THINK TANK

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Corrective Action Work Plan Requirements

By David Lerner

The Tank Management Branch (TMB) requires active corrective action when an identified release at any underground or above ground storage tank site may pose a threat to human health or the environment if no remedial actions are taken. Before any active remediation may begin at a site, the Department requires submission of a corrective action work plan (CAWP) to the TMB. Cleanup activities may begin *only* after receiving written approval from the TMB.

Once a release has been confirmed, the Department requires that a hydrogeologic investigation and risk assessment be completed and approved before beginning any active remediation (barring any real emergency). Whether or not active site cleanup will be required depends on the results of the hydrogeologic investigation, since cleanup goals for contaminants released are often established based on the results of the hydrogeologic investigation and risk assessment. The Department's guidelines for conducting a hydrogeologic investigation and determining cleanup goals can be found in the DERBCAP Guide, Chapter 3 and Appendix 9.

Question: Why is approval of a CAWP from the TMB required *before* beginning active corrective action? Why are the site owners and responsible parties not allowed to begin active remediation following completion of or even during a hydrogeologic investigation?

Answer: The TMB is required to oversee the cleanup of all contaminants released into the subsurface from any underground and above ground storage tank in Delaware from the initial site investigation, through site cleanup to closure. This oversight includes reviewing and approving CAWPs. By reviewing them, the TMB can determine if the proposed remediation technologies are appropriate and applicable. Selecting the most appropriate and effective remediation technologies from the start will help ensure that there is no waste of time, effort or money once corrective action begins.

There are many available remediation technologies that can clean up a contaminated site. Whether or not a remediation technology is appropriate for a specific site depends on many factors, such as: 1) Type of contaminants released; 2) Contaminant concentrations in soils and ground water; 3) Presence of free phase contaminants; 4) Whether off-site migration has occurred; 5) Distance from contaminant plume to nearby water wells, water bodies and other sensitive receptors; and 6) Local hydrogeology.

Technologies that are appropriate and effective at cleaning up a release from one site may not be appropriate or effective at cleaning up a release at another site, even if it is adjacent to the first site. Therefore, the CAWP should be written and submitted for each site project individually, and the review of CAWP is handled on a case-by-case basis.

Question: Who is allowed to write a CAWP and what must a CAWP contain in order to be approved by the TMB?

Answer: The CAWP should be written by a qualified environmental consultant and should identify what remedial technologies

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your consultant proposes to use, including any supporting documentation to justify their selection, such as the results of any pilot tests and feasibility studies conducted at your site. They should also state the reasons why other available remediation technologies were *not* selected.

The CAWP should include a detailed discussion of the remediation system's design and equipment. For example, what materials will be used in remediation system construction? Where will monitor, recovery, extraction, injection and sparge wells be located? How many, what type and size of recovery pumps, extraction blowers, piping, etc. will be used, and where will they be located? Site maps containing the layout of the remediation system relative to the existing contaminant plumes, tank sites and known landmarks should also be included in the work plan.

The CAWP should include a detailed discussion of the remediation system's design and equipment.

A plan for periodic ground water sampling and maintenance from system start up until site closure should also be discussed in the CAWP, along with a plan for remediating and disposing of any free phase contaminants, contaminated ground water, soil gas, and contaminated soils recovered during system construction and operation. Additionally, a list and summary of what permits will be required to operate the remediation system along with a site safety plan also needs to be part of the work plan.

By doing all of the above, not only do you greatly increase the chances of getting your CAWP approved by the Department, but your site will hopefully be cleaned up in an efficient manner that avoids wasting time and any unnecessary expenses. Yes, active remediation can be quite expensive, but in the long run, the costs of not cleaning up your site or applying ineffective or inappropriate remediation technologies to your site will often be much higher. It is better for everyone to clean up contamination from their site using the most appropriate technologies the first time around.

Editor's note: A more detailed technical guidance for CAWPs is available on the TMB web site at: http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/ust/download/pdf/CAWPOutline.pdf

Spill Bucket Concerns

Brian Churchill

One of the most common problems found during compliance inspections continues to be spill bucket violations. Since 1990, all tanks in Delaware have been required to be equipped with a spill bucket around the fill pipe to collect and contain spillage-that may occur upon disconnection of the tank truck fill hose during tank loading operations. Spill buckets are frequently found to be in poor condition or full of product, water and/or debris. Part B, Section 1.04 of the *Regulations Governing Underground Storage Tank Systems* states, "Owners and operators must ensure that releases due to spilling or overfilling do not occur." *A full spill bucket or one that is no longer liquid tight is not able to function as it was designed and therefore is out of compliance.* Spill buckets should be large enough to contain any fuel that may spill following the delivery, and typically range in size from 5 gallons to 25 gallons.

Proper spill bucket maintenance is simple, inexpensive, and can help owners and operators minimize the risk of facility contamination that frequently leads to expensive cleanups. According to an article in the November 2004 *LUST*Line Bulletin, a representative for a major manufacturer stated, "many spill buckets installed for the 1998 upgrade requirement are approaching the end of their useful lives." Additionally, the article stated that a recent study of 910 tanks in South Carolina showed that 8.4 percent of spill buckets leak. If this is an indication of how many spill buckets are leaking in Delaware, there could potentially be between 150-200 leaking spill buckets in the state.

While many believe that spill buckets are not a maintenance item, even the best equipment can become faulty over time if not properly operated and maintained. In addition, spill buckets may not last as long as other components in the UST system. Owners and operators should check spill buckets for debris and liquid as well as signs of wear, cracks, or holes before and after each product transfer. Spill bucket maintenance should include replacing cracked or damaged lids, maintaining a water tight seal and keeping a close eye on spill buckets in the winter months, especially if a facility has been recently plowed for snow removal. Based on this inspection, a UST contractor may suggest a test to determine if the spill bucket is tight or needs to be repaired or replaced.

Furthermore, at the time of installation, the concrete surrounding a spill bucket should be sloped in such a way to keep runoff from entering it. Also, keep in mind that when spill buckets are equipped with drainage valves, the valves may become blocked with grit and trash, preventing them from sealing properly. This may result in vapors escaping the underground tank system, causing failed vapor recovery pressure decay testing. Owners and operators may consider plugging spill bucket drain valves to avoid these maintenance issues.

Part of a regular maintenance program should include spill bucket tightness tests, especially for spill buckets that appear to be in poor condition. Spill bucket tightness can be determined by filling the spill bucket with water, marking the level of water, allowing the water to stand for 24 hours, and measuring the water level in the spill bucket to see if it has gone down. Please note that this method of testing will produce a small quantity of contaminated water which must be disposed of properly. If a spill bucket is determined to be leaking, the spill bucket must be replaced as soon as possible to minimize environmental impact and potential clean up costs.

Only one gallon of product leaking every week from a poorly maintained spill bucket can result in up to 195 tons of contaminated soil in a year. Even if the USTs and lines have tested tight at a facility, it is still possibly that product is contaminating the environment from leaking spill buckets or from several other potential sources. While the current UST Regulations do not require annual spill bucket testing, DNREC is considering making this a requirement.

Proper spill bucket maintenance is an easy and crucial step to reduce the chances of an environmental impact from an underground storage tank system at a facility. Owners and operators should keep in mind that spill bucket replacement costs may be significantly lower than sampling and remediation expenses.

New spill bucket undergoing testing at a tank installation site. Arrow indicates water leaking out.

If you have any questions, please call us at 302-395-2500.

Reference:

Stoudemire, D.W., 2004, "Spill Buckets: Mistaken Expectations?": *LUST*Line Bulletin # 48

Enforcement Action Taken at Wilmington Facility

A Notice of Administrative Penalty Assessment and Secretary's Order was issued to ConocoPhillips Company for violating Delaware's *Regulations Governing the Control of Air Pollution.* ConocoPhillips Company previously owned and operated a gasoline dispensing facility located at 2501 Foulk Road, Wilmington.

The facility is required to comply with air pollution control permits issued by the Department. ConocoPhillips Company constructed a Stage II Vapor Recovery System without receiving a Construction Permit.

DNREC recently collected a penalty of $16,000 plus an additional $343 in cost recovery fees from ConocoPhillips Company.

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Becky Keyser, Editor
Emil Onuschak, Jr., Asst. Editor
Gary Charles, Publishing
Frank Gavas, Graphics
Tripp Fischer, Technical Editor

Contributing Staff

David Lerner
Brian Churchill
Tara Chambers Susee

DNREC
Tank Management Branch
391 Lukens Drive
New Castle, DE 19720
Tel: (302) 395-2500
Fax: (302) 395-2555

Alex Rittberg
Branch Manager

James Harlan
Director, Boiler Safety
(302) 744-2735

Announcements

Chris Brown – Mitchell William Brown was born on February 20, 2005. Mom and baby are doing well and daughter Abigail is a terrific big sister. Congratulations to the Brown family!

Jill Hall – promoted to Environmental Planner IV. Among Jill's new duties will be spearheading a rewrite of the UST Regulations and updating the TMB's Technical Guidance Manual.

Becky Keyser – promoted to Environmental Scientist II. Becky is a compliance project officer for USTs. Among her new responsibilities, Becky is now the editor of *Think Tank*.

James Werner Named DNREC Director of Air and Waste Management

James D. Werner has been named the Director of DNREC's Division of Air and Waste Management (which includes the Tank Management Branch). Werner is an engineer with more than 20 years of technical, environmental policy, and problem-solving experience. Most recently, Werner was the Director of the Missouri Department of Natural Resources' Aid and Land Protection Division.

Werner received a Master of Science degree in Environmental Engineering at The Johns Hopkins University in 1986. He earned his Bachelors degree in Biology and Geography from the University of Delaware in 1980. He is a graduate of John Dickinson High School in Wilmington.

The Tank Management Branch welcomes James Werner to DNREC and home to Delaware.

DNREC/TMB
391 Lukens Drive
New Castle, DE 19720

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