



TAKE FIVE for Safety Waste Recycling

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Background

- Many waste materials can be recycled.
- Recycling has many benefits (environment, community, cost savings)
- Technical and Economic drivers play important roles
- Contamination of recycled materials is a significant problem

What exactly is “Recycling”

- Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products.
- EPA promotes the waste management hierarchy, which ranks various waste management strategies from most to least environmentally preferred.
- The hierarchy prioritizes source reduction and the reuse of waste materials over recycling.
- Products should only be recycled if they cannot be reduced or reused

Benefits of Recycling:

- **Conserve natural resources:** Recycling reduces the need to extract resources such as timber, water, and minerals for new products.
- **Climate change:** According to the most recent EPA data, the recycling and composting of municipal solid waste (MSW or trash) saved over 193 million metric tons of carbon dioxide equivalent in 2018.
- **Energy savings:** Recycling conserves energy. For example, recycling just 10 plastic bottles saves enough energy to power a laptop for more than 25 hours.
- **Waste and pollution reduction:** Recycling diverts waste away from landfills and incinerators, which reduces the harmful effects of pollution and emissions.

Some Challenges and Pitfalls

- Many people are confused about what items can be recycled, where they can be recycled and how. This often leads to recyclables going in the trash or trash going in the recycling bin.
- America's recycling infrastructure has not kept pace with today's waste stream.
- Domestic markets for recycled materials need to be strengthened in the United States.
 - Historically, some of the recycled materials generated in the U.S. have been exported.
 - However, changing international policies have limited the export of materials.
- More consistent measurement methodologies are necessary to improve recycling system performance. These more standardized metrics can then be used to create effective goals and track progress.

“Wish-Cycling” and the Tangler Problem



- Tanglers end up in the recycling bin usually by good intentions in an act called wish-cycling: when someone thinks that an item has material value and can be recycled into something different by putting it in their household recycling bin.
- However, due to the troubles that tanglers cause at the recycling facility, even if a tangler is made out of recyclable material, it does not belong in a household recycling bin.
- Wish-cycling leads to many issues along the recycling process:
 - Damaging equipment and injuring recycling facility workers.
 - Slowing the recycling process and decreasing efficiency.
 - Increasing the cost of collecting and sorting the materials.
 - Decreasing the value and marketability of recyclables.

Wastes that are collected for recycling at BNL

- **Aerosol Cans:** MUST BE "empty"/atmospheric pressure/no residual liquids.
- **Lead-Acid Vehicle Batteries**
- **Beverage Bottles/Cans/Containers** Rinse out aluminum cans, #1 through #7 plastic bottles and place into dedicated recycling containers that are designated for combined storage. Contact the F&O Custodial Supervisor if extra recycling container are needed (usually one in every lunch/break area).
- **Cardboard**
- **Excess Equipment BEWARE: "ASSETS"!**
 - Excess electronic items such as laboratory equipment, laptops, servers, CRT (cathode ray tubes), printers, plotters, power supplies, etc. must be managed through the Procurement & Property Management Group (Bldg. 494) as per SOP 380.7 Disposal of Certified and Non-certified Electronic Products in the Procurement & Property Management Group S.O.P. Manual Subject Area. Additionally, the Process Knowledge Form for Clean and Suspension Encumbered Metals in the Management of Moratorium and Suspension Encumbered Metals Subject Area must be completed.
 - Contact the Distribution Group Supervisor in Procurement and Property Management (PPM) to recycle/excess/dispose of excess equipment. Generators must meet the requirements listed in the Procurement & Property Management Group S.O.P. Manual Subject Area. Any metallic excess equipment requires a Process Knowledge Certification Form for Clean and Suspension Encumbered Metals, available in the Management of Moratorium and Suspension Encumbered Metals Subject Area, in order for PPM to transfer the equipment to their storage area.
 - Contact the Distribution Group Supervisor in PPM for pickup for recycling.
- **Lead Solder Waste** Lead solder waste not being recycled is a hazardous waste, and must be managed in accordance with the section Hazardous Waste.
- **Mixed Paper**
 - Mixed paper: magazines, newspaper, office paper, phonebooks, junk mail, color inserts, textbooks, catalogs, manila/file folders, post-its, blueprints, greeting cards, and non-metallic photographic paper.
 - **Note:** For the disposal of old records and associated carbonless and carbon paper manufactured prior to 1979, refer to the PCB Management Subject Area.
 - **Note:** Do not recycle food-stained paper—normal trash
- **Printer and Toner Cartridges**
 - Place the used cartridge in the packaging that the replacement (new/rebuilt) cartridge came in, seal it, and write "RECYCLE" in large print on the outer package.
 - Leave the item in the PPM Warehouse Delivery and Pickup Point in your building or contact PPM to request a pickup.
- **Scrap Metal**
- **Used Oil Filters**

BNL's Recycling Progress Report

- BNL's overall recycling rate for FY23 is 76%.
- BNL contracted to have its solid waste sent to a Waste-to-Energy facility for disposal instead of landfilling when available and has subsequently sent 75% of its MSW to that facility.
- BNL initiated a successful wood pallet recycling program collecting 5 tons of pallets for recycling during FY23.
- BNL will continue to identify opportunities for expanding the current recycling program starting with evaluating whether the wood pallet recycling program can be expanded to include plastic pallets.

Summary

- BNL recycles many materials
- Strict adherence to standards is needed for some of the materials
- For any questions, contact the Environmental Compliance Representative (Bob Metz) or the ESH group.