



Air and Waste Matters

DNREC Division of Air and Waste Management

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Volume 1, Issue 2

July 2006

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DNREC's Air Quality Section—Protecting Delawareans

This issue of *Air and Waste Matters* features air quality in Delaware. Air pollution is one of the major environmental problems facing our state. For those at risk, the quality of our air can be a critical factor in determining quality of life.

DNREC's Air Quality Management Section is dedicated to managing and implementing programs to help improve our air quality and ultimately our health. The articles contained

in this issue outline some of the innovative and important work being done to protect Delawareans.

More information on air quality and the Division's Air Quality Management Section can be found at:

<http://www.awm.delaware.gov/AirQuality.htm>.

Additional information on the Division of Air and Waste Management can be found at:

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

DART First State Ozone Action Transit Partners Program



DNREC is once again proud to announce that we have joined DART First State and the Delaware Transportation Management Association, along with many other responsible employers and organizations in making the air we breathe a little healthier for us all.

By joining the DART First State Ozone Action Transit Partners program, we are making a conscious effort to educate our employees on the benefits of taking action on Ozone Action days by promoting the use of public transit. Using public transit is an easy way to remove cars from the road, thus, reducing ozone pollution.

After notification of a forecast Ozone Action Day from the local forecast team, the Ozone Action program notifies participants by e-mail. The regional Ozone Action program alerts local media as well, so the public has access to the information, too. By taking a

few voluntary actions, we can all help to reduce ground-level ozone, and improve the quality of the air we breathe. For more information on reducing ozone pollution, please visit: <http://www.awm.delaware.gov/Info/Ozone.htm>. To receive e-mail alerts when the ozone level in Delaware is anticipated to reach unhealthy levels, please visit: <http://www.dnrec.state.de.us/DNREC2000/admin/maillists/maillists.htm>.

—Article by Philip Wheeler (Air)



DART hybrid bus service in Wilmington.

The camera has innumerable applications that range from “looking” for VOC emissions from routine everyday activities such as refueling at gas stations to complex facilities such as the Delaware City petroleum refinery.

Looking for Air Emissions Using New Infrared Imaging

DNREC’s Air Quality Management Section has begun monitoring fugitive volatile organic compounds (VOCs) emissions using a new **Gas FindIR camera**. This state-of-the-art infrared video camera uses energy, instead of visible light, to “see” VOCs. The camera has innumerable applications that range from “looking” for VOC emissions from routine everyday activities such as refueling at gas stations to complex facilities such as the Delaware City petroleum refinery.

In April 2006, DNREC staff observed a ship off-loading crude oil, a process called “lightering,” from a tanker at the Big Stone Anchorage in the Delaware Bay, eight nautical miles north of Lewes. When crude oil is pumped into an empty vessel, VOC vapors are displaced and pushed out through the stacks called “mast risers” into the atmosphere. As soon as pumping began, the camera revealed the VOC vapors as black “smoke” (see photos below). The prevailing winds blew those emissions, invisible to the naked eye, west towards Delaware.

Recently, DNREC successfully negotiated an agreement and air pollution control permit with Maritrans Corporation. Maritrans has committed to a process of vapor recovery to prevent these VOC emissions and has invested more than a half billion dollars to replace their fleet of ships with state-of-the-

art vessels containing built-in vapor recovery equipment and other safety features.



FLIR Systems’ Gas FindIR camera.

Manufactured by FLIR Systems, the Gas FindIR camera has been used on compliance inspections at several companies to help determine if VOCs leak from their equipment and whether the facility meets its regulatory obligations for leak detection and repair requirements. The new GAS FindIR-camera offers DNREC the ability to implement cutting-edge technologies in its aggressive efforts to achieve healthier air quality for Delawareans, and provide a level playing field for those companies that make investments in controlling emissions.

—Article by Bruce Steltzer/Jim Werner (DAWM)



Crude oil tankers performing lightering operations.



VOC emissions visible during lightering operations.

2006 Ozone Action—Summer Season

During the spring and summer months, high temperatures and sunlight combine with pollution to form a dangerous mixture called **ground-level ozone**. High levels of ozone can cause health problems for many people, especially children, seniors and people with respiratory ailments. As part of the Air Quality Partnership of Delaware, DNREC's Air Quality Section helped coordinate the **2006 Ozone Kickoff** in Wilmington to educate the public about the health hazards associated with air pollution.

Ozone is a colorless gas that is the main ingredient of smog. The air pollutants contributing most to ozone formation are volatile organic compounds (VOCs) and nitrogen oxides (NOx). There are many sources of VOCs and NOx in Delaware, including large and small industrial facilities, gasoline vapors, vehicle exhaust, chemical solvents and natural sources. Also, many of these compounds are blown in from other major urban areas located "upwind" from Delaware.

DNREC's Air Quality Section has been measuring Delaware's air quality for over 20 years. We are required by federal statute to monitor levels of specific pollutants on an hourly basis. Of all the pollutants that are monitored in Delaware, **ozone and particulate matter** occurs at levels that are classified as "unhealthy." Fortunately, the number of days with "unhealthy" levels of ozone has been declining in the state for more than a decade. This is largely due to pollution control and prevention programs, including

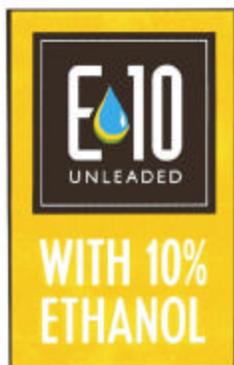


Dr. Karyl Rattay (Nemours Services) at the Kickoff.

tougher emission controls on large industries, cleaner-running cars, vehicle emission inspection programs and reformulated gasoline. However, ozone levels continue to be a problem in Delaware. Check today's ozone/air quality forecast at: <http://www.airqualitypartnership.org> (sponsored by the Air Quality Partnership of the Delaware Valley). You can also view Delaware's current ozone levels at DNREC's air monitoring stations at: http://www.dnrec.state.de.us/air/aqm_page/airmont/air.asp. To receive e-mail alerts when the ozone level in Delaware is anticipated to reach unhealthy levels, please visit: <http://www.dnrec.state.de.us/DNREC2000/admin/maillists/maillists.htm>.

—Article by Terri Brixen (Air)

Ethanol at the Pump - Here to Stay?



The gasoline you put in your car today now contains **10% ethanol (E10)**. In May 2006, refineries in the area changed their recipe for how they make gasoline. Refineries replaced a chemical known as methyl tertiary butyl ether (or MTBE) with ethanol because MTBE contaminated our nation's drinking water supplies. Both chemicals are called oxygenates, make gasoline burn cleaner, and boost the level of octane found in gasoline.

Last summer, Congress passed the **2005 Energy Policy Act** which required oil companies to double

the amount of ethanol used in our fuel supply. Across the country, 30 new ethanol plants are being built to meet this new demand. Ethanol can be made from renewable resources such as corn or sugar.

Soon consumers will be able to purchase gasoline containing **85% ethanol or E85** at two gas stations in Delaware. E85 can only be used in certain types of cars called **flexible-fuel vehicles**. Most gas stations will have to be retrofitted with new tank systems if they decide to sell E85 fuel.

Learn other energy saving tips at the Delaware Energy Office website: <http://www.delaware-energy.com/>. Find the cheapest gasoline prices in your area at: <http://www.delawaregasprices.com/>. —Article by Alex Rittberg (Tanks)

Regulation No. 1144 applies to all stationary generators, including those on poultry farms, except for generators that are rated at 10 kilowatts (kW) or less, or generators that are mobile.

DNREC adopted a new regulation on January 11, 2006 to control the emissions from all stationary generators in Delaware, so that their emissions do not adversely impact the public's health, safety, and welfare. Many poultry growers have stationary generators installed on their farm(s) to provide backup power during power outages. The new regulation, **Regulation No. 1144—Control of Stationary Generator Emissions**, has many new requirements that will affect most poultry growers.

Regulation No. 1144 applies to **all stationary generators**, including those on poultry farms, **except** for generators that are rated at 10 kilowatts (kW) or less, or generators that are mobile. Examples of the types of generators that are exempt from the regulation include small Honda-type portable generators and power-take-off driven generators.

The first requirement, which all stationary generator owners must do, is **submit an initial notification to DNREC**. A form is available on the Regulation No. 1144 website at: <http://www.awm.delaware.gov/Info/Regs/AQMRReg1144.htm>. The generator owner can fill out and return the form to the Air Quality Management Section via email, fax or mail. This initial notification will include information about the generator and its owner, and a declaration of whether the generator operates as an back-up generator for emer-

gencies only, or as a distributed generator (for emergency and non-emergency purposes).

The deadline for submitting this information to DNREC was April 11, 2006, for all existing generators

(installed prior to January 11, 2006). Although this deadline has passed, DNREC is working to help generator owners understand and comply with the requirements of the regulation. Owners of existing generators should still submit an initial notification as soon as possible. Also, this initial notification information must be submitted **before** a new generator is installed.

The regulation does not restrict how long a generator may run when it is being operated during an emergency (a power outage), during testing, or for maintenance. A distributed generator (running for non-emergency purposes) may run at any time, for any reason, and for any length of time.

However, **no testing or maintenance** may be performed before 5 p.m. on a day that has a **Ground Level Ozone Pollution Forecast or Particle Pollution Forecast of "Code Red" or "Code Orange"** as announced by DNREC. These forecasts occur on days when Delaware's air quality is at unhealthy levels, and the forecasts are posted on DNREC's website and are typically announced by local newspapers and television news programs.

Other requirements include using **low sulfur diesel fuel and keeping records of a generator's operating hours and fuel usage**, which must be recorded for **each calendar month**. Generator owners must also demonstrate to DNREC that they are **meeting the regulation's requirements**. This can be done by submitting documentation to DNREC which verifies that the applicable emissions standards, sulfur content limit, recordkeeping and operating requirements are being met.

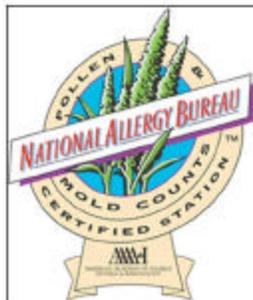
For more information about Regulation No. 1144, please visit: <http://www.awm.delaware.gov/Info/Regs/AQMRReg1144.htm>. For further assistance, copies of the regulation, or forms, please contact Mark A. Prettyman at (302) 739-9402, or via email at: mark.prettyman@state.de.us.

—Article by Mark Prettyman (Air)



Generator

New Pollen Count Station and Information Line



What is lighter than a feather, smaller than the head of a pin, yet can make a grown man cry? Or it may make him sneeze, cough and suffer burning, itchy eyes, if he happens to be among the

10% of the population who experience hay fever or seasonal allergic rhinitis. **The culprit is pollen**, the dust-like male gamete or male sexual reproductive cell of plants, vital to plant life but often trouble for people with allergies or asthma.

People in Delaware who are allergic to tree pollen undoubtedly experienced the symptoms of hay fever this spring. This season's unusually dry weather yielded many days of high or very high pollen counts as the grains tend to stay airborne longer during dry conditions. In fact, the highest tree pollen count yet recorded at the New Castle sampling site operated by the Air Quality Section occurred on April 20th of this year.

In response to requests from allergy sufferers, the Air Quality Section has been providing regular pollen and mold spore counts to the public for several years. Sampling takes place from **March 1st to October 15th** each year during the months when significant counts can be expected. In 2004, the Air Quality Section obtained the industry standard, **the Burkard Spore Trap**, to achieve improved capture efficiency of the smallest mold spores, in addition to having the equipment required for certification with the National Allergy Bureau's pollen counting network. With a commitment to enhance the pollen counting program, the Air Quality Section applied and received approval to participate in the National Allergy Bureau's pollen counting network meeting the separate certification requirements to report both pollen counts and mold spore counts. This pollen and mold spore counting station, located at the DNREC office on Grantham Lane in New

Castle, is **Delaware's only station** in the network.

The pollen sample is captured on a glass slide or transparent tape, then stained and examined under the microscope. The resulting counts representing a 24-hour period are reported as particles per cubic meter of air and are updated three days a week. Counts are organized into four categories: trees, grasses, weeds and molds. The counts are also rated as either absent, low, moderate, high or very high according to the criteria established for each category by the National Allergy Bureau. **These ratings reflect how likely allergy sufferers are to experience symptoms of hay fever or asthma.**

Studies have implicated pollen in more serious health issues for some individuals. For example, a study by Salvaggio, et al in 1971 found a relationship between ragweed counts and high asthma admission days at Charity Hospital in New Orleans. The authors also reported a negative effect on asthmatics from total spore and pollen counts. Closer to home, a study using pollen data from Air Quality Management found "elevated tree and weed pollen levels were significantly related to increased number of Emergency Department visits for asthma." This study was authored by Helen Wang, MD, Stephen McGredy, MD, and Ejaz Yousef, MD of Thomas Jefferson University/A.I. duPont Hospital for Children, and **Mohammed Majeed, PhD of Air Quality Management, DNREC.**

Pollen data from Air Quality Management is currently being used for a study conducted by Steven Kelsen, MD of Temple University comparing the effectiveness of two well-accepted treatments for pollen induced, seasonal allergic rhinitis, FLONASE and Singulair. DNREC's pollen and mold report is available at: <http://apps.dnrec.state.de.us/Pollencount/PollenCount.aspx> and by phone at (302) 324-2019.

—Article by Mike McDowell (Air)

"We are a National Allergy Bureau certified station for sampling pollen and mold spores— the only station in Delaware to regularly take pollen counts," said Joe Martini, with DNREC's Air Quality Section.



Burkard Spore Trap

Every member of the Emergency Response Team receives extensive training designed to ensure the safety of other emergency response personnel, the public and themselves, during a chemical release incident.



Emergency responders performing decontamination activities.

DNREC's Emergency Response Team—24/7

A tanker truck full of isopropyl acetate overturns near a residential area in the middle of the night. Rail cars full of chlorine derail during the evening rush hour. A C-5 aircraft crash-lands in a field early in the morning, releasing jet fuel. A post office notices white powder falling out of an envelope. Epic rainfall in Seaford and Georgetown strands numerous residents in rushing flood waters. These are just a few of the incidents that the Division of Air and Waste Management's Emergency Response Team stands ready to respond to, **24 hours a day, 7 days a week.**

The Emergency Response Team consists of three Environmental Scientists, twelve Environmental Enforcement Officers and several supplement responders. The Environmental Scientists are dedicated to responding to spills and releases of hazardous chemicals, while the Enforcement Officers include emergency response as one of their primary duties. The Division's supplemental responders are staff from other DNREC programs that are on stand-by duty during evenings and weekends to provide for **around-the-clock hazardous materials response.**

Every member of the Emergency Response Team receives extensive training designed to ensure the safety of other emergency response personnel, the public and themselves,

during a chemical release incident. Each are provided with personal safety equipment and a response vehicle outfitted with a variety of monitoring equipment and spill clean-up materials.

During normal working hours, the full-time responders and/or enforcement officers respond to calls. **After hours and on weekends and holidays, one enforcement officer and two responders are on call.** While on call, they need to have their response vehicle and cell phone with them at all times, so that they are able to respond to an incident from wherever they are. So now if you see a response truck at a movie theater or restaurant on a Saturday night, you will know why it's there.

Once they arrive at an incident, our responders work with the local fire company personnel or police officers to assess the site, stop the leak or take measures to prevent a leak and determine if any nearby homes or businesses need to be warned or evacuated. The emergency responders are the ones to suit up in **hazard protection suits** when needed and conduct air monitoring to ensure that the site is safe for both emergency personnel and local residents. Finally, they arrange for a contractor to get on-site immediately to begin cleanup and investigation of the cause of the release.

So what about the white powder? To date, Delaware has not had a single mail-borne anthrax case, but our responders have responded to **over 700 white powder incidents.** In most cases, the powder was talc used to separate mail in bulk mailing operations. In some others, it came from the latex gloves used by mail handlers to protect themselves from anthrax. Although they have yet to have a real anthrax case, our responders treat all calls seriously. And they will continue to remain trained and ready to respond to protect human health and the environment 24/7.

To report a spill or release, or any environmental violation, please call DNREC's 24-hour report and spill notification line at 1-800-662-8802 or #367 for Verizon Wireless users.

—Article by Marjorie Crofts (DAWM)

Delaware Bay Oil Spill—Quick Response and Cleanup

Tuesday, April 25, 2006—DNREC's Emergency Response Team responds to the Delaware Bay Mystery Oil Spill. The spill consists of **sporadic sheening and tar balls** in a 2-mile by 1/2-mile area in mid-Delaware Bay, north of Port Mahon and south of Bombay Hook National Wildlife Refuge. Emergency responders dispatched oil skimmers and deployed barrier booms. Strong winds hampered oil recovery, but greatly accelerated the weathering of the oil while on the water. The weathering of the oil resulted in tar ball formation that mitigated damage to the shoreline habitats.

By Thursday, April 27, 2006, westerly winds shifted to north-northeasterly winds. The wind shift spared New Jersey's shore from further oiling, however, it impacted Delaware's shoreline from Woodland Beach south to Cape Henlopen. The impacts varied between no oil to light to very light oiling. The peak cleanup effort and shoreline assessments to verify the beaches were clean occurred between Sunday, April 30 and Thursday, May 11.

In addition to the federal U.S. Coast Guard, National Oceanic Atmospheric Administration (NOAA), and US Fish and Wildlife presence, DNREC deployed its Fish and Wildlife and Soil and Water Conservation biologists and naturalists to monitor Delaware's shoreline throughout the cleanup.

April and May is the most critical time of the year for an oil spill in the Delaware Bay to occur. Impacts from the oil spill to Delaware's shoreline could affect sensitive natural resources including piping plover nesting, horseshoe crab spawning and migratory shorebird feeding areas. The timely response and cleanup efforts were essential to protecting these areas.

The active cleanup ended on May 11 and a 30-day monitoring phase began. As of June 1, no additional oil from this oil spill was reported to DNREC. The response was closed on June 10, 2006, following the 30-

day monitoring phase during which no additional impacts were found.



Contractors perform cleanup on the beach.

The cleanup included surveying nearly 50 miles of Delaware's shoreline from Bombay Hook south to Cape Henlopen. Approximately 28 miles received some very light oiling, and 6 miles between Kitts Hummock south to Big Stone Beach received light oil in the form of tar balls entrained in the debris left at the high tide line.

Please call DNREC's 24-hour spill notification line at 1-800-662-8802, or #367 for Verizon Wireless users, to report an oil spill or other release of a pollutant.

—Article by Matt Higgins (ERT)



Shorebirds and horseshoe crabs along the Delaware Bay.

Impacts from the oil spill to Delaware's shoreline could affect sensitive natural resources including piping plover nesting, horseshoe crab spawning and migratory shorebird feeding areas.

DELAWARE
DEPARTMENT OF
NATURAL
RESOURCES AND
ENVIRONMENTAL
CONTROL

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Integrity, Respect and Customer Focus

The Division of Air and Waste Management oversees the handling, transferring and storing of solid and hazardous materials by regulating, monitoring, inspecting, enforcing and responding to emergencies. The Division also implements the state's air monitoring, permitting and compliance programs. The Division's responsibilities include administering air and waste programs including:

- Delaware's Air Quality Section — air monitoring and regulating air emissions.
- Tank Management Branch — maintenance and installation of underground and above ground storage tanks & overseeing cleanup of tanks which may leak.
- Emergency Prevention and Response Branch — preventing industrial accidents, assuring emergency planning and community right to know, and responding to environmental emergencies.
- Enforcement Section — the Environmental Protection Officers enforce the state's air, waste and water pollution laws and participate on DNREC's Environmental Response Team by responding to environmental emergencies.
- Site Investigation and Restoration Branch — remediation of sites contaminated by hazardous substances (Superfund/Brownfields/Voluntary Cleanup Program).
- Solid and Hazardous Waste Management Branch — reuse, recycling, transport and disposal of solid and hazardous waste.

EASY REFERENCE PHONE NUMBERS

24 Hour Report and Spill Notification Line - 1-800-662-8802
Aboveground Storage Tanks - 302-395-2500
Air Quality - Dover Office - 302-739-9402
- New Castle Office - 302-323-4542
Asbestos - New Castle - 302-323-4542
- Kent & Sussex - 302-739-9402
Boiler Safety - 302-744-2735
Brownfields - 302-395-2600
Emergency Prevention and Response - 302-739-9404
Enforcement - 302-739-9401 or 1-800-662-8802
Hazardous Waste - 302-739-9403
Medical Waste - 302-739-9403
Open Burning - 302-739-9402
Outreach Ombudsman - 302-395-2515
Recycling - 302-739-9403
Site Investigation & Restoration Branch (Superfund/Brownfields) - 302-395-2600
Solid Waste - 302-739-9403
Underground Storage Tanks - 302-395-2500

DID YOU KNOW?

On June 27 through June 29, DNREC participated with other officials from the US Coast Guard, Pennsylvania and New Jersey, along with oil industry and shipping representatives, in a command-post exercise designed to simulate a possible worst-case discharge of approximately 150,000 gallons of oil at the Big Stone Anchorage in the lower Delaware Bay. The exercise provided training for the response agencies and the oil shipping industry in conducting an efficient and effective initial response following established contingency plans.