

The Ash Quandary: The WTE industry's Dilemma is Our Dilemma

Sher Horosko, Carroll County, Maryland

Ash from a waste-to-energy (WTE) plant is a problem not an opportunity. Industry representatives speak of “beneficial uses.” It would be more accurate to ask: “*How do we reduce the financial and environmental harms associated with disposing of ash from WTE facilities?*”

This brief paper focuses on two questions:

- 1) What happens to residual ash from the Montgomery and Harford County Resource Recovery Facilities; and
- 2) A brief history of American Ash Recycling of Pa. Inc., the business that “recycled” ash from Montgomery and Harford counties in a pilot program.

What Montgomery and Harford counties do with residual ash.

In 2000 and 2001, the Montgomery County Resource Recovery Facility participated in a pilot project to “recycle” its ash into aggregates and structural fill. The Northeast Maryland Waste Disposal Authority supervised the project. The ash from the Montgomery County WTE facility was sent to American Ash Recycling of Pa. Inc. in York County for the purpose of marketing it as a “beneficial product.”

In 2000, Montgomery County “recycled” **36,846 tons of ash**. That same year, the county land filled an additional **101,068 tons** of ash. In 2001, the County “recycled” **29,775 tons of ash** and land filled **114,950 tons of ash**. (The “recycled” ash figures are from “The Montgomery County Maryland Solid Waste Fund Financial Disclosure for Fiscal Year 2004.”)

From 2002 to present, 100% of the residual ash from Montgomery County was sent to a landfill in Virginia where it is placed in a “technically equipped land fill cell.” The cell has a different liner to accommodate the toxicity of the ash. Ash from a WTE plant is between 10% and 20% by volume but more than 30% by weight. Weight is the salient consideration since all charges for transporting and land filling it are based on weight not volume.

Here are the amounts of ash transported from Montgomery County to Virginia for landfilling, by year:

2002	170,790 tons
2003	180,205 tons
2004	190,349 tons
2005	169,732 tons
2006	186,794 tons
2007	176,915 tons

In total, **1,074,785 tons** of ash from the 1,800 ton-per-day Montgomery County facility was landfilled over a six-year period.

In an earlier memo, we sent you figures outlining the cost of transporting the ash from Montgomery County to Virginia in FY 2007. That figure was \$6.9 million and represented the total cost of transporting the ash and land filling it in Virginia. Councilwoman Praisner's office in Montgomery County provided us with this information.

A review of Montgomery County financial data leads one to question why the County would not "recycle" its ash for beneficial purposes if the County could save money by doing so. Why would the County pay \$6 million per year, on average, to transfer the residual ash to Virginia if "recycling" ash for "beneficial use" is a viable option?

According to the Fall 1998 issue of *Waste Watch*, a publication of the Northeast Maryland Waste Disposal Authority, Harford County also participated in the American Ash Recycling of Pa. Inc. pilot program. The article says the county was interested in ash recycling "to further extend the life of its landfill."

According to the authority's website, the ash from the Harford County Resource Recovery Facility is now "screened to capture metals for recycling" and then used "as alternative daily cover" at the Harford County and Baltimore City Quarantine Road landfills. The use of ash as daily cover is characterized as a "beneficial use" by the Northeast Maryland Waste Authority. Harford County counts the ash utilized as daily cover toward its recycling rate. In 2007, 39,000 tons of ash from the Harford facility was used as daily cover, with the majority of it being used in Baltimore.¹ While allowable, it is a stretch to designate ash spread over a landfill as a recyclable product. "Recycling" is defined as diversion from disposal. The ash is still going to the landfill. The EPA says repeatedly that all landfills will eventually leak. Toxic ash from a WTE plant, spread as daily cover, will eventually find its way into our groundwater and it will do so more easily than placing it in a secure cell.

It is unlikely that Fredrick will be able to accept the ash from the proposed Regional facility for daily cover at its landfill owing to capacity constraints. Will the Carroll Commissioners agree to spread the ash on the Northern Landfill for daily cover? If not, will we follow the path of Montgomery County officials and pay upwards of \$6 million per year to transfer and landfill the ash out of state?

While we do not view the ash as having "beneficial uses," it is clear that WTE advocates have not secured "beneficial use markets" for Montgomery or Harford counties. Why should Carroll and Frederick citizens feel confident that aggregate markets would be located for ash from the proposed facility? As you will see below, the PA Department of the Environment recently decided the American Ash Recycling Company of York can no longer use the ash from Waste to Energy plants as a "beneficial aggregate."

¹ Harford County disposed of 39,000 tons as daily cover and land filled 10,000 tons in 2007. The State requires Harford County to mix the ash with dirt at a 50/50 ratio while allowing Baltimore City to apply the ash as daily cover without any soil added. The reason for this is unclear. In 2007, Harford municipal solid waste totaled 360,000 tons with 39,000 tons of ash being attributed toward their recycling rate or 10.8%. Conversation with Mr. C. Robert Ernst, **Recycling** Program Manager on 16 January 2008.

How can we be sure that Carroll and Frederick citizens won't have to shoulder another tax burden and pay the additional fees associated with the transportation and land filling of ash that Montgomery County citizens have to bear on their property taxes?

A brief history of American Ash Recycling of Pa. Inc., the business that “recycled” ash from Montgomery and Harford counties in a pilot program.

Back in 1998, The Northeast Maryland Waste Disposal Authority published two articles on recycling ash from WTE facilities in its publication *Waste Watch*. Both articles reference plans for the American Ash Recycling of Pa. Inc. to establish an operation in York County to recycle ash generated at the county's WTE facility for use in marketable aggregates.

The articles suggest opportunities for Maryland WTE facilities to make similar use of incinerator ash. As stated above, the Montgomery and Hartford WTE facilities participated in the American Ash Recycling of Pa. Inc. pilot program. (See enclosed articles.)

The Pennsylvania Department of the Environment (PA DEP) had granted American Ash Recycling of Pa. Inc. a permit “to process and apply its product AggRite for beneficial use.” On August 8th of 2007, the Council of the City of York passed a resolution opposing the application of American Ash Recycling of PA, Inc to extend its general operating permit with the PA DEP. A link to that resolution, detailing all the problems the community experienced with the ash, is included in this document. It offers insight into what our communities may anticipate if faced with an ash residual totaling over 150,000 tons per year.

In October of 2007, the PA Department of the Environment denied American Ash Recycling of Pa. Inc. its application for renewal. In a press release, Thomas Fidler, deputy secretary for waste, air and radiation management, stated: “American Ash Recycling has failed to demonstrate that AggRite is suitable for use as a structural or construction material, and has failed to comply with the terms of its existing permit.” Essentially, the PA DEP said the company failed “to meet the beneficial use standards outlined in DEP's regulations.” (See enclosed statements from the PA DEP).

In December of 2007, the PA DEP approved American Ash Recycling of Pa. Inc.'s application to remove metals from incinerator ash and use the ash as daily landfill cover. However, it restricted the company to storing no more than 4,900 tons of ash at its facility at any one time. Its previous permit allowed the company to store 180,000 tons of ash. The department also specified that the company has to keep the ash in buildings or containers to prevent dispersal by wind. Residents complained wind swept the dust into their neighborhoods and affected their breathing and that dust containing dioxins migrated to the Little Conewago Creek. The department asked the company to evaluate the feasibility of relocating its operations.

The experiment to turn ash into a “beneficial aggregate” that was managed by the Northeast Maryland Waste Authority in cooperation with American Ash Recycling and Harford and Montgomery Counties, failed. The only option left is to characterize

ash as a “beneficial daily cover” for a land fill operation. The ash replaces topsoil at a presumably lower cost. Do we wish to use toxic ash as our daily cover in Carroll? Or should we stick with topsoil? What poses the least potential for harm?

At the end of the day, the mountain of ash generated from a WTE facility will need to be land filled. Toxic ash should be placed in a secure cell, not spread about over the entire surface area. To place it in such a cell would mean two things: a far higher cost for disposal and the inability to count the ash toward our recycling rate.

Ash from a WTE plant is a burdensome financial and environmental problem, not an opportunity.

Sher Horosko is a member of Carroll County’s Environmental Advisory Council

Enclosures

Enclosure One: Link to the Resolution By the City of York, PA opposing the application of American Ash Recycling to Extend their General Permit to turn WTE ash into aggregates. Motion passed.

<http://www.yorkcity.org/webcom/PDF/City%20Council/Bills%20&%20Resolutions/American%20Ash%20Opposition%20Resolution.pdf>

Enclosure Two: Two articles from Waste Watch

The Northeast Maryland Waste Disposal Authority WASTE WATCH

Volume 9, Issue 2

Spring 1998

Serving Anne Arundel County, Baltimore City, Baltimore County, Carroll County, Harford County, Howard County, and Montgomery County

Trends in Ash Residue Beneficial Use

By Brian Parsons, P.E., Project Manager

When it comes to municipal waste combustor (MWC) ash residue, states such as Pennsylvania and Massachusetts are being creative yet environmentally conservative with ash beneficial use and disposal options. In these states, the environmental protection agencies have issued permits for beneficial use of MWC ash residue. Massachusetts has limited beneficial ash use to within the boundaries of lined landfills, while Pennsylvania has been more permissive. Generally, the trend is toward allowing the beneficial use of ash in landfill closure projects.

The Pennsylvania Department of Environmental Protection (PADEP) issued a "Beneficial Use Order" in May that encourages using ash residue. The order approves the use of treated ash in the following ways:

- Aggregate for base and sub-base material under roads and other paved surfaces.
- Structural fill material.
- Substitute aggregate in concrete.
- Alternate daily cover for landfills.

According to the Beneficial Use Order, the *"American Ash Recycling Corp. (AAR) reports that there will be no adverse effect on the public or environment from the beneficial use of treated ash aggregate when used according to certain conditions". This spring the AAR is scheduled to open a new ash processing facility, located at a quarry in York County, Pennsylvania, where ash residue from the York County Solid Waste & Refuse Authority's Resource Recovery Facility will be treated and processed.*

2)

Northeast Maryland Waste Disposal Authority Waste Watch
Volume 9, Issue 4
Fall 1998

Authority Staff and Member Counties Visit Ash Recycling Plant

By [Chris Skaggs](#) and [JoAnn Strack](#)

The Authority took representatives of Carroll, Harford and Montgomery Counties on a tour of the new [American Ash Recycling Facility \(AAR\)](#) in York County, Pennsylvania this summer. All three jurisdictions were interested in learning more about the process of recycling ash from waste-to-energy (WTE) plants into end products suitable for various construction applications.

Recycling technology for WTE ash is relatively new to the solid waste industry and to date, there are few WTE ash recycling plants operating in the United States. Carroll County is interested in AAR's operations because the county's waste currently goes to the York WTE Facility for disposal. The combustion ash then goes to AAR for processing. Harford County is already involved with AAR in a pilot program that includes the processing of nearly 5,000 tons of ash generated from the Harford County WTE Facility. The county is considering ash recycling to further extend the life of its landfill. Montgomery County also is investigating ash-recycling technologies.

The group was led on a tour of the enclosed facility, where the sorting of ash takes place, the plant's control room and the grounds surrounding the plant. From the control room windows, we observed a series of conveyor systems moving and sorting the ash, with employees assisting the process at specific sorting locations. We were then taken on a walk-through of the plant to see the operations more closely. On close inspection the group was able to see coins and other interesting pieces of metal being extracted from the ash. What appeared to be a rooster from a weather vane was pulled from the line while we were walking through the system of conveyor belts. Inside the plant there was minimal dust, little standing water and no odors. Overall, the operations were well organized.

The AAR facility has been operational since June 1998. It is designed to process

up to 140,000 tons of ash per year for one-shift operations, with a maximum capacity of 240,000 tons per year. The processing incorporates screening, shredding, magnetic separation, non-ferrous separation and air classification of the incoming ash. The primary end product of this process is [Treated Ash Aggregate \(TAA\)](#). TAA has been approved for use by the Pennsylvania Department of the Environment for road sub-base material as well as aggregate in asphalt, concrete and structural fill. A process referred to as WespHix is used to bind any heavy metals in the TAA, which insures against leaching in future applications. Ferrous metals and non-ferrous metals, including brass, copper, aluminum, and coins are separated during processing and provide another source of revenue. The air classification and screening processes recover unburned material as a by-product, which is sent back to the WTE facility for reprocessing.

AAR is strategically located on the site of the York Building Products Quarry. The two companies have a mutually beneficial relationship. Currently, all of the TAA produced by AAR is being sold to York Building Products.

Enclosure Three: Two decisions from the PA DEP regarding American Ash Recycling of York



October 10, 2007

DEP Denies York County Ash Recycling Permit

HARRISBURG (Oct. 10) -- The Department of Environmental Protection today denied an application by American Ash Recycling of Pa. Inc. to renew its general permit, which had allowed the company to process and apply its AggRite product for beneficial use.

The department cited problems with the product's performance and application, along with a failure to meet the beneficial use standards outlined in DEP's regulations.

"American Ash Recycling has failed to demonstrate that AggRite is suitable for use as a structural or construction material, and has failed to comply with the terms of its existing permit," said Thomas Fidler, deputy secretary for waste, air and radiation management.

American Ash Recycling produces AggRite by treating incinerator ash from the York County Resource Recovery Facility. American Ash Recycling's process reduces the leachability of heavy metals in the ash.

At American Ash Recycling's request, DEP modified the general permit in August 2002 to allow AggRite be used as a bulking agent for sludge or liquid waste, a construction aggregate material under sidewalks and parking lots, base material for roadway embankments, and in the production of manufactured brick and blocks.

Fidler noted that American Ash Recycling could not demonstrate AggRite's effectiveness for these additional uses.

A number of past and outstanding compliance issues involving the use of AggRite also exist under the current general permit, which expires Dec. 23.

The American Ash Recycling processing facility has generated more than 500,000 tons of AggRite, most of which had been stockpiled at a quarry in York. The stockpile was removed under the terms of a January 2004 consent decree and most of the material has been removed and taken to Modern Landfill.

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COMMONWEALTH OF PENNSYLVANIA
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FOR IMMEDIATE RELEASE
12/24/2007

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DEP APPROVES AMERICAN ASH RECYCLING PROCESS REQUEST

HARRISBURG -- The Department of Environmental Protection has approved the application by American Ash Recycling of Pa. Inc. to process municipal waste incinerator ash for use as cover at landfills.

“This approval authorizes AAR to remove metal from incinerator ash generated during the burning of municipal waste at the York County Solid Waste and Refuse Authority's facility in West Manchester Township and then send the ash to landfills, where it will be used as daily cover,” said DEP South central Regional Director Rachel Diamond

In October, DEP denied AAR's request to renew its general permit for processing and beneficial use of treated ash, citing problems with the product's performance and application, along with the company's failure to meet the beneficial use standards outlined in DEP's regulations.

The approval of the application allows for the recovery of ferrous and non ferrous metals from incinerator ash for recycling, according to Diamond.

In addition, DEP imposed additional restrictions on the processing operation such as requiring AAR to store all ash within buildings or containers to prevent wind dispersal of the ash and limiting the amount of ash on site to no more than 4,900 tons. AAR is also required to submit an ash control plan and a storm water management plan within 30 days, and to submit a study evaluating the feasibility of relocating the operation to alternative sites.