Cost savings by consolidating waste from VSQG sites to a LQG site at:

West Virginia University

Presented by:

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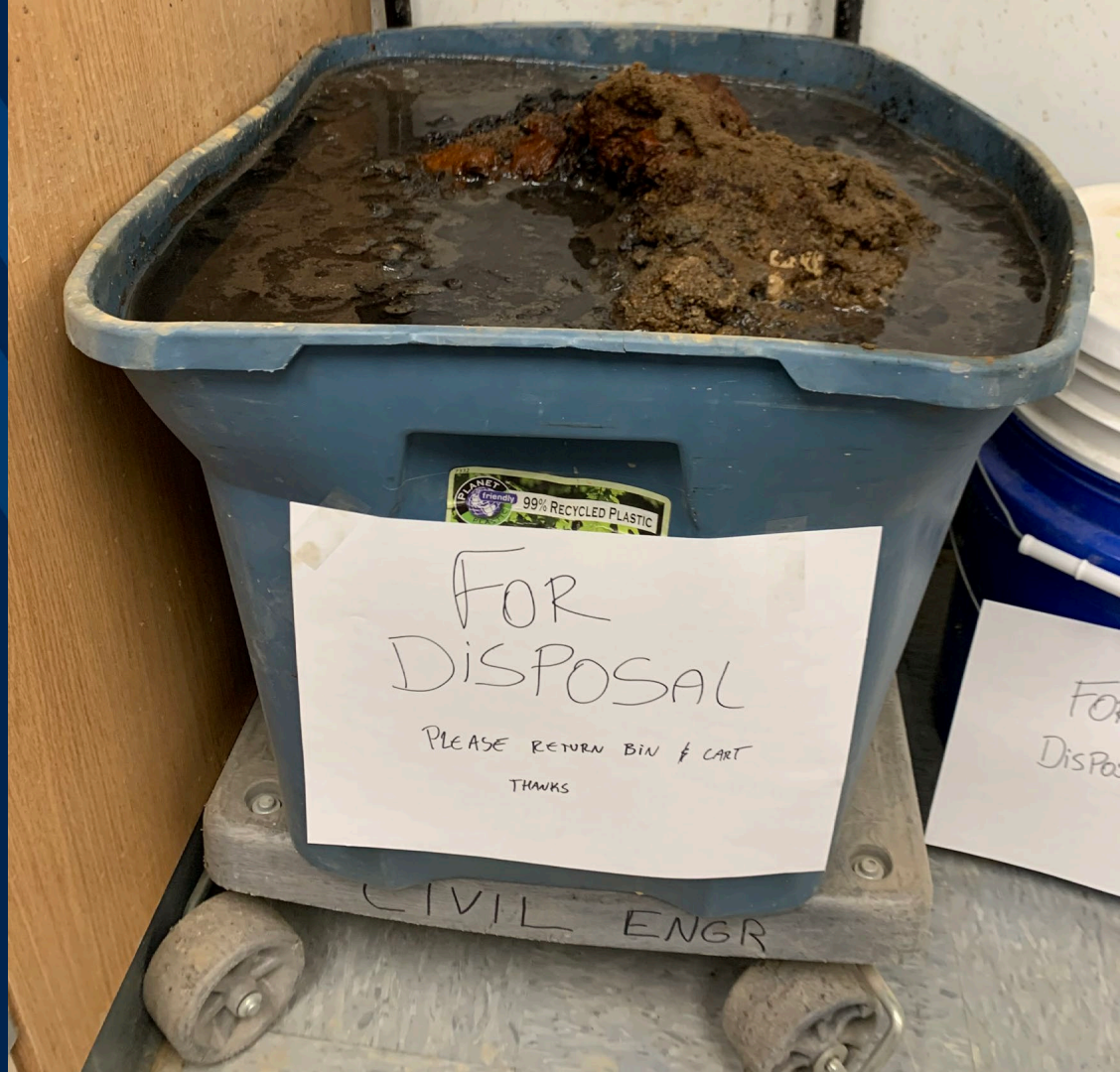
YES, we have problems just like everybody else.

(Maybe worse!)

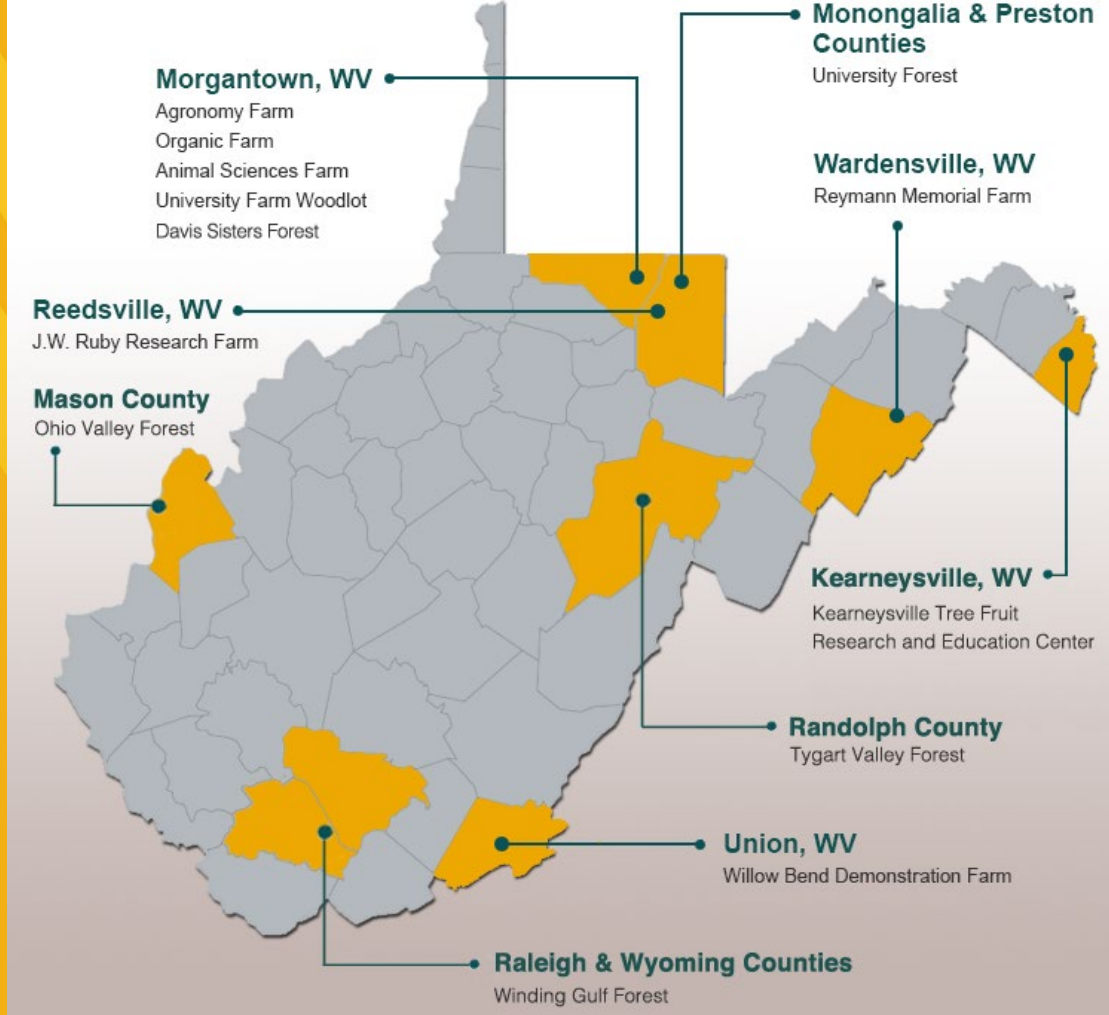


Background

- WVU is West Virginia's premier land-grant institution of higher education.
- Our main campus is in Morgantown located in north-central West Virginia
- The Morgantown campus is NOT contiguous.
    - In Morgantown we manage two LQG sites, two SQG sites and multiple VSQG or Non-Handler sites.
    - Property acquisitions and the creation of satellite campuses through the years has resulted in numerous generators around the greater Morgantown area.
    - Additionally, past notification decisions and the WV DEP's acceptance of those decisions led to additional breaking up of the campus into multiple generators.

Main points of waste generation throughout the state:

Various farms and forests throughout the state where waste is generated.



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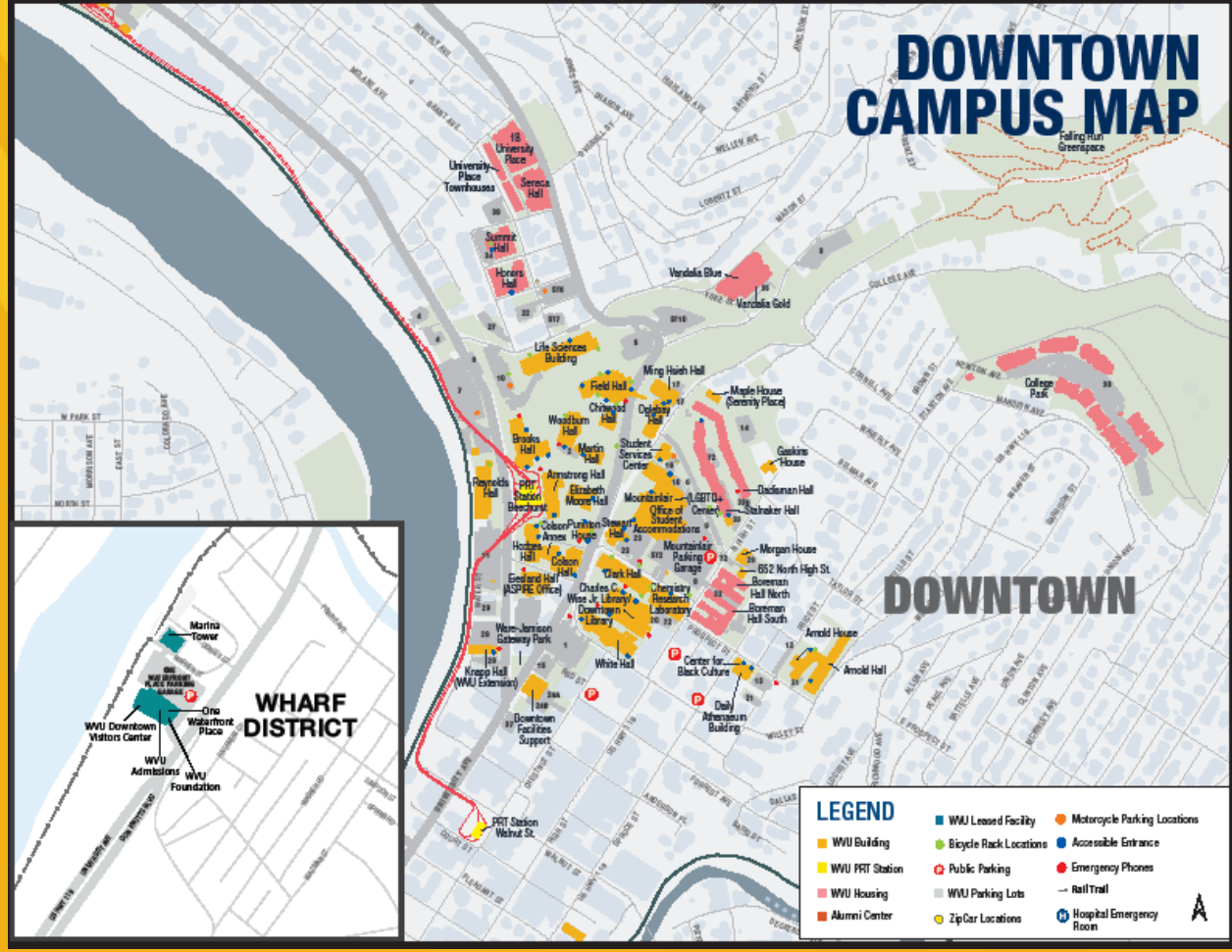
- **Downtown Campus sites:**
  - Downtown East (LQG)
  - Downtown West (VSQG)
  - Mountainlair (VSQG/NH)
  - Downtown Facilities Support (VSQG)
  - Various dorms, apartment buildings, and isolated class/facilities sites (VSQG/NH)



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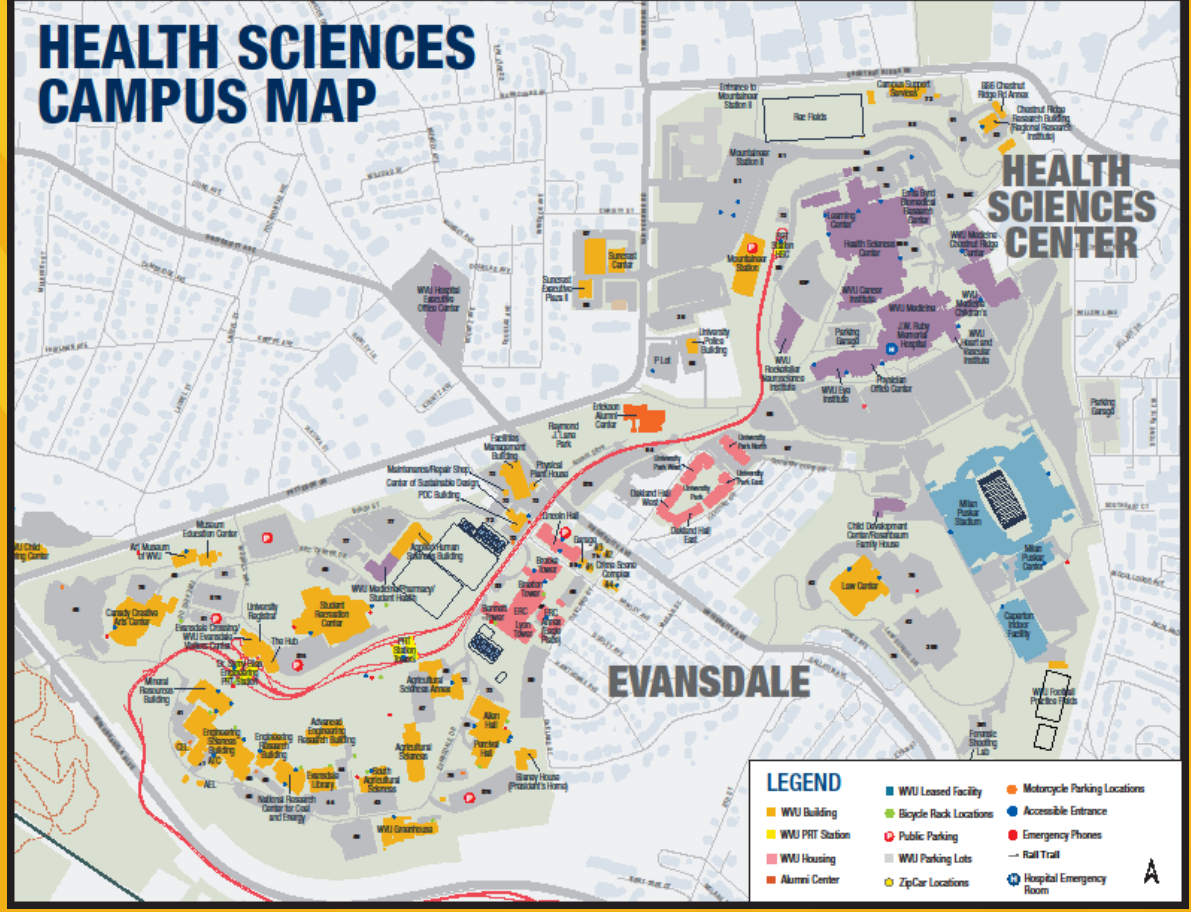
- Health Sciences Campus
  - HSC (SQG)
  - Forensics Shooting Lab (VSQG)
  - Law Center (VSQG/NH)
  - Various housing & other small isolated class/facilities (VSQG/NH)
  - Physical Plant –Roads & Grounds (VSQG/NH)



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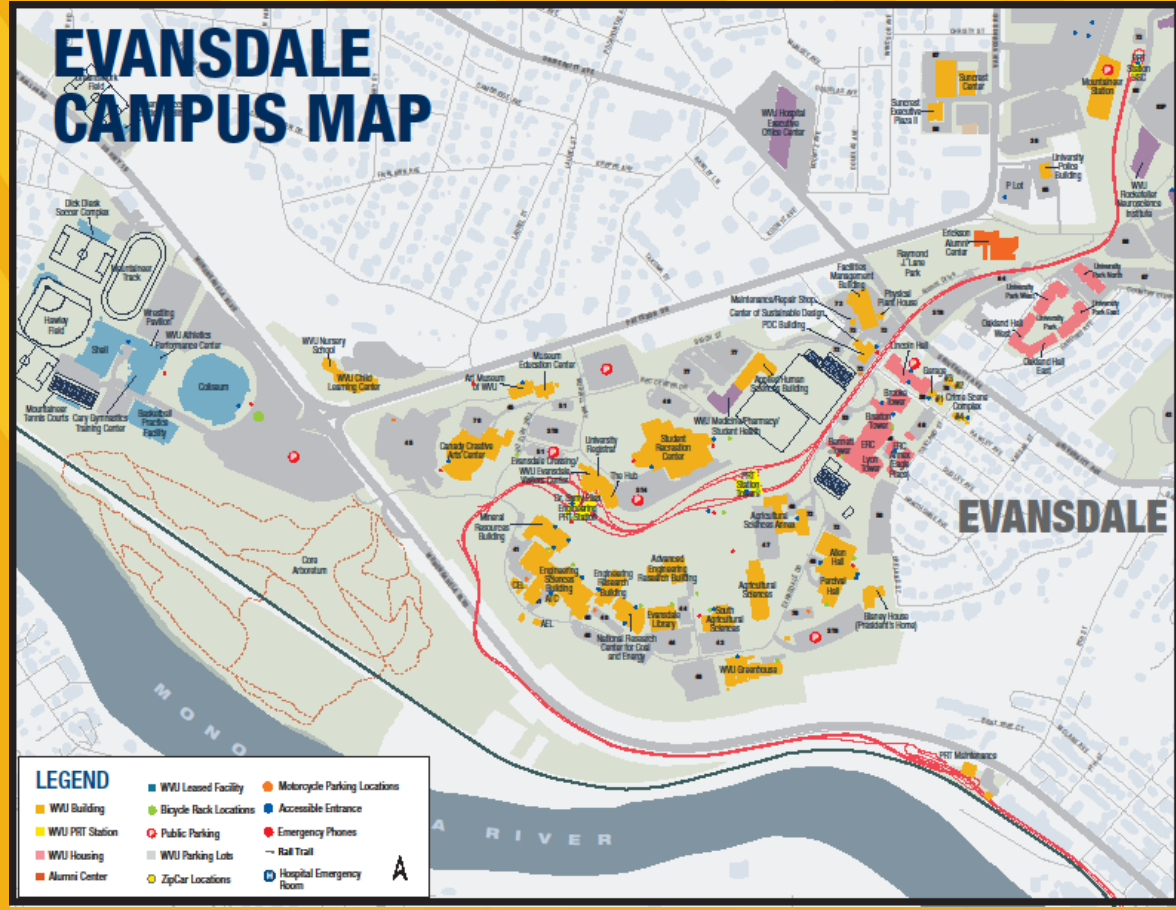
- Evansdale & Health Sciences Campuses
  - Engineering (SQG)
  - Creative Arts Center (VSQG)
  - Ag Sciences (VSQG)
  - Ag Annex (VSQG)
  - Allen & Persival (VSQG)
  - Student Recreation Center (VSQG/NH)
  - Coliseum (VSQG)



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List of WVU generator sites (as of January 2025)

WVU-EHS DOWNTOWN CAMPUS EAST	LQG
WVU-EHS FIELD OPERATIONS CENTER HAZ-STOR BLDG	LQG
WVU-EHS HEALTH SCIENCES CENTER	SQG
WVU-EHS ENGINEERING/EVANSDALE	SQG
WVU-EHS AGRICULTURAL SCIENCES	VSG
WVU-EHS EXP FARM & KEARNEYSVILLE	VSG
WVU-EHS HORTICULTURE FARM	VSG
WVU-EHS POTOMAC STATE COLLEGE	VSG
WVU-EHS DOWNTOWN CAMPUS WEST	VSG
WVU-EHS HEALTH SCIENCE CENTER - CHARLESTON	VSG
WVU-EHS BECKLEY CAMPUS	VSG
WVU-EHS JACKSONS MILL STATE	VSG
WVU-EHS AGRONOMY FARM	VSG
WVU-EHS PHYSICAL PLANT	VSG
WVU-EHS COLLEGE PARK	VSG
WVU-EHS PHYSICAL PLANT RDS & GROUNDS	VSG
WVU-EHS PERSONAL RAPID TRANSIT (PRT)	VSG
WVU-EHS COLISEUM	VSG
WVU-EHS CREATIVE ARTS CENTER	VSG

WVU-EHS ALLEN PERCIVAL	VSG
WVU-EHS MOTOR POOL	VSG
WVU-EHS MOUNTAINLAIR	VSG
WVU-EHS REEDSVILLE EXPERIMENTAL FARM	VSG
WVU-EHS ANIMAL SCIENCE FARM	VSG
WVU-EHS GENERAL WOODWORKING	VSG
WVU-EHS PETITO WAREHOUSE	VSG
WVU-EHS AIRPORT HANGAR	VSG
WVU-EHS ARNOLD HALL	VSG
WVU-EHS WARDENSVILLE REYMANN MEMORIAL FARM	VSG
WVU-EHS WATERFRONT PLACE	VSG
WVU-EHS DOLLS RUN MINE TRAINING CENTER	VSG
WVU-EHS SUMMIT HALL	VSG
WVU-EHS WVU TECH	NH
WVU-EHS EVANSDALE RESIDENTIAL COMPLEX	NH
WVU-EHS ALTERNATIVE FUELS	NH
WVU-EHS ALTERNATIVE FUELS BAKERS RIDGE	NH
WVU-EHS EYE INSTITUTE	NH
WVU-EHS CAFEE	NH

Then came the New Generator Rule

Specific provision allows for the consolidation of hazardous waste at a Large Quantity Generator site if it is from Very Small Quantity Generator sites with some restrictions.

The following slides were extracted from an EPA Webinar on the new rule.

Webinar Series on the Hazardous Waste Generator Improvements Rule

US EPA

Office of Resource Conservation and Recovery

2019

VSQG Waste Consolidation at LQGs

Issue that the New Consolidation Provision Addresses

- Some companies would like to be able to consolidate wastes from their own VSQG sites for more efficient shipping and hazardous waste management
  - Reduces liability for company as a whole by ensuring proper management of hazardous waste
  - Sending to a RCRA-designated facility is the most environmentally sound option
  - Previously, an LQG needed a RCRA permit to receive VSQG wastes

VSQG Waste Consolidation at LQGs

New Consolidation Provision

- Consolidate waste at an LQG under the control of the same person:
  - Person – as defined under RCRA in § 260.10 - means an individual, trust, firm, joint stock company, Federal Agency, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body
  - Control – means the power to direct policies at the facility
- VSQG standards
  - Marks and labels waste containers with "Hazardous Waste" and the hazards (as discussed in Module 2)
- No hazardous waste manifest is required and hazardous waste transporters do not have to be used

VSQG Waste Consolidation at LQGs

LQG standards

- Notifies state on Site ID Form that it is participating in this activity and identifies which VSQGs are participating
- Recordkeeping for each shipment – normal business records
- Adds accumulation start date to VSQG HW labels when arrives at LQG
- Manages consolidated waste as LQG hazardous waste including ensuring final treatment or disposal is at a RCRA-designated facility (TSDF or recycler)
- Reports in Biennial Report – there is a different source code (G51) for the VSQG consolidated waste to distinguish from the LQG's own generated waste

- We did not extend this provision to allow SQGs to consolidate VSQG HW due to more complicated implementation issues but an SQG can participate if they notify and act as an LQG (meeting all LQG standards including getting the VSQG HW off-site in 90 days)

VSQG Waste Consolidation at LQGs

FAQs about New Consolidation Provision

- When does the 90-day clock start for VSQG consolidated waste?
  - When the VSQG waste gets to the LQG, the 90-day clock to accumulate the waste starts
- Is there any accumulation limit for how much waste can be consolidated at an LQG?
  - No, there is no overall accumulation limit but the waste must be sent off-site to a RCRA TSDF or recycler within 90 days
- Does the LQG add the VSQG waste to its annual generation amount?
  - The LQG would report both its own generated waste and the waste consolidated from its VSQGs on the Biennial Report. However, there is a different source code (G51) for the VSQG waste so they can distinguish between their own HW and the consolidated waste

VSQG Waste Consolidation at LQGs

FAQs about New Consolidation Provision

- When transporting the waste from the VSQG to the LQG, what requirements must be met?
  - There are no specific RCRA requirements for the transport but any applicable DOT requirements would continue to apply
- Is there a quantity limit for shipments from the VSQG?
  - No, but the VSQG has to stay within its own accumulation limit
- Can the VSQG and the LQG be in different states?
  - Yes, if both states have adopted the consolidation provision. If the HW is transported through other states, the generator should check with the transit state to see if they can pass through

VSQG Waste Consolidation at LQGs

FAQs about New Consolidation Provision

- What marking and labeling should be on the containers?
  - At the VSQG, the words "Hazardous Waste" and the hazards
  - At the LQG, the words "Hazardous Waste," the hazards, and the accumulation start date

- Can the LQG consolidate VSQG HW with in the same container with their own LQG HW?
  - Yes, if the waste is compatible. The LQG would need to use the earlier accumulation state date on the combined HW to determine how long the combined HW can remain on-site.

VSQG Waste Consolidation at LQGs - Example

- Army reserve facilities that are VSQGs could consolidate their HW at an Army base that is an LQG (assuming they are in states that have adopted the consolidation provision)
  - They could transport the waste themselves and would not need to manifest it as long as the LQG has notified, including listing the participating VSQGs on the Site ID form
  - The Army reserve sites (the VSQGs) would need to mark the containers with the words "Hazardous Waste" and the hazards of the waste in the containers. For example, if they generate spent solvents that are ignitable, the containers could be marked:

VSQG Waste Consolidation at LQGs - Example

- Once the VSQG waste arrives at the Army base, the LQG would add the accumulation start date and manage the waste as LQG waste, including getting it off-site to a TSDF in 90 days
- The LQG would also keep the shipping records of the waste received from the VSQG for 3 years
  - These records would include:
    - the name, address, and contact info for the VSQG, and
    - a description of the waste received, including the quantity and date the VSQG waste was received
- The LQG would report the VSQG waste consolidated at their site on their BR using the new source code (G51) on the GM form

262.17

(f) ***Consolidation of hazardous waste received from very small quantity generators.*** Large quantity generators may accumulate on site hazardous waste received from very small quantity generators under control of the same person (as defined in § 260.10 of this subchapter), without a storage permit or interim status and without complying with the requirements of parts 124, 264 through 268, and 270 of this chapter, and the notification requirements of section 3010 of RCRA for treatment, storage, and disposal facilities, provided that they comply with the following conditions. "Control," for the purposes of this section, means the power to direct the policies of the generator, whether by the ownership of stock, voting rights, or otherwise, except that contractors who operate generator facilities on behalf of a different person shall not be deemed to "control" such generators.

(1) The large quantity generator notifies EPA at least thirty (30) days prior to receiving the first shipment from a very small quantity generator(s) using EPA Form 8700-12; and

(i) Identifies on the form the name(s) and site address(es) for the very small quantity generator(s) as well as the name and business telephone number for a contact person for the very small quantity generator(s); and

(ii) Submits an updated Site ID form (EPA Form 8700-12) within 30 days after a change in the name or site address for the very small quantity generator.

(2) The large quantity generator maintains records of shipments for three years from the date the hazardous waste was received from the very small quantity generator. These records must identify the name, site address, and contact information for the very small quantity generator and include a description of the hazardous waste received, including the quantity and the date the waste was received.

(3) The large quantity generator complies with the independent requirements identified in § 262.10(a)(1)(iii) and the conditions for exemption in this section for all hazardous waste received from a very small quantity generator. For purposes of the labeling and marking regulations in paragraph (a)(5) of this section, the large quantity generator must label the container or unit with the date accumulation started (*i.e.,* the date the hazardous waste was received from the very small quantity generator). If the large quantity generator is consolidating incoming hazardous waste from a very small quantity generator with either its own hazardous waste or with hazardous waste from other very small quantity generators, the large quantity generator must label each container or unit with the earliest date any hazardous waste in the container was accumulated on site.

What does a shipment look like?

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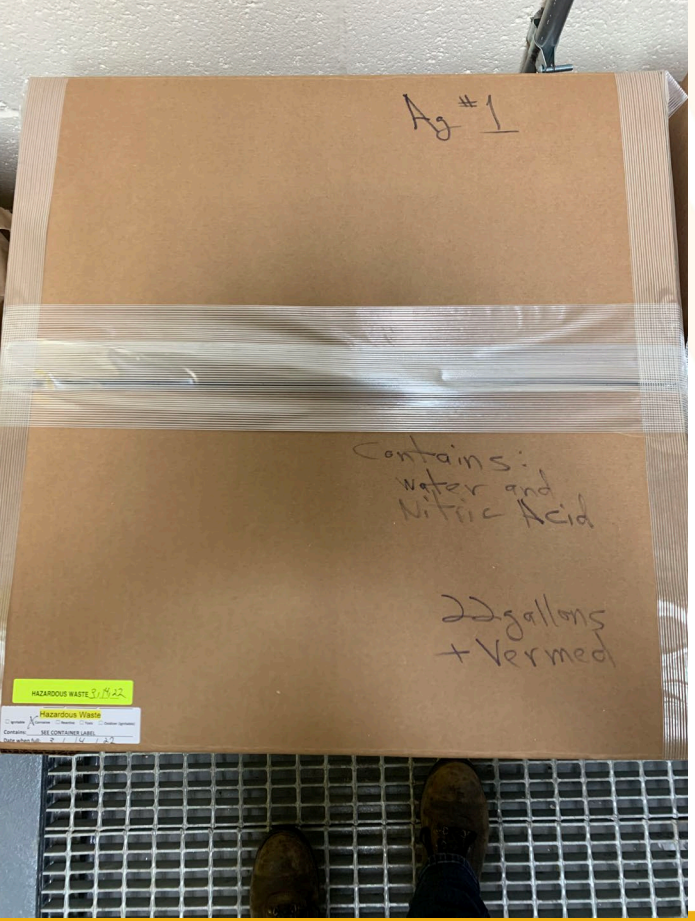
Ag #1
Contains:
Water and
Nitric Acid
22 gallons
+ Vermed
HAZARDOUS WASTE
Hazardous Waste


UP
Recycled
Corrugated
CORROSIVE
8


USED
OIL


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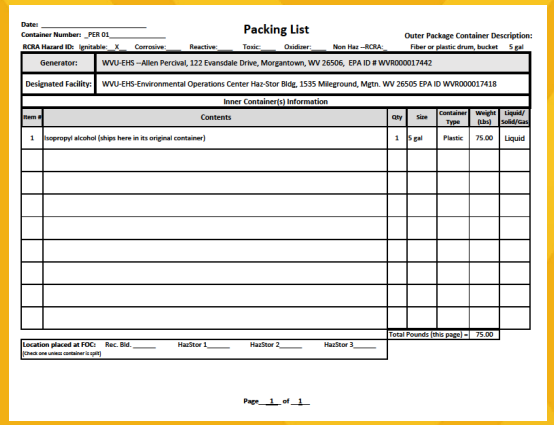
Keeping It Simple

(Until told otherwise)



Date: _____

Container Number: _PER 01_____

Packing List

Outer Package Container Description:

RCRA Hazard ID: Ignitable: _X_ Corrosive: ____ Reactive: ____ Toxic: ____ Oxidizer: ____ Non Haz –RCRA: ____ Fiber or plastic drum, bucket 5 gal

Generator:	WVU-EHS –Allen Percival, 122 Evansdale Drive, Morgantown, WV 26506, EPA ID # WVR000017442
Designated Facility:	WVU-EHS-Environmental Operations Center Haz-Stor Bldg, 1535 Mileground, Mgtn. WV 26505 EPA ID WVR000017418

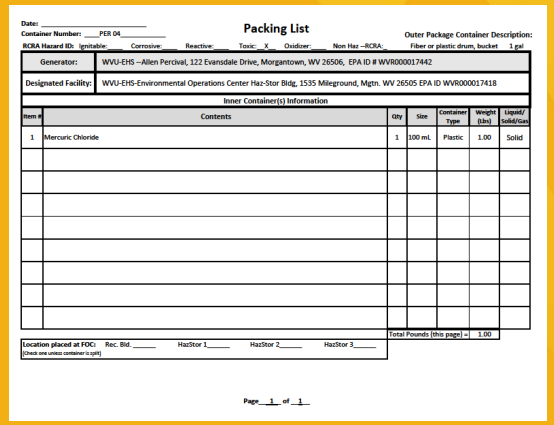
Inner Container(s) Information

Item #	Contents	Qty	Size	Container Type	Weight (lbs)	Liquid/ Solid/Gas
1	Isopropyl alcohol (ships here in its original container)	1	5 gal	Plastic	75.00	Liquid
				Total Pounds (this page) =	75.00	

Location placed at FOC: Rec. Bld. _____ HazStor 1_____ HazStor 2_____ HazStor 3_____

(Check one unless container is split)

Page__1__ of __1__



Date: _____

Container Number: ____PER 04_____

Packing List

Outer Package Container Description:

RCRA Hazard ID: Ignitable: ____ Corrosive: ____ Reactive: ____ Toxic: __X__ Oxidizer: ____ Non Haz –RCRA: ____ Fiber or plastic drum, bucket 1 gal

Generator:	WVU-EHS –Allen Percival, 122 Evansdale Drive, Morgantown, WV 26506, EPA ID # WVR000017442
Designated Facility:	WVU-EHS-Environmental Operations Center Haz-Stor Bldg, 1535 Mileground, Mgtn. WV 26505 EPA ID WVR000017418

Inner Container(s) Information

Item #	Contents	Qty	Size	Container Type	Weight (lbs)	Liquid/ Solid/Gas
1	Mercuric Chloride	1	100 mL	Plastic	1.00	Solid
				Total Pounds (this page) =	1.00	

Location placed at FOC: Rec. Bld. _____ HazStor 1_____ HazStor 2_____ HazStor 3_____

(Check one unless container is split)

Page__1__ of __1__

BILL OF LADING - SHORT FORM - NOT NEGOTIABLE

Shippers Contact Information: WVU Environmental Health and Safety
PO Box 6551
Morgantown, WV 26505
Chuck Joseph (304) 293-5787

SHIP FROM:
WVU-EHS –Allen Percival
122 Evansdale Drive
Morgantown, WV 26506
EPA ID # WVR000017442

SHIP TO:
WVU-EHS Environmental Operation Center Mileground
1535 Mileground
Morgantown, WV 26506
EPA ID# WVR000017418

Outer Package

HM (X)	QTY	Size (gal)	Container Number(s)	Type	Commodity Description	Shipping Weight (lbs)
X	1	5	PER 01	DF	UN1993, WASTE FLAMMABLE LIQUIDS, N.O.S., (ISOPROPYL ALCOHOL), 3, PG II	75.00
X	1	5	PER 02	DF	UN1993, WASTE FLAMMABLE LIQUIDS, N.O.S., (ETHANOL), 3, PG II	75.00
X	1	16	PER 03	DF	UN2924, WASTE FLAMMABLE LIQUIDS, CORROSIVE, N.O.S., (UNIVERSAL INDICATOR, HYDROCHLORIC ACID), 3, (8), PG II	28.00
X	1	1	PER 04	DF	UN3288, WASTE TOXIC SOLID,INORGANIC, N.O.S., (MERCURIC CHLORIDE), 6.1, PG III	1.00
X	1	30	PER 05	CF	UN1760, WASTE CORROSIVE LIQUIDS, N.O.S., (NITRIC ACID 5% SOLUTION), 8, PG II	65.00

Total Shipping Weight (lbs) 244.00

Shipper Signature/Date_____

This is to certify that the above-named materials are properly classified, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the DOT.

Carrier
Signature/Date_____

Carrier acknowledges receipt of packages and required placards. Carrier certifies emergency response information was made available and/or carrier has the DOT emergency response guidebook or equivalent documentation in the vehicle. Property described above is received in good order, except as noted.

Received By:	Print Name:	Signature:	Date:

Revised: 7/23/2025

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Environmental Operations Center –Mileground (LQG)


Haz-Stor #2
Haz-Stor #3
3
1
0
COR

Boxes as they were found in the original state of disrepair


HAZ-STOR
1
HAZ-STOR
2
HAZ-STOR
3

West Virginia University


Haz-Stor #1
Haz-Stor #2
Haz-Stor #3

Where's the savings?

- **Less shipping & labor charges from vendor** –far fewer trips to VSQG sites = $$ savings
- **Consolidation of like wastes:**
  - Larger lab packs with cost savings by volume
    - Example: Multiple 250mg bottles of a toxic solid would ship in multiple 5-gallon lab packs from separate VSQGs, whereas many small toxic solids could ship in one 5-gallon lab pack from our LQG.
  - Bulking liquids into profiled drums leads to cost savings
- **Unexpected savings:**
  - New facility that houses these LQG operations also serves as a place to store and bulk Non-Hazardous wastes from our other Large Quantity Generator and Small Quantity Generator sites.
    - We have limited space in our CAAs at our LQG & SQG sites. We were amazed at how much longer we could go between shipments with the freed-up space.
    - Example: DTE (Chemistry), We regularly shipped every 2 -3 weeks. Once we started removing Non-Hazardous waste from the CAAs, we started shipping right up to our 90-day limit.
  - We started to need our vendor on site less for packing and waste pickups.

UNEXPECTED SAVINGS:

We remove two or three cubic-yard boxes of Ethidium Bromide wastes from three separate generator sites per year, thus saving room back in the CAAs at those sites.

We ship to incineration an additional two or three cubic-yard boxes of non-hazardous/non-regulated waste that we are not comfortable sending to the local municipal landfill.

Additionally, we store Non-Hazardous wastes that are DOT-regulated materials and ship them to incineration with their compatible hazardous wastes (DOT 3, 6.1, 8 & 9s primarily.).

We believe that transporting these non-hazardous wastes from our CAAs to our EOC alone equals or surpasses savings from consolidation at the LQG site.

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CAA at Health Sciences Center, one of our Small Quantity Generator sites.

We have a 270-day clock here. (180 + 90 due to disposal site being more than 200 miles away).

The transport and storage of Non-Hazardous waste at our LQG site allows us to fill this room to ship 1 to 2 times per year versus every few weeks in the past.

Charts depicting more efficient use of vendor for trucking and labor costs only.

Past practices had vendor assisting with waste pickups, container delivery and other waste-related activity.

Vendor is now typically used for shipment-related activity only.

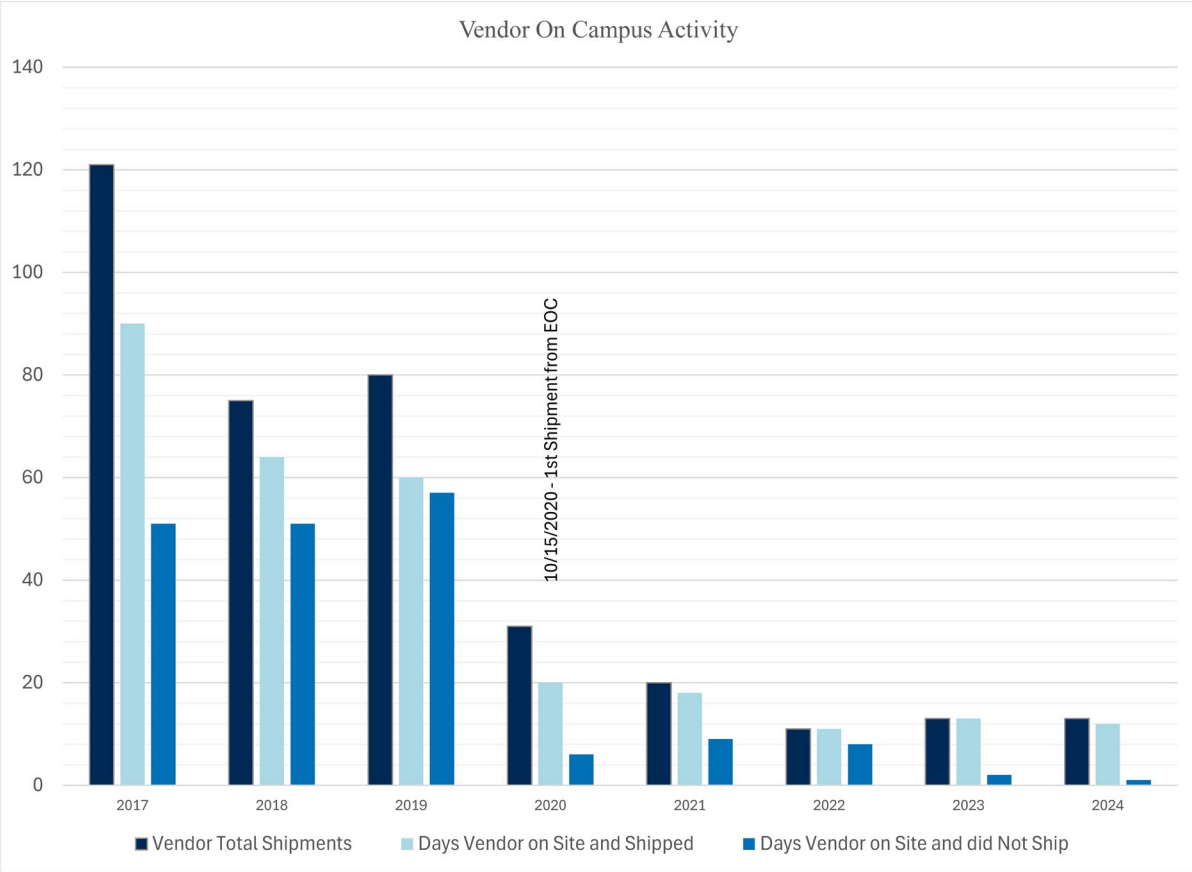
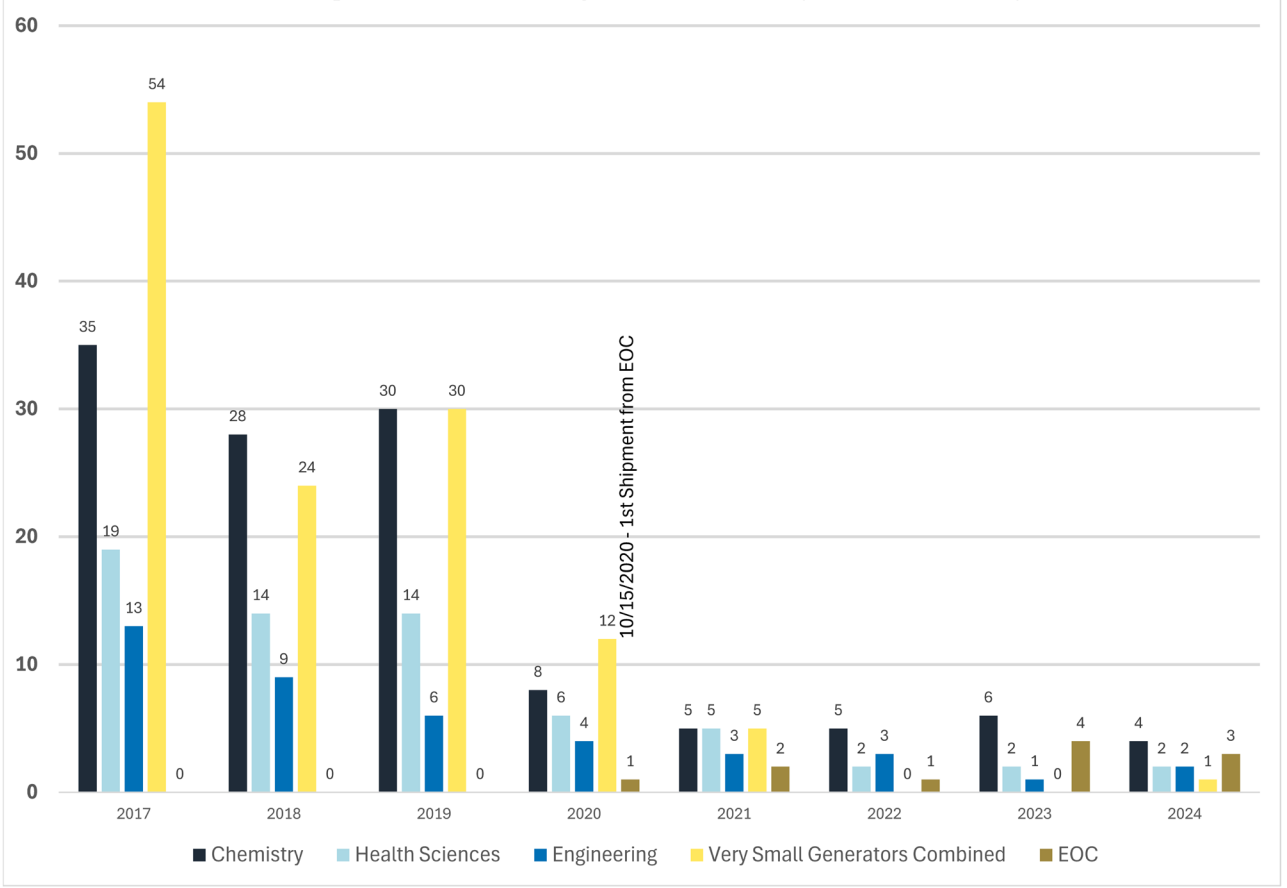


Chart depicts the number of shipments from our Small and Large Quantity Generators versus Very Small Quantity Generators combined and subsequently from our Environmental Operations Center (LQG).



Direct savings from reduced shipments from Very Small Quantity Generator sites.

Shipments in yellow from the EOC directly replaced shipment from multiple VSQG sites.

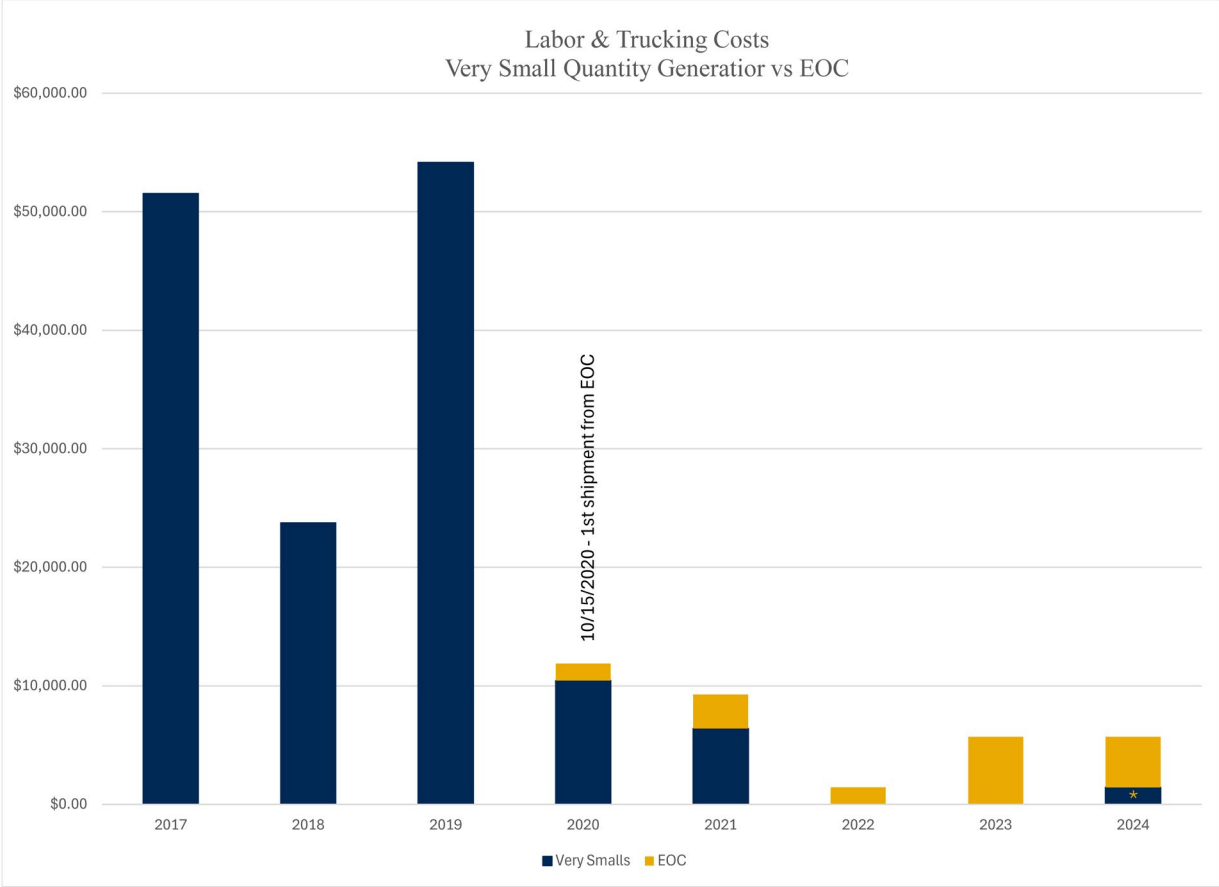
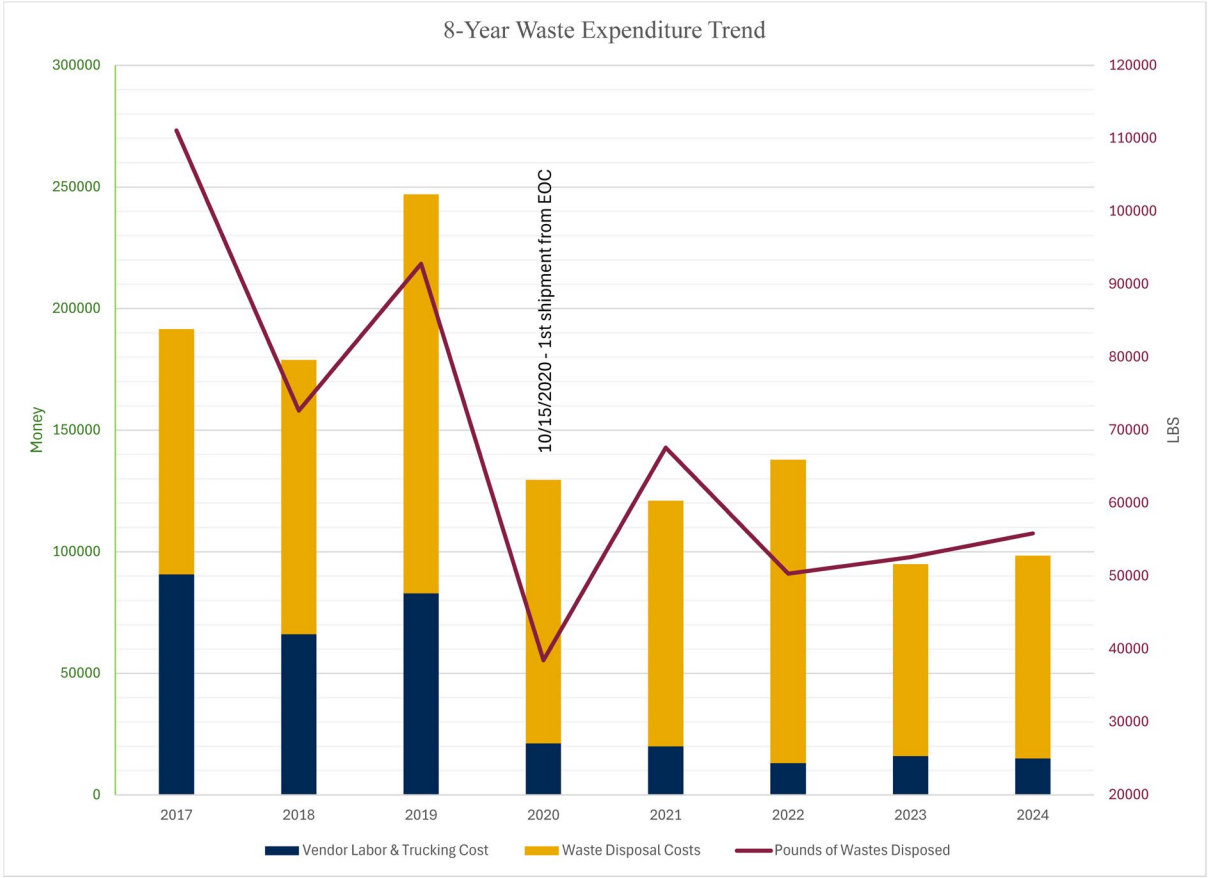


Chart depicts the reducing share of costs going to vendor labor and hauling as well as a reduction in total costs.

Maroon line depicts pounds of waste shipped in comparison to those costs.



Questions?

EHS.WVU.EDU