection. A good basic guide to this topic is Appendix B in the Petroleum Equipment Institute's RP100-87.

EPA has proposed to allow cathodic protection as a method of corrosion protection for steel tanks and pipes, but it must be monitored over time to ensure that the system is, indeed, being protected against corrosion. So, how does a tank owner or a regulatory official do this? To begin with, it is important to have some kind of understanding of how cathodic protection works. (The National Association of Corrosion Engineers (NACE) and other organizations offer corrosion protection courses and training materials.)

In truth, monitoring cathodically protected tanks or piping can be extremely simple or something of a chore. Ideally, it should all begin with the installation of the system. If provisions are made during the installation of the system, monitoring can be a snap. If not, it can be a nightmare.

The most commonly accepted criteria in the corrosion industry for verifying cathodic protection is a structure to electrolyte potential of $-.85$ volts relative to a copper/copper sulphate reference cell. Roughly translated, this means that if you hook up one lead of a voltmeter to the tank or pipe, and the other to a piece of copper that is in contact with clean damp soil in which the

tank or pipe is buried, the voltmeter should indicate a reading more negative than .85 volts. (some test meters are packaged to show the reading as a positive number in this case, the voltage would read greater than .85 volts.)

Set Up a Test Station

There are two and only two essential requirements for ease of cathodic protection monitoring. These are:

- 1) Have an easy way to get an electrical connection with the tank or pipe from the ground surface. This usually means connecting a wire to the tank or pipe and leading the wire to some location that will be easily accessible after the installation is complete.
- 2) Have an easy way to get the copper/copper sulphate-cell into contact with soil (not concrete or asphalt) that is close to the tank or pipe you want to monitor, and far away from the anodes protecting the tank or pipe.

Both of these requirements can most easily be met by installing a cathodic protection test station at the time of construction of the system. The test station can be a standard petroleum service manhole or it can be made to order by a cathodic protection supplier. It is simply a hole with an easily removable cover which penetrates any pavement and allows access to the soil beneath. It is also a convenient place to bring the monitoring wire from the structure underneath.

Ideally, the test station for the tank should be located over the centerline and near the middle of the tank. This is the point where the tank is nearest to the ground surface and is the most distant point from the tank anodes, which are usually located on the tank ends.

Test stations for piping runs should be located close to the piping, but away from the anodes that are protecting the pipe. Test stations for piping are convenient,

but not so important as for tanks because piping usually comes above ground at some point and is directly accessible. Also, soil is usually accessible underneath dispensers or around submerged pumps. Since these areas are at the end of the piping run, they are likely to be the furthest from piping anodes, which should be located near the middle of the piping run. Thus, these areas are good locations for verifying the performance of that piping run.

Test stations are a wise and inexpensive way for the tank owner to be sure his cathodic protection is working . . . tanks are most often covered with asphalt or concrete and it is not possible to get a good volt reading through such pavement. Storage tank fill pipes used to be convenient points to place the reference electrodes, but these areas are now being protected by spill containment manholes which do not allow for access to the soil. The test station can conveniently provide both access to the soil and a location for the monitoring wire.

When to Monitor

Traditional wisdom has it that a cathodic protection system should be monitored six months to a year after installation and periodically after that. This is well and good, but by six months after installation, most sites are paved and landscaped and if anything is not working, troubleshooting the system will become more difficult and/or expensive.

Most systems will meet the .85 volt criteria for protection very soon after installation, if a very simple step is taken: dampen the anode with 5 gallons or so of water when backfilling. The ground needs an electrolyte, a non-metallic conductor of electricity, to get the current flowing. Water serves this purpose. Unless the tank or piping backfill is extremely dry, this simple step will allow an initial reading to be taken at a point when repairs or troubleshooting can be done relatively easily. If backfill is extremely dry, running a lawn sprinkler overnight at the location should provide sufficient moisture to get a reading.

Troubleshooting

If the recommended practices in PEI RP100 are carefully followed (anodes unwrapped, and solidly attached, coating intact, and electrical isolation maintained) cathodic protection systems should be relatively trouble free. Where trouble is most likely to occur for both tanks

Continued on next page

To order copies of LUSTLine
Bulletin 8, call
Hotline (800)424-9346
To add your name to the
LUSTLine Mailing List,
call (617)367-8522

Stalking .85 Volts continued

and piping is through the loss of electrical isolation. This could happen in a variety of ways, including:

- Electrical grounding from the inside of the tank. This could result from a submerged pump which is installed too low in the tank and touches the bottom, or if the metallic tube (especially in heating oil tanks) touches the bottom of the tank.
- Failure to install or bridging of electrical isolation fittings at either end of piping runs. All electrically isolating fittings should be checked to be sure that they present a barrier to electrical currents at the time of installation.
- Accidental contact of piping on tank with electrical conduit, water pipe or other buried metallic piping where they cross underground.
- Contact of the aboveground portion of vent piping with metallic structures like canopies or tin roofs or gutters which may in turn be connected to an electrical ground. (In Europe, aboveground portions of vent piping are electrically isolated from the rest of the piping to avoid this problem.)

Cathodic protection monitoring difficulties can also result from other causes, including:

- A broken monitoring wire. This can be suspected when the reading on the voltmeter is close to zero. The voltmeter will be indicating the small voltage difference between two pieces of copper, the end of the copper monitoring wire and the copper reference electrode. This can be checked by attaching a wire to a metal tack, driving it into the bottom of a dip stick, and lowering it to the bottom of the tank. It may be necessary to penetrate some sludge or mill scale on the bottom of the tank to obtain a good electrical connection with the tank.
- If you are placing the reference electrode around a fill pipe or a submerged pump, check to see if the soil is saturated with petroleum. Petroleum is an insulator, not an electrolyte, and may interfere with getting an accurate reading.
- You will get readings, though probably not accurate ones, with the reference electrode in contact with concrete or asphalt. Also be wary of readings taken when soil is frozen.

If you are not able to get the .85 volts reading, even after you correct any of the problems listed here, you should contact a qualified corrosion expert to help in stalking those elusive volts. Failing the .85

volt criteria does not necessarily mean the cathodic protection system is not working. Other measures can be taken to check performance, but these techniques are less simple and require more explanation than we could possibly cover in this article.

Wherefore and Hence

Monitoring of cathodic protection is simple when you have the right tools and the system was installed with monitoring in mind. Be sure to:

- Dampen anodes as they are backfilled.
- Take readings after the tank is backfilled to the top and before attaching piping to check the protection of the tank by itself. Record reading for later reference.
- Be sure that piping and other structures are electrically isolated from the tank before backfilling.
- Check to make sure that the piping run is electrically continuous before backfilling.
- Check the protection of each piping run after backfilling but before paving. Record readings for later reference.
- Install a cathodic protection test station for each tank and any piping runs which will be inaccessible after the installation is complete.
- Be sure the installer produces an 'as built' wiring diagram showing wiring runs, location of tanks, piping, anodes and test stations. ■

Editor's Note: We welcome constructive comments and suggestions on the subject of cathodic protection monitoring. It is important that tank owners and tank installers think of cathodic protection as a function that must continue for many years after installation. Once the installer has been paid and gone home, the owner/operator is the one left with the job of demonstrating to an inspector that the system works.

Marcel Moreau is a Petroleum Storage Specialist with E. C. Jordan in Portland, Maine.

LUSTLetters continued

"Swing Joints Don't Swing," Most Appropriate

Don Bragg, Teleflex Fluid Systems, Windsor, Connecticut, sent us an article, *The Case Against Swing*

Joints, which summarizes an engineering study by Fred Craig of Teleflex comparing movement in swing joints versus flexible connectors. The article states, "A swing joint is nothing more than a series of short iron pipes and elbows used to facilitate movement and make up for misalignment in a piping system. By the very nature of its construction a swing joint is unsafe and difficult to install, compared to a flexible connector.

"... In order to move a threaded connection in a properly installed swing joint, a force greater than the torque used to couple the elbows and nipples must be used. Obviously, this will seldom, if ever, happen. Thus the statement, "swing joints don't swing," is most appropriate. In actual practice, any movement sets up stresses in the piping that may be relieved catastrophically at some future time. For fiberglass piping, the fiberglass will give before the metal swing joint—which is why fiberglass pipe manufacturers recommend flexible connectors.

"... From the standpoint of installation, a flexible connector is less difficult and time consuming to install. Of course, a certain amount of care is required to handle and install a flexible connector since flexible piping is not as rugged as steel.

"... Flexible connectors are designed for underground service and backed by the manufacturer... which is not true for swing joints." ■

Tank Talk continued

The Association for Composite Tanks (ACT) has compiled a comprehensive listing of publications relating to underground storage tanks and systems.

The bibliography includes publications by API, PEI, NFPA, UL, and some of the trade associations, and covers such topics as the manufacture, installation, abandonment and disposal of USTs. It also includes addresses from which these publications are available.

For a free copy of ACT's UST Bibliography, send a self-addressed, stamped envelope to:

UST Publications
c/o Association for Composite Tanks
108 North State Street
Suite 720
Chicago, IL 60602

A Quantum Leap From UST Regulator to UST Manager

Before Faye Rhea married William Rhea, Region 6 UST Coordinator, she was Faye Sandberg, Region 7 UST Coordinator. In that capacity, she was pitching for building state programs, getting her states prepared for the new LUST Trust Fund, and working with EPA Headquarters to develop a regulatory program which could be adopted by the states. But in April 1987 she jumped the fence, moved to Fort Worth, Texas, and began work as an Environmental Engineer for the Federal General Services Administration (GSA).

Yes, she was still working for the Feds, but keep in mind, Federal agencies still have to follow Federal state, and local tank rules. Like many other regulated entities, her new employer had to "get up to speed" on what to do about its 150 tanks spread over 11 states and two EPA Regions.

"This agency is essentially a mid-sized property manager and has the same sorts of problems that a private company would have fulfilling its mandate," says Faye. "With my EPA experience and fervor I was able to advise GSA on how to manage its 150 tanks, but rather naively, since all I had to do was recite the UST requirements."

Recently, however, Faye became a program manager for the Safety and

Environmental Branch of GSA. Her job is no longer to advise, but to comply. "I've got to worry about those things other regulated facilities worry about," she says—"like financial impact and fixed resources (limits set by Congress), the quality and efficacy of our investments, the laws. We need to comply while remaining economically solvent."

"Besides the need for available capital outlay for tanks, we need personnel to handle record keeping, inspections, and installation and retrofitting activities," she explains. "Our funds have to come from the same resources as asbestos removal projects, roof replacements, and other typical building management projects, and our budget is usually established at least two years in advance of the funding."

Faye says, as UST regulation moves ahead, her agency is evolving a tank management rather than a reactive posture. To do this, they are trying to accomplish several things:

- develop an UST management plan that follows the same kind of organized approach as building management. This means setting up maintenance, replacement, and recordkeeping schedules, inspections, and a good filing system.
- request funds for tank work anticipated over a 5 year period. These requests would be established

after careful analysis of regulatory requirements, fuel consumption, and the effects of fuel losses or contamination cleanup.

- hire experts in the GSA Regional and Headquarters Offices to help develop the management and funding plans.

- prepare explanations so that senior management is knowledgeable in budget deliberations with the Federal Office of Management and Budget (OMB) and with the Congress in requesting funds for UST work.

- gear the tank management plan toward the cost effectiveness of keeping tanks versus installing above ground tanks or consolidating fuel operations, with the goal of making keep/upgrade decisions by April 1, 1988.

Faye says her EPA background prepared her for knowing the precise nature of the regulations . . . which is essential for any regulated activity. But her new responsibilities require that she make those UST regulations work practically. "I think tank management will evolve as more of an exact science, like good building or property management," she says. "Planning plays a big part in this—without planning, 'tank management' could degenerate into a chaos of 'reacting' to the next inevitable problem." ■

Managing Risks Associated with Purchase of Commercial/Industrial Properties

by Walter S. Mulica

A key factor in the purchase or leasing of commercial or industrial property is its physical condition at the time of the transaction. If properties have been contaminated by past releases of hazardous waste, mandated site cleanups may cost far more than the market value of the properties. Commonly, the new owner of a site with a contamination problem may be liable for cleanup costs even if the new owner had *nothing* to do with the past contamination problem.

Sites that currently contain or previously contained underground storage tanks are particularly susceptible to liability because of special new state and federal status. Significantly, banks and investors are wary of real estate transactions on such sites because of the problems associated with leaking underground storage tanks

(and associated piping systems) and the high costs of cleanups of tank leaks.

Federal Statutes Affecting Real Estate Transactions

On the *federal level*, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as "Superfund" and the Superfund Amendments and Reauthorization Act of 1986 (known as SARA) created substantial liability for contaminated site cleanup. For example, at the time of a sale of a contaminated site, a number of parties may be responsible for property cleanup costs. The parties could include the current owner/operator of the site, the former owner/operator that caused the contamination and/or the unsuspecting *buyer* of the site. Private indemnifications designed

to shield the buyer from risk are not valid under the Superfund regulations. The only protection a buyer has is to qualify as an "innocent landowner"—this requires that a potential buyer undertake appropriate inquiry about potential hazardous waste problems and that such an inquiry discovers no such problems.

State Statutes Affecting Real Estate Transactions

A number of states (particularly in the Northeast) have enacted "superlien" laws—laws which place a priority lien on property and authorize recovery of state-incurred hazardous waste cleanup costs. Currently, Massachusetts, Maine, New Hampshire, Connecticut, New Jersey, Arkansas and Tennessee have superlien laws. A number of states (Illinois, Minnesota, Pennsylvania

Continued on page 11

States Take Action On Financing UST Regulatory Programs

With the advent of EPA's UST regulations in July 1988, state and local governments are stepping up efforts to develop their own UST programs. The hitch is, effective UST regulatory programs cry out for adequate funding, and limitations of EPA UST grants and the LUST Trust Fund have left states with the burdensome, but challenging task of developing their own funding sources.

By Congressional design the UST program is to be state-administered with a little help from the feds. EPA currently has a limited grant program to assist states in funding UST activities, and states are required to provide matching funds in order to receive these grants. Another source of EPA money is the LUST Trust Fund, but by law, this Fund may be used only for activities related to cleanup of contaminated sites.

So far, a majority of the states have taken some sort of step forward in instituting mechanisms, such as tank and facility fees, petroleum product assessments, bonds, or general revenues, to fund at least part of their UST activities. However, many of these states recognize that they still have a long way to go to fund their UST programs adequately.

Currently, registration and permit fees are the most widely used source of state UST program revenue. These fees include tank and facility site activity fees as well as registration fees for testers, installers, etc. Registration and permit fees are generally used for UST regulatory or a combination of UST regulatory/cleanup activities. Currently, only one state uses tank fees to fund only cleanups.

Other states are using petroleum taxes, which include transfer fees or taxes or fees on oil brought into the state. Petroleum taxes are generally used for cleanup activities.

Some states employ a variety of UST funding. For example, Ohio has a tax on fire insurance premiums. California and Massachusetts have used bond issues, and Oregon uses a surcharge on hazardous waste disposal to fund cleanup activities.

Several states employ a variety of UST funding mechanisms. The use of multiple funding sources has the advantage of spreading the funding burden. Illinois, for example,

passed a financing package that took effect in early 1988. They are using a combination of site activity fees (for activities such as installations and closures) and an annual fee (charged to tank testers) to fund the UST regulatory program. A \$500 one-time registration fee for all tank registrations after 1/1/88 and a \$100/year tank fee for all tank owner/operators will be used to cover cleanup activities.

Marketing Funding Options

Yes, marketing! Underground storage tank regulation is an enormous undertaking for any state. The costs of running an effective UST regulatory program are high, although the ultimate benefits of such a program may well be immeasurable. However, people such as legislators, departmental agency personnel, members of the executive branch, and certain interest groups may not be up to speed on these benefits. Yet, they are the ones who must weigh or sway the UST program vis a vis other conflicting demands—its called politics—and concise and easily understood facts and figures can be quite useful to any politician.

Thus, UST program personnel must find ways to market their program so that decision makers have the kind of information they need to make an informed funding decision. The facts and figures must be clearly presented. What is the program doing? Where is it going? How much does it cost? How much will it cost? Why? How is the program currently funded? What mechanisms or combination of mechanisms currently exist to augment or supplement regulation? cleanup? prevention?

Each state has its own style, its own modus operandi, its own set of financing traditions. But the UST program presents a new demand on funds in many states, and legislators may be reluctant to dedicate extensive funding to a new program. It may be necessary to propose a funding program that starts small with a less demanding funding mechanism. Then, as the program develops and matures, the need for and value of future funding increases can be demonstrated.

For example, program officials in Utah worked with the legislature to pass a tank fee system that had

a modest initial fee structure, but allowed for growth to \$100 per tank annually. The initial assessment was \$25 per year per tank to be used by the regulatory agency to cover the costs of developing the UST program. It recently became apparent that more funds are needed to do the job, and the legislative committee is considering raising the fee to \$60 per tank.

In Delaware, an Underground Petroleum Response Fund was created to be used for conducting and overseeing cleanups; helping owners meet federal financial requirements (\$100,000-first party claims, \$300,000-third party claims); and creating an "amnesty" program that reimburses owners and operators for costs (\$2,500 deductible) incurred for cleanups, if reported during the first 18 months after the law was established. However, there is not yet a funding mechanism dedicated to provide revenues. During the next legislative session, decisions will have to be made on who will provide resources for the fund. But the legal establishment of the fund demands the creation of a funding source to support it. UST program officials are considering proposing a gasoline tax, a bond issue, or using general revenue. The State also levies a \$50 per tank annual registration fee for the administrative part of the program.

There are also many UST-related interest groups, such as petroleum marketers or distributors, which should be friend rather than foe. Their support can go a long way. Some states have set up legislative councils made up of legislators, agency personnel and industry representatives to work on developing UST legislation.

UST funding may also involve some compromise—give a little, get a little. Delaware got its \$50 tank fee without the apparent opposition of the tank owners because the legislation also established the amnesty program which was favored by tank owners and operators. In Pennsylvania, a recent bill was passed and signed into law dedicating a percentage of the State's broad-based capital stock-franchise tax (a tax on business income and net worth) to be used for hazardous waste cleanup. To pass such a tax, the legislature had to reach a compromise between those who wanted a reduction in the capital stock tax and those who wanted to use the tax to fund hazardous waste cleanups. The solution was to both reduce

REGIONAL UPDATE

This Regional Update focuses on EPA Region III and is written by Wayne Naylor, Region III UST Coordinator (215/597-7354).

Enforcement and Corrective Action

Region III has signed LUST Trust Fund cooperative agreements for all six of the Region's States, Delaware, Maryland, Pennsylvania, Virginia, West Virginia, and Washington D.C. All of the agreements concentrate the States' efforts on enforcement and corrective action. Work has already begun to cleanup releases at five sites in Maryland.

The Region has also signed Consent Orders (see Consent Order Article on page 2) using authority under section 9003(h) of the 1986 RCRA Amendments, with the potentially responsible parties (PRP's) involved at two sites where gasoline contamination occurred. (Consent orders are site assessment and cleanup orders for which both parties have agreed to the conditions, but not agreed to any wrong doing.)

At the Pineville, West Virginia site, the PRP has agreed to do a hydrogeologic study and is reported to have purchased the property evacuated by the residents because of gasoline fumes. At a site in Jacksonville, Maryland, three PRP's have agreed to conduct pump and treat actions to cleanup two plumes of gasoline contamination that threaten ten private wells and the groundwater of a planned subdivision.

States Take Action *continued*

the overall tax and to dedicate a portion to the cleanup fund.

A final note. While legislatures have been mentioned frequently thus far, big funding snags can come from within the environmental agency, itself. Remember the folks at the top of your agency need to be convinced that the UST program deserves their support. The other players in the executive branch—the Governor and his team—need to understand why they should support such a program.

So go for it UST personnel, wherever you are. You've got your work cut out for you . . . market! ■

Interim Prohibition Enforcement

Region III has also been involved in enforcing the Interim Prohibition, which prohibits the installation of a new tank that is not protected from corrosion or structural failure, effective May 7, 1985. States without specific authority to enforce Interim Prohibition were asked to refer violations to EPA enforcement. A tank owner who has violated Interim Prohibition is sent a Notice of Non-Compliance letter, which states information has been received that the tank is in violation of Interim Prohibition and that any non-complying tank should be upgraded or further enforcement action could be sought.

Action in the States

Delaware and Maryland are currently implementing their own UST programs, and each is eager to be the first UST program to be approved to operate "in lieu of" the federal program. Both States will be participating in OUST's state program approval pilot project.

Virginia was successful in getting two UST statutes approved during 1987. One piece of legislation authorized the State UST program and the other established a State trust fund for financial responsibility for petroleum UST's. The Trust Fund statute calls for owners and operators to have \$100,000 in insurance to cover releases and \$300,000 for third party liability. The State will cover the cost between \$100,000 and \$1,000,000 and the Federal LUST Trust Fund "kicks in" over \$1,000,000.

Delaware has had similar trust fund legislation signed during the past year. But, in addition, Delaware has established an amnesty period for tank owners who report leaks. The State will cover cleanup costs, with \$2,500 deductible, for releases reported prior to the end of 1988 (or later if starting date must be reset because no money has been appropriated).

Pennsylvania, West Virginia, and the District of Columbia have drafted UST/LUST legislation and hope to see it enacted in 1988.

Special Projects

Region III has been awarded funding from Headquarters to conduct a special project studying the

the impact of underground storage tank systems on sensitive ground water areas. Data will be collected at sites in eleven counties with tanks that are 15 or more years old. Locations of these sites will be plotted by latitude and longitude and a rating will be given to the site based on its proximity to municipal drinking water supplies. The data will then be entered into a geographic information system which will produce computer generated decision maps which can be used to establish priorities for inspection and compliance. Region III believes that the geographic information systems are a useful tool for tank program management and hopes that this project will serve as a useful model for other states and Regions.

The Region III UST program is also participating in two additional pilot projects. Along with Region I, we have been selected to develop a working paper regarding the Region's role as field representative. We will then implement the new role in order to test and refine it.

The other project involves cost recovery under the LUST Trust Fund. The Region will receive an additional \$100,000 in grant funds which will be awarded to Maryland to develop and provide information on the most effective methods of conducting cost recovery activities. ■

Superlien *continued*

and West Virginia) require that property owners disclose publicly, and specifically to buyers information regarding hazardous waste disposal or contamination problems on the property prior to sale.

Environmental Site Assessments

Prudent buyers of commercial and industrial property (particularly those with underground tanks) are managing potential hidden risks by having a comprehensive environmental site assessment done on a site by a competent professional prior to a purchase. Sellers also find it beneficial to have such a study undertaken in order to identify hazardous waste problems which could later "kill" a deal or result in a drastic drop in sale price. A seller may want to redefine a site's property boundaries to leave out problem areas or negotiate with the buyer a shared-cost cleanup.

Continued on page 12

TANK TALK

The Vermont statute on UST's adds "manure storage tanks" to the federal list of exempted tanks.

The California State Water Resources Control Board (SWRCB) and Department of Health Services (DHS) have prepared the impressive and comprehensive **Leaking Underground Fuel Tank (LUFT) Manual**, the result of a LUFT task force effort to establish guidance procedures for determining whether an UST site is clean and safe for the protection of public health and the environment.

Specifically, the manual provides guidance in: 1) investigating suspected or known leaks from UST's; 2) assessing risk to human health and the environment when leaks have occurred; 3) determining clean-up levels in soil, groundwater, and air for contaminated sites; 4) screening out sites which represent an acceptable degree of risk from further study; and 5) taking remedial actions.

The procedures are intended to "avoid unwarranted analysis while ensuring that adequate analysis is done to identify the extent of contamination problems." To order copies of the manual contact Diane Edwards at 916-324-9088 or Betty Moreno at 916-324-1262.

As part of an EPA/State funded Leak Cleanup Pilot Program and in response to the continuing need to train UST inspectors and update them on changes in technology, the California State Water Resources Control Board (SWRCB) will offer two 2-day courses for UST inspectors on **Leak Prevention and Detection**

and Tank Closure and Site Cleanup.

The Prevention course will be offered 3 times in June and July and will cover such topics as regulations, new tank installation, facility design, tank monitoring, compatibility of structural materials, corrosion protection, site inspection, health and safety considerations, and reporting.

The Cleanup course will be offered 5 times during June and July and will focus on site investigation (risk assessment modelling in particular), groundwater monitoring well installation, groundwater and soil sampling, laboratory and field quality assurance and quality control, and health and safety considerations.

Much of this current series of courses was modified from evaluations from an earlier course offered to approximately 400 local government inspectors statewide. The SWRCB hopes to continue offering inspector training courses on a routine basis. For information on the Prevention course, contact David Holtry at 916/322-0210, and on the Cleanup course, contact Terry Brazell at 916/322/0202.

Specifications for Impressed Current Cathodic Protection from P.A.C.E.

The Petroleum Association for Conservation of the Canadian Environment (PACE) has recently published a set of guidelines for specifying impressed current protection systems which takes the guess work out of designing, installing, and maintaining impressed systems. The report recommends the design criteria, materials, installation

methods, inspection tests, and maintenance schedules which are most widely used by the Canadian petroleum industry.

Copies of the report entitled "**Guideline Specification for the Impressed Current Method of Cathodic Protection of Underground Petroleum Storage Tanks**" (PACE Report 87-1) are available for \$10.00 each from PACE, 1202-275 Slater Street, Ottawa, Canada, K1P 5H9, (613) 236-9122.

Superlien continued from page 11

For example, many family run gas station businesses are being sold to land developers. These purchases may involve 4 or 5 sites. It is not uncommon for half of these sites to be contaminated. The contaminated sites would have a drastic financial effect on the development potential of all of the parcels in the transaction. The developer may want to continue negotiating with the seller with respect to cleanup considerations, or, in such a case, many potential buyers would be well advised to walk away from the entire transaction.

The most important aspects of the "superlien" approach are that both buyer and seller are protected at the time of sale by established true site conditions; problems created at a later date cannot be tied to the former owner; and environmental hazards are identified and cleaned up. ■

Walter Mulica is a Principle and Senior Hydrogeologist with IEP, Inc., in Northborough, Massachusetts.

L.U.S.T. Buster T-Shirts & Sweatshirts!

Tee's: S,M,L,XL \$9.00pp
Sweats: M,L,XL \$15.50pp



Allow
4-6 weeks
delivery.

Send check or money order to: NEIWPC
85 Merrimac St., Boston, MA 02114

LU.S.T.LINE

New England Interstate Water
Pollution Control Commission
85 Merrimac Street
Boston, MA 02114

First Class Mail
U.S. Postage Paid
Boston, MA
Permit # 14551