



Air and Waste Matters

DNREC Office of Environmental Protection

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Universal Recycling—First Milestone

Sept. 15 marked the first milestone for implementation of universal recycling service statewide in Delaware. All single family homes that have trash service are now also receiving recycling service from their waste haulers, as are most restaurants and bars.

Single family residences in the State have been provided with new recycling containers for curbside recycling service at least once every other week.

Single stream recycling, which allows all recyclables to be tossed together into one container for pickup, has made recycling easier than ever before. And happily, waste haulers are already reporting that recycling participation is overwhelmingly up!

Single stream recycling not only makes recycling more convenient to the consumer, it makes recycling collection much more effective for the hauler.

(Continued on page 2)



W. Miller, SHWMS

One of the new "Delaware Recycles—It's second nature." billboards, which has high visibility along Route 8 in Kent County.

Universal Recycling—First Milestone *Continued...*

The Sept. 15 implementation date is the first step in providing recycling service to every resident and business in Delaware, an objective of the collaborative process that culminated in Delaware's comprehensive universal recycling legislation and successful program. Diversion of waste from landfills is a key economic and environmental goal of universal recycling.

Reducing waste reduces consumption of our natural resources, generates new businesses and job opportunities, and keeps disposal costs down, no longer fueled by the millions of dollars spent to increase our landfill capacity.

The next universal recycling implementation date is Jan. 1, 2013, at which time waste haulers will be providing single stream recycling collection services to multi-family residential customers. By Jan. 1, 2014, commercial businesses will also participate in a comprehensive



recycling program in Delaware.

With such an enthusiastic response to curbside recycling services, municipalities and waste haulers are already reporting significant reductions in trash going to the state's three landfills. And the trend can be expected to continue beyond 2014, helping to preserve Delaware's precious natural resources for generations to come.

For more information on recycling in Delaware, please visit:

www.recycling.delaware.gov

Article by M. Carl and C. Wirtz, WHS

WHAT CAN WE RECYCLE?

Recycling includes separating, collecting, processing, and ultimately using a material that would have been otherwise thrown away. Nearly all single-stream recycling programs in Delaware accept the following items:

- Paper - newspaper, magazines, office paper, junk mail, cardboard, boxboard (cereal boxes), clean paper bags and other types of paper
- Plastics - PET (#1) and HDPE (#2) such as soda bottles, milk jugs, grocery bags, and detergent containers
- Glass - bottles and jars (clear, green, and amber)
- Aluminum - beverage containers
- Other metals - steel and tin cans

Examples of what is NOT acceptable in most programs:

- Anything with food residue or liquids
- Used aluminum foil or trays
- Plastic food trays
- Styrofoam
- Plastic cups/lids
- Waxed paper (including milk cartons)
- Plastic shell packaging
- Yard waste including grass or tree trimmings (see p. 7 for composting info)

For the most accurate description of what is acceptable in your recycling program, please contact your specific recycling collector.

Analyzing Delaware's Oil Spill Liability

So what does a guy who used to work for BP have to say about Delaware's oil spill liability and risk of financial exposure?

Why, fortunately for Delaware, quite a bit! Last summer, Tom Battagliese was working as an intern in the Division of Waste and Hazardous Substance's Site Investigation and Restoration Section (SIRS). He was tasked with doing an analysis on oil spill liability and the associated risk of financial exposure in Delaware. The research and analysis was completed as part of the Delaware Environmental Institute (DENIN) at the University of Delaware, with funding provided by the National Science Foundation's Experimental Program to Stimulate Competitive Research (EPSCoR) in Delaware.

The subject is very timely in the wake of BP's *Deepwater Horizon* oil spill last year, the largest marine spill in the history of the petroleum industry. Recent proposals to open the Mid-Atlantic coast to offshore drilling, also acted as a catalyst for DNREC to evaluate Delaware's Oil Pollution Liability statute, 7 *Del. Code*, Chapter 62. The analysis focused on determining whether Delaware's statute, along with the federal Oil Pollution Act (OPA) and Oil Spill Liability Trust Fund, was sufficient to protect the State's environment and natural resources.

Prior to implementation of Delaware's Chapter 62, there were no liability limits established for releases of petroleum products in Delaware's waters. Battagliese's analysis showed that although the intent was to be protective in 1977, imposing liability limits severely limited the amount that the State could recover in the event of a large or catastrophic spill.

Additional requirements regarding evidence of financial responsibility from owners and operators of vessels and facilities in Delaware have also fallen behind because they were tied to the established liability limits.



Tom Battagliese at the Slough's Gut Natural Resource Damage Assessment and Restoration (NRDAR) site.

Although Delaware's Hazardous Substances Cleanup Act provides some funding for spill response activities and damage remedy, there is no funding mechanism to assure liquidity of State funds to protect the State's interest in the event of a large spill. The general assumption that the federal Oil Spill Liability Trust Fund will cover costs not be incurred by a responsible party is no longer correct if the federal trust fund is insufficient or underfunded, especially given a catastrophic release.

Based on extensive research, Battagliese's analysis indicated that Delaware's statute and associated regulatory policies are not currently adequate for protecting Delaware from significant financial exposure in the event of a large or catastrophic release. Battagliese provide several recommendations for DNREC and the State of Delaware to reduce financial exposure and protect State interests and natural resources. His recommendations are being carefully considered for timely implementation.

Article from T. Battagliese, Aug. 2011 and C. Wirtz, WHS

Cleaning Up the Chrysler Site

How do you clean up a large automobile manufacturing site with a short timetable for high-tech redevelopment? Very carefully!

The former Chrysler Newark Assembly Plant site has been integral part of the Delaware's manufacturing and social fabric for decades. However, that also means decades of manufacturing operations that can contribute to soil and groundwater contamination. Add the accelerated timetable and high-profile nature of the site and you have a very challenging cleanup.

The Division of Waste and Hazardous Substances' Site Investigation and Restoration Section (SIRS) and Tank Management Section (TMS) have met the numerous challenges throughout the ongoing remediation of the former Chrysler site.

Located adjacent to the University of Delaware's (UD's) main campus, the 272-acre site was purchased by UD for \$24 million in November 2009. The site, now UD's Science and Technology Campus, is currently owned by 1743 Holdings, LLC, a wholly owned subsidiary of UD.

Redeveloping the Science and Technology Campus represents the largest-ever expansion of UD's Newark Campus.

Once completed, the site could also accommodate a transit-oriented project with both retail and residential space. Plans are being finalized to bring the first tenant, Bloom Energy to the site. Bloom Energy has plans to build a new, high-tech manufacturing hub in Delaware.



W. March, SIRS

The entrance to the complex has a new look.



D. Levandoski, UD

The former Chrysler water tower now prominently displays UD's logo.

Over the past year and a half, work has occurred at a brisk pace to prepare the site for redevelopment. 1743 Holdings has carefully coordinated various types of contractors to complete tasks ranging from asbestos abatement to utility relocations to HVAC system relocation, which required the use of a massive crane that was so large it had to be transported in pieces and constructed on site.

URS Corporation is decommissioning and demolishing various buildings at the site. More than 3.7 million square feet of structures, in excess of 70 thousand tons of recycled material have been cleared to

date. Throughout the decommissioning and demolition process, approximately 85% of the material from the site has been recycled.

(Continued on page 5)

Cleaning Up the Chrysler Site *Continued...*

In consideration of the potential impacts to neighboring businesses and residents, 1743 Holdings hired an environmental contractor, BrightFields, Inc., to perform perimeter air monitoring (dust, asbestos, and lead) during all site demolition and concrete-crushing activities.

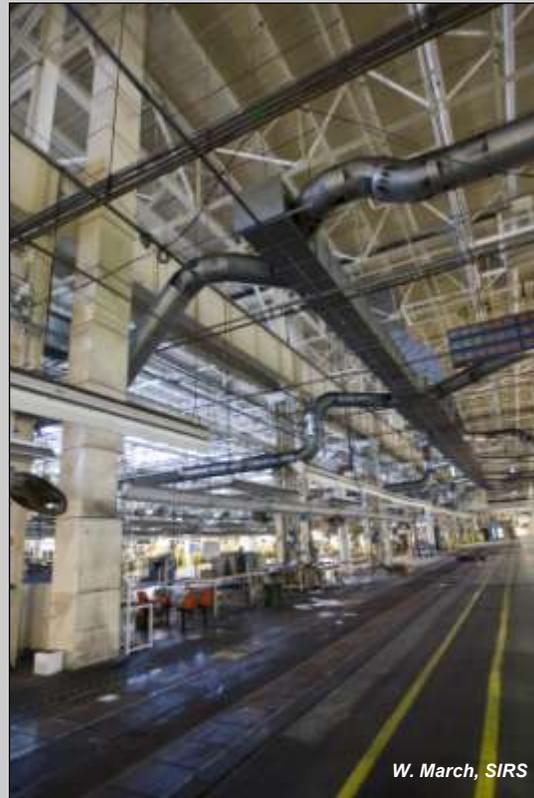
The results of the monitoring have been posted on UD's project website on a weekly basis. Dust suppression methods, such as wetting, were used on site during dust-generating activities. The data indicated that there were no air quality exceedences above action levels from the site.

SIRS and TMS also worked with Duffield Associates, a certified Hazardous Substance Cleanup Act (HSCA) consultant for 1743 Holdings, to address environmental issues throughout the remediation and redevelopment processes. TMS has been closely involved with the site since the 1980s due to the presence of regulated underground and aboveground storage tanks (USTs and ASTs). With TMS' oversight, as of this past spring, all known USTs and registered ASTs have been removed from the site.

Under SIRS, the plan for remedial implementation has been to divide the 272-acre site into operable units (OUs) to more effectively manage site investigation and cleanup. Currently, there are nine OUs. Each of the OUs is in various stages of remediation ranging from initial investigation to signed Final Plans of Remedial Action. The contamination at the site ranges from pockets of elevated metals in soil associated with imported fill material, to chlorinated and non-chlorinated hydrocarbons co-mingled in groundwater in certain areas, due to historical UST releases and paint-mixing operations.

As part of the redevelopment at the site, it is also envisioned that some portions of the land and natural features may be restored, such as the Silver Brook. The stream runs northwest to southeast and is contained in a culvert beneath the site. Duffield Associates collected sediment and surface water samples as part of an assess-

ment of Silver Brook prior to the start of decommissioning/demolition. This assessment also included a video survey of the culvert.



W. March, SIRS

Interior of one of the former assembly lines.

DNREC and UD are hosting public workshops and community meetings to provide updates to area residents and other interested parties. UD also created a project website to document and share the ongoing redevelopment activities with the public. To see past progress and future happenings at the site, please visit:

<http://www.udel.edu/scitechsite/>.

The completion of the project will yield great benefits to both the university and the State of Delaware in the form of enhanced academic and research facilities, added professional/academic partnerships, and job creation for our citizens.

Article by L. Hall and W. March, SIRS

Volunteering with Divisions of Air, Water and Waste

There are many ways to lend a hand at DNREC and make a difference in protecting Delaware's precious natural resources. Opportunities to give back are detailed at DNREC's new volunteer website:

www.dnrec.delaware.gov/volunteer.

Here's how to help out at the Divisions of Air Quality, Water, and Waste and Hazardous Substances:

The Division of Air Quality is dedicated to improving Delaware's air quality by working with citizens and businesses to protect public health, welfare and the environment. Volunteers can help play a key role in meeting this mission and improving the environment. Volunteer opportunities include: outreach and education, and citizens air quality monitoring networks. To learn more about volunteer projects and programs with the Division of Air Quality, please contact Terri Brixen at 302.323.4542 or terri.brixen@state.de.us.

The Division of Water manages and protects the state's water resources through various water quality monitoring, conservation and protection programs by providing technical assistance, laboratory services, regulatory guidance and implementation, educational services and research. Volunteers can help the Division sustain and protect our state's groundwater and surface waters.

Volunteer opportunities include stream assessments, laboratory projects, document archiving, and mitigation projects. To learn more about volunteer projects and programs in the Division of Water, please contact Terri Cole or Katie Painter at: 302.739.9942 or,

terri.cole@state.de.us/
katherine.painter@state.de.us.

The Division of Waste and Hazardous Substances (WHS) is responsible for emergency planning and response to environmental and chemical incidents; regulating the storage, transfer, and disposal of waste (solid, infectious and hazardous); storage tanks and boilers; and the restoration of sites that have been contaminated by petroleum and hazardous chemicals.

Volunteers with WHS assist by serving on environmental committees and councils, and by participating in special environmental initiatives. Volunteer input and support is crucial to helping the division protect the environment, and public health and safety of Delawareans. For more information, please contact Christina Wirtz, Outreach Ombudsman for WHS at 302.395.2600, or by e-mail at:

christina.wirtz@state.de.us.

From Giving Back, Outdoor Delaware-Summer 2011 and T. Brixen, DAQ; K. Garrison, DW; and C. Wirtz, WHS



C. Shaffer, OTS

Christine Brixen, a student at UD, volunteered to work on displays at the Delaware State Fair. She also designed a brochure for the Division of Water to help State Fair attendees better understand how to conserve and protect our water resources.

Falling Leaves—Mining for Black Gold

It's that time again, when the trees change color and a crisp chill is in the morning air. Fall is here! And with the season, comes the lovely sight of bright, drifting leaves; and inevitably, the unattractive piles of sodden, brown ones. Who wants to rake wet leaves?

Why not try something different and compost them this year! Especially easy is simply raking the dry leaves directly beneath shrubs and into flower beds to act as natural mulch. It may take longer for the leaves to breakdown, but it's the lazy gardener's way to a lush, healthy garden next spring. When matted down from the winter rain and snow, you can hardly tell that the leaves are there. However, they form a damp, protective barrier around the plants, keeping weeds out and precious moisture in during the summer heat.

You can also rake them on a plastic tarp and drag them to an inconspicuous corner of your backyard to compost. All you need is an enclosure of sorts to keep them from blowing away. Chicken wire done in the round is good; lattice works well on the square. Just a quick trip to the hardware store for a few supplies and you will be ready to compost like a pro. Or, why not shop in your own garage and repurpose existing supplies for a more creative compost bin? Think leftover building materials, such as stone or brick, or even wooden pallets, which can be painted a nice, cheerful color or left natural for years of service (see photo above).

When choosing a location for your compost, be sure to pick a spot that is flat and well drained. A shady location is preferable; all day in direct sunlight may cause the pile to become too hot and to dry out. Make sure the enclosure is at least 20 feet away from the nearest house, yet still close to a source of water (if you think it may dry out). Also, avoid placing the enclosure against a tree or wooden building; the compost could cause the wood to decay.



Compost unit made from pallets at Bellevue State Park.

Alternating the types of materials you add to the bin will speed up the decomposition process, especially if you alternate high-carbon content (mostly brown such as fall leaves) with high-nitrogen content (basically green, such as grass clippings and veggie scraps) and occasionally mix the contents of the bin. Also, when first setting up your compost bin, add a small amount of dark, organic-rich garden soil as a good source of microorganisms essential to decomposition.

Once your bin is in place, you can immediately begin to fill it with yard wastes and kitchen scraps to create your own "black gold." Visit DNREC's yard waste site for a list of what can and cannot be put into the compost bin, and other helpful composting information:

<http://www.dnrec.delaware.gov/yardwaste/Pages/YardWasteHomeowners.aspx>.

Need additional help? Call Hetty Francke, Master Gardener/Master Composter at Delaware's Cooperative Extension Office at: hettyw@udel.edu or 302-475-9157.

*From DNREC's Yard Waste Website
and C. Wirtz, WHS
Photo: H. Francke, DCEO*

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RESOURCES AND
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CONTROL

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We're on the web!
www.awm.delaware.gov

Visit the Site

Investigation and
Restoration Section
Brownfields Website

at:

[http://
www.awm.delaware.gov
v/SIRB/Pages/
Brownfields.aspx](http://www.awm.delaware.gov/v/SIRB/Pages/Brownfields.aspx)

for more Brownfields
information.



The Division of Waste and Hazardous Substances includes the following sections and responsibilities:

- **Emergency Prevention and Response** — preventing industrial accidents, assuring emergency planning and community right-to-know, and responding to environmental emergencies.
- **Site Investigation and Restoration** — remediation of sites contaminated by hazardous substances (Superfund/Brownfields/Voluntary Cleanup Programs).
- **Solid and Hazardous Waste Management** — reuse, recycling, transport and disposal of solid and hazardous waste.
- **Tank Management** — maintenance and installation of underground and above ground storage tanks & overseeing cleanup of tanks that may leak. This section oversees the Boiler Safety Group as well.

EASY REFERENCE PHONE NUMBERS

24-hr. Environmental Report and Spill Notification Line - 1-800-662-8802

Aboveground Storage Tanks - 302-395-2500
Air Quality - New Castle Office - 302-323-4542
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 - 302-739-9949
Div. of Air Quality, Director's Office - 302-739-9402
Div. of Waste and Hazardous Substances, Director's Office - 302-739-9400
Div. of Water, Director's Office - 302-739-9950
Dock/Dredging/Bulkheads/Rip-Rap/Wetlands & Subaq. Lands - 302-739-9943
Emergency Prevention and Response - 302-739-9404
Environmental Crimes Unit - 302-739-9401 or 1-800-662-8802
Hazardous Waste - 302-739-9403
Loans & Grants for Wastewater and Septics (FAB) - 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 - 302-395-2515
Recycling - 302-739-9403
Septic System Permits - Large Systems Statewide - 302-739-9948
Septic System Permits - Small Systems for Kent & NCC - 302-739-9947
Septic System Permits - Small Systems for Sussex Co. & Holding Tank Compliance Program - 302-856-4561
Site Investigation & Restoration Section (NPL & Brownfields) - 302-395-2600
Solid Waste - 302-739-9403
Source Water Protection - 302-739-9945
Stormwater Permits - 302-739-9946
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 (Div. of Public Health) - 302-741-8630
Well Driller's License - 302-739-9944
Well Permits & Licensing - 302-739-9944