



Environmental Protection Matters

DNREC Office of Environmental Protection

SIGN UP! This newsletter is **FREE** at:
<http://www.dnrec.delaware.gov/Pages/DNRECLists.aspx>

No forms to fill out—done in 3 clicks!

Volume 6, Issue 2

June 2014

Highlights in this edition include:

**Taking Care of
Uncle Ted's** 2

**New UST
and AST
Legislation** 3

**Minding Air
Quality in
Millsboro** 4

**Hazardous
Home Heating
Oil Spills** 5

**Boiler Safety—
First and
Foremost** 6

**TMS by the
Numbers/
TrashStoppers'
New App** 7

**More
Information
on the Office of
Environmental
Protection** 8

Taking Care of Uncle Ted's

What do you do when a gasoline underground storage tank (UST) leaks and there is no responsible party to pay for the cleanup? This is part of the many challenges faced by DNREC's Tank Management Section (TMS) in cleaning up the Uncle Ted's Trading Post site located at 28870 DuPont Blvd. in Millsboro.

The good news? This year, the site was finally remediated thanks to DNREC's former Fund for the Inability to Rehabilitate Storage Tanks or FIRST Fund, now referred to as State-lead funding.

The bad? Significant state funding was needed to remediate the high levels of soil and groundwater contamination identified at the site, including ethylene dibromide (EDB). EDB was historically used as an anti-knock additive in leaded fuels and is notoriously difficult to clean up.

To further complicate the remedy, detectable levels of methyl tertiary butyl ether (MTBE) extended over 900 feet from the source at one point. In addition, a second remediation system had to be installed on an adjacent property.

(Continued on page 2)



G. Charles, retired, TMS

The USTs were removed in Dec. 2002, while a portion of the business remained open.

Taking Care of Uncle Ted's *Continued...*

The property was operated as a gas station and convenience store as early as 1977. Due to owner bankruptcy, the property qualified for State funding to remove the USTs and pay for the associated investigation and remediation.

Shortly after qualification for State funding, the site was acquired by a new owner, who was interested in getting a business up and running as soon as possible. With careful coordination, the new business was able to remain open throughout the investigation and remediation.

The seven USTs at the site were out-of-service since the late 1990s, containing an approximate total of 13,000 gallons of fuel. The tanks were removed by a TMS tank removal contractor in December 2002. As soon as the tanks were removed, stained and petroleum-saturated soils were observed in the excavation. Due to the extent of the impact, it was apparent that a subsurface, hydrogeologic investigation would be necessary.

The hydrogeologic investigation was performed by a TMS environmental contractor. Extensive soil contamination was found in the UST excavation area. High levels of benzene, toluene, ethylene, and xylene (BTEX), MTBE, EDB and dissolved lead were found in the groundwater on-site. Dissolved contamination, in the form of MTBE, extended to several off-site properties to the north, including across DuPont Blvd.

The business and several adjacent properties were equipped with carbon filtration systems as a precaution. Quarterly monitoring of the drinking water was completed throughout the project.

A significant amount of dissolved contamination extended to the property immediately to the north. It became apparent that remediation of both properties would be necessary, along with the monitoring of other off-site properties.

The cleanup was performed by a TMS remediation contractor. The remedy included a combined air sparge – soil vapor extraction technology, along with chemical oxidation injections to provide additional “polishing.”



The remediation unit was inconspicuously located at the back of the Uncle Ted's Trading Post site.

The technique is commonly used in the sandy soils of southern Delaware.

As an additional precaution, the water supply well serving both impacted properties was relocated several hundred feet away from the contaminant source. The new well was drilled to a deeper, confined aquifer, and is expected to provide larger capacity for additional water usage.

In keeping with traditional trading posts, a spirit of neighborly cooperation and resourcefulness prevailed throughout the project. For more information on the TMS' cleanup programs, please visit:

<http://www.dnrec.delaware.gov/tanks/Pages/default.aspx>.

C. Brown, TMS and C. Wirtz, WHS

New UST and AST Legislation

This legislative session, DNREC's Tank Management Section proposed two acts, House Bills (HBs) 367 and 368, to amend Title 7 of the Delaware Code relating to petroleum and hazardous substances underground and aboveground storage tanks (USTs and ASTs, respectively). Both bills passed the General Assembly on June 26, 2014 and are now awaiting Governor Jack Markell's signature.

HB 367 made a number of revisions, additions, and technical clarifications to Delaware's UST program. The changes were designed to protect public health and the environment, especially Delaware's precious drinking water. Under HB 367, the purpose section of the statute was revised regarding remediation of contaminated soil and groundwater to reflect that remediation costs should be fairly apportioned among the responsible parties associated with the facility and the USTs. The responsible parties that benefited from the operation of the facility and should also have to pay for the cleanup, as needed.

In addition, HB 367 retained the current liability of responsible parties to remediate pollution from retail gasoline stations, and provided new liability standards starting on Jan. 1, 2016. The new liability standards borrow elements from Delaware's Hazardous Substances Cleanup Act, Chapter 91 of Title 7.

HB 367 clarifies DNREC's responsibility to assume control of a release situation and resulting cost recovery, and also provides for contribution from other responsible parties. It also provides liability protections for lenders who foreclose on properties that contain USTs and details what lenders need to do to maintain this liability protection.



HB 367 also makes it clear in the definition of "facility" that a facility remains a facility under Chapter 74 of Title 7, even after the removal of tanks from the facility, and as such, remains subject to remediation and other continuing requirements.

HB 367 also clarifies DNREC's authority to access property and use Hazardous Substance Cleanup Funds to confirm suspected releases from USTs, and to investigate and clean up releases of petroleum and hazardous substances resulting from leaking USTs (LUSTs). In addition, HB 367 amends the financial responsibility language, consistent with existing federal requirements.

When site conditions warrant it, HB 367 also clarifies that DNREC may require an environmental covenant be placed on a property as part of a risk-based environmental cleanup of contamination resulting from a tank release in order to protect public health and the environment.

The AST Act, or HB 368, provides similar environmental cleanup liability protections for lenders who foreclose on properties that contain ASTs and also sets forth the criteria and process for lenders to maintain this liability protection. HB 368 also corrects a previous omission by specifying a timeframe for DNREC to file an environmental lien with the Recorder of Deeds. For more information on the two bills, please visit: <http://legis.delaware.gov/LIS/lis147.nsf/Legislation?OpenView&Start=1.29&Count=30&Expand=1#1>.

Minding Air Quality in Millsboro

The Millsboro Inhalation Exposure and Biomonitoring Study was initiated to evaluate inhalation exposures of residents in the Millsboro area of Sussex County, Delaware. The study included out-of-state, local regional and local point sources of air quality contaminants called fine particulate matter (PM_{2.5}) and associated inorganic compounds. However, the focus was on an evaluation of local residential exposure to different emissions scenarios at the NRG Energy, Inc. (aka Indian River) power plant.

The primary pollutant of concern was PM_{2.5}, which can adversely affect human health, including premature death in people with heart or lung disease, decreased lung function, and aggravated asthma. The study was designed to estimate the relative contributions of the various sources of PM_{2.5} by sampling indoor, outdoor, and personal air in locations both upwind and downwind of the power plant. Samples were also assessed for environmental tobacco smoke in personal samples (small samplers worn around the neck), and a suite of inorganic elements or heavy metals, including selenium, arsenic, mercury, nickel, and chromium which are of special interest due to their potential health effects.

The outdoor ambient air samples were collected at four fixed sites in the Millsboro area and in Seaford for a background comparison. The residential indoor and outdoor air samples, as well as the personal samples were collected at the participating residents' homes. Biospecimens (urine, blood, and hair) were also collected from the study participants over three consecutive days and then analyzed for volatile organic compounds and metals.

The sampling plan captured exposures during the fall of 2011 and 2012. Meteorological records permitted assessment of upwind or downwind location relative to the power plant during both sampling periods. During the fall 2011 season, the NRG Energy power plant was not operating, while engineering upgrades designed to



NRG Energy, Inc./Indian River Power LLC facility is located on the Indian River near Millsboro.

reduce pollutant emissions were installed. The fall 2012 sampling period was conducted while the power plant was operational, though not at 100% capacity. The sampling design allowed for an indication of the power plant contribution to local particulate matter exposures.

The study results indicated no significant difference in outdoor concentrations related to the NRG power plant emissions. Most of the resident's exposures were related to indoor air and personal exposures. The personal concentrations were statistically higher than outdoor and indoor concentrations. The personal samples may have been influenced by the proximity and source strength of common indoor activities (e.g., smoking, cooking, cleaning, use of personal care products, etc.).

Regional background average particulate concentrations were the lowest of all four measurement locations. The comparison between ambient monitors located around NRG Energy power plant and the Seaford background monitor showed excellent agreement. The analysis for metals during the fall 2011 and 2012 sampling periods displayed similar elements and concentrations as found elsewhere in the Northeastern United States. To review the study, please visit:

http://www.dnrec.delaware.gov/Admin/Documents/Millsboro_Inhalation_Exposure_and_Biomonitoring_Study_Final_Report_05282013.pdf.

For more information on the Division of Air Quality, please visit: <http://www.dnrec.delaware.gov/air/Pages/Default.aspx>.

From Millsboro Inhalation Exposure and Biomonitoring Study 5/28/2013, and B. Frey, DAQ

Hazardous Home Heating Oil Spills

The call came into DNREC's Emergency Response Team late on a Friday afternoon —another home heating oil release to the environment. This time it was right before Hurricane Irene with heavy rain and flood warnings extending along the entire Eastern Seaboard. Not a good time to discover a leaking fuel oil underground storage tank (UST) in a residential neighborhood in Wilmington.

The fuel oil tank was buried next to the home in the yard. The grass had already died from previous leakage, but with the coming storm, the concern was that rain water might make its way into the UST displacing the rest of the oil, causing an additional release.

Since 2009, DNREC's Emergency Prevention and Response Section (EPRS) has responded to over 182 heating fuel releases and referred approximately 44 heating fuel related issues to TMS for further investigation and remediation. Since 2007, 233 heating fuel USTs have been closed, with 208 assigned as a Leaking UST (LUST) project.

The EPRS and the Tank Management Section (TMS) are both notified when a release occurs. The EPRS provides resources to mitigate the immediate threat of the release and if additional investigation is required, refers the project to the TMS. The TMS requires additional investigation and/or closure of the UST in accordance with the Delaware's *Regulations Governing Underground Storage Tank Systems*.

The UST regulations do not apply to USTs of 1,100 gallons, or less, containing heating fuel for consumptive use on the premises where stored. Typically, the heating fuel USTs are not properly closed in place or removed until a property transfer occurs. In many cases, the heating fuel USTs corrode in the ground until there is a release situation, leading to surface and even subsurface petroleum

contamination of soils and groundwater.

Due to the prevalence of these leaking heating fuel USTs and limited homeowner resources to remove or properly close them in place, DNREC is now considering the formation of a Heating Fuel Underground Storage Tank Closure Assistance Program (the Heating Fuel Program).



M. Higgins, EPRS

A mini-track hoe was used to excavate the fuel oil-impacted soils that extended from the backyard of the residence, along the side of the driveway, to Coleman Street in Wilmington.

The Heating Fuel Program would be voluntary, but would provide limited funding for the removal, closure in place and some over-excavation of unregulated heating fuel USTs of 1,100-gallons or less. The program would utilize the Hazardous Substance Cleanup Act (HSCA) Fund to pay for the UST removal and closure activities.

The proposed Heating Fuel Program will protect human health, safety and the environment by providing limited funding to remove, or close in place, existing unregulated heating fuel USTs, before they have the opportunity to cause a release. For more information on the TMS, visit:

<http://www.dnrec.delaware.gov/tanks/Pages/default.aspx>.

A. Bryson, TMS

Boiler Safety—First and Foremost

Many people do not realize the potential danger in operating boilers and pressure vessels. Most do not know that their home water heater is a pressure vessel, and if using hot-water radiant heat, their furnace boiler is, too.

Although residential pressure vessels are not regulated by the State of Delaware, proper maintenance by competent service personnel is important, as these and other pressure vessels can explode putting families, homes, and businesses at risk.

DNREC's Boiler Safety Program's mission is to promote public safety through regular inspections of regulated boilers and pressure vessels, and provide education on the operation, maintenance and repair of boilers and pressure vessels in Delaware.

There are over 15,000 registered boilers and pressure vessels located throughout the state. Boiler Safety staff maintains a database of these objects. Boiler Safety commissions insurance company inspectors and more recently, third party inspection agencies, to inspect boiler and pressure vessels.

DNREC's two boiler inspectors inspect boilers and pressure vessels that are uninsured or overdue for inspection by an insurance agency. The boilers and pressure vessels must be constructed to the American Society of Mechanical Engineers Code and installed with the necessary controls and safety devices to shut them down or alleviate pressure if an unsafe condition develops.

The boilers are generally located in places of "public assembly," which can include apartments, schools, shopping centers, convenience stores, hospitals, and other facilities that serve the public.

Pressure vessels come in all shapes and sizes such as the steel carbon dioxide storage cylinders found at restaurants and convenience stores, air compressor tanks in auto repair shops and air cannons used for the Punkin Chunkin competition each fall.

Thanks to the hard work of the Boiler Safety Team, there hasn't been a major incident in Delaware that has resulted in serious injury, or loss of life or property. The Boiler Safety Team continues to work vigilantly to protect public safety and the environment. For more information on DNREC's Boiler Safety Program, please visit: <http://www.dnrec.delaware.gov/BoilerSafety/Pages?Default.aspx>.

A. Rittberg, TMS and J. Esch, BS



"Fire and Ice" Air Cannon — The Boiler Safety Program performs inspections at the annual Punkin Chunkin event ensuring public safety.

Tank Management Section by the Numbers

With a majority of Delaware's drinking water coming from groundwater, leaking underground storage tanks (LUSTs) are the number one threat to Delaware's drinking water. The Tank Management Section (TMS) has identified over 4,000 LUSTs since the program began in 1989. The diligent staff in the TMS are proud to say that 95% of them have been cleaned up to date. When you break down the numbers, you can see why.

Five UST hydrogeologists in the TMS—Corrective Action Group are responsible for overseeing the cleanup of approximately 95 LUST sites a year. Add in the same number of new releases, and each hydrogeologist oversees more than 35 sites at any given time. While home heating oil tanks (both aboveground and underground) are not regulated by the program, cleaning up releases from these tanks are regulated, with approximately 66 cleanups per year.

Five UST project officers in the TMS—Compliance Group conduct an average of 145 compliance inspections annually at regulated UST sites such as gasoline service stations. Approximately 80% are found to be in compliance within 90 days of the time of inspection, while the remaining 20% require additional compliance assistance or enforcement action. In addition, the Compliance Group reviews and oversees the installation of about eight new regulated UST facilities each year, which includes one to four USTs per site.

For more information about the TMS, please visit:

<http://www.dnrec.delaware.gov/tanks/Pages/default.aspx>.

M. Crofts, WHS

TrashStoppers' New App

Delawareans and frequent visitors to the First State can now report illegal dumping activities directly to state environmental officials using their smartphones. DNREC has launched a new TrashStoppers app for Android, iPhone, and Windows phones. The app was developed for DNREC by Delaware Interactive, LLC as part of the state's ongoing eGovernment initiative.

The DNREC TrashStoppers app lets users provide tips to DNREC on illegal dumping of trash, tires, construction debris and other environmentally hazardous materials. Users can submit location information, descriptions of dumping they've seen and the people doing the dumping, motor vehicle information and photographs of the scene. Users can also make anonymous submissions if they wish. All illegal waste dumping tips are passed directly to the DNREC team for assessment.

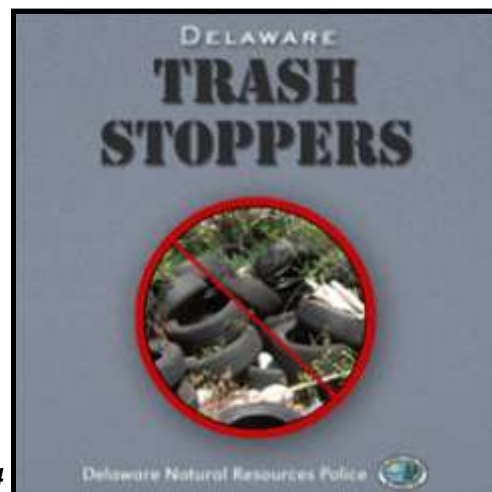
You can learn more about DNREC and the TrashStoppers program by visiting:

<http://www.dnrec.delaware.gov>.

The TrashStoppers app is free to Android, iOS, and Windows 8 users and available for download at:

<http://apps.delaware.gov>.

From DNREC Press Release 3/10/14



DELAWARE
DEPARTMENT OF
NATURAL
RESOURCES AND
ENVIRONMENTAL
CONTROL

Secretary Collin P. O'Mara
Deputy Sec. David Small

DNREC Office of
Environmental Protection
89 Kings Highway
Dover, Delaware 19901
Phone: 302-739-9000

Division of Air Quality
Division Director
Ali Mirzakhallili
Phone: 302-739-9402
Fax: 302-739-3106

ali.mirzakhallili@state.de.us

Division of Energy & Climate
Acting Division Director
Phil Cherry
Phone: (302) 735-3480
Fax: (302) 739-1840

philip.cherry@state.de.us

Division of Waste and
Hazardous Substance
Division Director
Marjorie A. Crofts
Phone: 302-739-9400
Fax: 302-739-1894

marjorie.crofts@state.de.us

Division of Water
Division Director
Kathleen M. Stiller
Phone: 302-739-9950
Fax: 302-739-7864

kathleen.stiller@state.de.us

Environ. Protection Matters
Editor: Christina Wirtz
Phone: 302-395-2600
christina.wirtz@state.de.us

**Visit us on the
web!**

www.dnrec.delaware.gov



Division of Air Quality handles the majority of air issues in Delaware including: monitors and regulates all emissions to the air; issues "permits to construct" and "permits to operate" to air contaminant sources; maintains emission inventories from business and industry; develops the State Implementation Plan as required by the Clean Air Act; adopts new regulations and enforces existing regulations and permits; and inspects asbestos removal sites.

Division of Energy and Climate's mission is to serve the people of Delaware by reducing the adverse impacts of energy use on our environment, health, and economy. We educate, lead by example, and build partnerships to increase energy efficiency and renewable energy, promote sustainable growth, and prepare for a changing climate.

Division of Waste and Hazardous Substances plans for and responds to, environmental incidents; regulates the handling, transfer, storage and disposal of solid, infectious and hazardous waste; manages the recycling program in Delaware; regulates above and underground storage tanks and boilers; oversees the remediation of sites that have been contaminated by hazardous substances and chemicals; and implements Delaware's Brownfields Development Program.

Division of Water manages and protects water resources through various programs by providing technical assistance, laboratory services, regulatory guidance and implementation, and educational services; and performing applied research.

EASY REFERENCE PHONE NUMBERS

24-Hour Report and Spill Notification Line - 1-800-662-8802

Aboveground Storage Tanks - 302-395-2500
Air Quality - New Castle Office - 302-323-4542
Air Quality - Kent & Sussex - 302-739-9402
Asbestos New Castle - 302-323-4542
Asbestos Kent & Sussex - 302-739-9402
Biosolids Permits - 302-739-9946
Boiler Safety - 302-744-2735
Brownfields - 302-395-2600
Delaware Estuary Program - 302-739-9283 (Delaware Coastal Management Program)
Division of Air Quality Director's Office - 302-739-9402
Division of Energy and Climate Office - 302-735-3480
Division of Waste and Hazardous Substances Director's Office - 302-739-9400
Division of Water Information - 302-739-9950
Dock/Dredging/Bulkheads/Rip-Rap/Wetlands & Subaqueous Lands - 302-739-9943
Emergency Prevention and Response - 302-739-9404
Environmental Crimes Unit - 302-739-9401 or 1-800-662-8802
Environmental Laboratory - 302-739-9942
Hazardous Waste - 302-739-9403
Industrial Stormwater Permits - 302-739-9946
Loans & Grants for Wastewater and Septics (Financial Assistance Branch) - 302-739-9941
Medical Waste - 302-739-9403
Non-Hazardous Liquid Waste Transporters - 302-739-9948
On-site Wastewater Licensing Program - 302-739-9948
Open Burning - 302-739-9402
Outreach Ombudsman - 302-395-2600
Recycling - 302-739-9403
Septic System Permits - Large Systems (Community & I/A) State-wide - 302-739-9948
Septic System Permits - Small Systems for Kent & New Castle Counties - 302-739-9947
Septic System Permits - Small Systems for Sussex County & Holding Tank Compliance Program - 302-856-4561
Site Investigation & Restoration Section (Superfund/Brownfields) - 302-395-2600
Solid Waste - 302-739-9403
Source Water Protection - 302-739-9945
Surface Water Discharge Permits (NPDES) - 302-739-9946
Underground Injection Control & Spray Irrigation - 302-739-9948
Underground Storage Tanks - 302-395-2500
Wastewater Collection, Conveyance and/or Treatment Facility Construction Permits - 302-739-9946
Wastewater Treatment Facility Operators - 302-739-9946
Water Allocation Permits - 302-739-9945
Water Testing - Drinking Water (Division of Public Health) - 302-741-8630
Water Supply - 302-739-9945
Well Driller's License - 302-739-9944
Well Permits & Licensing - 302-739-9944
Wells - 302-739-9945
Wetlands and Subaqueous Lands Section - 302-739-9943