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Solar Panels

Solar Panel Guidance:
<https://deq.nc.gov/about/divisions/waste-management/hazardous-waste-section/technical-assistance-and-guidance-documents#SolarPanels-3173>



Picture from: <https://www.ecmagpro.com/wbec-approves-20-mw-of-solar-projects-in-bibbham-district-west-bengal/>

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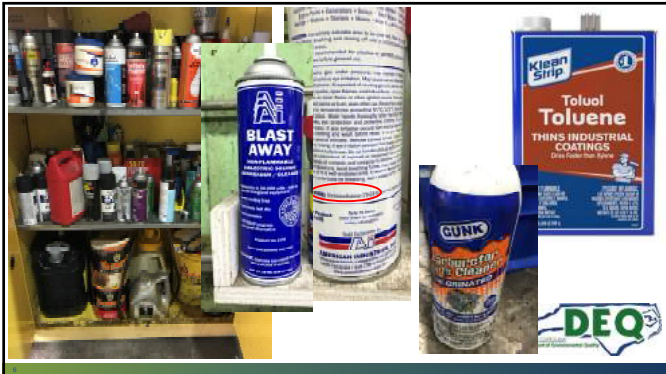
Excluded Solvent-Contaminated Wipes

For Reusable Wipes: 40 CFR 261.4(a)(26)
For Disposable Wipes: 40 CFR 261.4(b)(18)

- VSQG
- SQG
- LQG



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Excluded Solvent-Contaminated Wipes Summary



	Solvent-Contaminated Reusable Wipes	Solvent-Contaminated Disposable Wipes
Includes:	Wipes containing one or more F001-F005 listed solvents in § 261.31 that includes (but not limited to): <ul style="list-style-type: none"> Methylene chloride (F001 or F002) Tetrachloroethylene (F001 or F002) Trichloroethylene (F001 or F002) Acetone (F003) Ethyl benzene (F003) Methanol (F003) Benzene (F005) Methyl ethyl ketone (F005) Toluene (F005) 	
Does not include:	<ul style="list-style-type: none"> Wipes that contain listed hazardous waste other than solvents. Wipes that exhibit the characteristic of toxicity, corrosivity, or reactivity due to non-listed solvents or contaminates other than solvents. 	
		<ul style="list-style-type: none"> Wipes that are hazardous due to trichloroethylene



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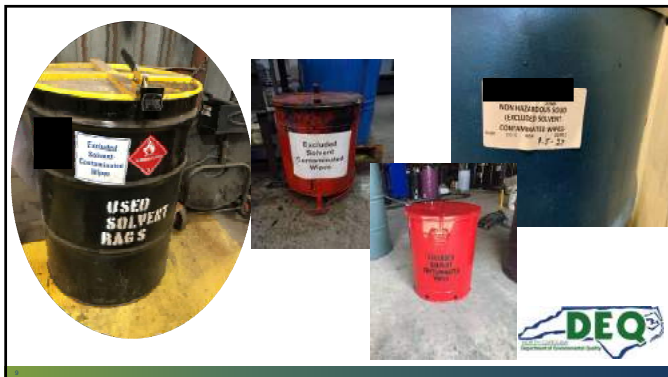
Excluded Solvent-Contaminated Wipes Summary, cont.



	Solvent-Contaminated Reusable Wipes	Solvent-Contaminated Disposable Wipes
Storage:	Must be accumulated, stored, and transported in: <ul style="list-style-type: none"> Non-leaking, closed containers that can contain free liquids (if they occur) Must be labeled/marked "Excluded Solvent-Contaminated Wipes" They may be accumulated for up to 180 days Wipes must not contain free liquids prior to being sent for cleaning or disposal 	
Free Liquids:	Free liquids removed from wipes must be managed as hazardous waste.	
Handling Facilities:	<ul style="list-style-type: none"> Laundry or dry cleaner whose discharge is regulated under the Clean Water Act 	<ul style="list-style-type: none"> To a combustor regulated under the Clean Air Act or hazardous waste combustor; or To a municipal solid waste landfill



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Solvent-Contaminated Wipes Recordkeeping

- VSQG
- SQG
- LQG

Generators must maintain documentation that includes:

- Name & address of the laundry, dry cleaner, landfill, or combustor
- Documentation that the 180-day accumulation time limit is being met
- Description of the process the generator is using to meet the "No Free Liquids" condition



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Optional Provisions

Episodic Generation Provision and Consolidation Provision




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 VSQG
 SQG

Episodic Generation

For SQG: 40 CFR 262.16(f) and 40 CFR 262 Subpart L
For VSQG: 40 CFR 262.14(c) and 40 CFR 262 Subpart L




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VSQG
 SQG

Episodic Generation

40 CFR 262 Subpart L

Allows SQG and VSQGs to maintain their existing generator category for HW generated during an episodic event provided specific conditions described in 40 CFR 262 Subpart L are met.




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VSQG
 SQG

Episodic Generation

40 CFR 262.231

Episodic Event:
An activity(ies) either planned or unplanned that does not normally occur during generator operations, resulting in an increase in the generation of HWs that exceeds the calendar month quantity limits for the generator's usual category





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Episodic Generation
40 CFR 262.231

VSQG
 SQG

Planned Episodic Event:
 Episodic event that the generator planned and prepared for, including

- Regular maintenance,
- Tank cleanouts,
- Short-term projects, and
- Removal of excess chemical inventory



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Episodic Generation
40 CFR 262.231


VSQG
 SQG

Unplanned Episodic Event:
 Episodic event that the generator did not plan or reasonably did not expect to occur, including

- Production process upsets,
- Product recalls,
- Accidental spills, or
- "Acts of nature" such as tornado, hurricane, flood, fire

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Episodic Generation
40 CFR 262.231

VSQG
 SQG

Episodic Event is NOT:

- Increased production of hazardous waste due to an increased rate of production is not an episodic event.
- The episodic event does not begin when the facility receives their sampling results and they show the waste is hazardous.
- An unplanned event is not because you did not plan to have a hazardous waste. It is because the event is unplanned.




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Episodic Generation – Notification Requirements
40 CFR 262.232

VSQG
 SQG

- Generator must notify:
 - At least **30 calendar days** prior to initiating a planned episodic event (electronically using myRCRAid) or
 - Within **72 hours** after an unplanned episodic event (by phone, fax, email; then provide notification electronically using myRCRAid by the end to the event)
- Episodic event must be initiated and completed within **60 days** (there are no extensions to this timeframe)




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Episodic Generation
40 CFR 262 Subpart L

VSQG
 SQG

- Limit of one episodic event per calendar year
- Or two events if a petition (40 CFR 262.333) is granted by HWS
 - If the generator already held a planned episodic event in the calendar year, the generator may only petition for an unplanned episodic event
 - If the generator already held an unplanned episodic event in the calendar year, the generator may only petition for a planned episodic event




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Episodic Generation
40 CFR 262 Subpart L

VSQG
 SQG

- Generator must obtain an EPA ID number if they do not have one already, including VSQGs
- Pay the fee associated with the amount of hazardous waste generated per N.C.G.S. 130A-294.1
- Must ship episodic hazardous waste on a hazardous waste manifest (including VSQGs)




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Episodic Generation
40 CFR 262 Subpart L

VSQG
 SQG

- Maintain records associated with the episodic event (keep 3 years)
 - Beginning and end dates of the episodic event
 - A description of the episodic event
 - A description of the types and quantities of HW generated during the event
 - A description of how the waste was managed and name of the TSD (recommend making a note on the HW manifest which waste was episodic)




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Episodic Generation
40 CFR 262 Subpart L

VSQG

Requirements for VSQGs:

- **Obtain** an EPA ID number (if the site does not have one already)
- **Use** a hazardous waste manifest and transporter to send episodic waste to a TSD or recycler
- **Manage** the episodic hazardous waste in a manner that minimizes the possibility of an accident or release
- **Label** episodic waste containers with "Episodic Hazardous Waste," an indication of the hazards, and the date the event began
- **Identify** an emergency coordinator
- **Maintain** records associated with the episodic event




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Episodic Generation
40 CFR 262 Subpart L

SQG





SQGs need to comply with existing SQG regulations and maintain records associated with the episodic event

- Label episodic waste containers with "**Episodic Hazardous Waste**," an indication of the hazards, and the date the event began



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"Episodic Hazardous Waste"

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Episodic Generator vs. Short Term Generator – Key Differences


Episodic Generator	Short Term Generator
<ul style="list-style-type: none"> • Site is required to have an EPA ID (can obtain one during episodic notification) • Site typically generates hazardous waste at VSQG or SQG amounts • Can be used one time a year (or twice if petitioned for a second event) • Only must comply with applicable requirements specified in 40 CFR 262 subpart L • Allows 60 days to complete event and remove waste (regardless of amount of HW generated in the episodic event) 	<ul style="list-style-type: none"> • Site typically does not already have an EPA ID number assigned (once assigned it stays with site) • For sites that typically do not generate hazardous waste • For one-time generation event. Short term generation may not be used again at the site (for the same business) • All applicable generator requirements apply for the amount of hazardous waste generated • Allows 90 days to remove waste for LQGs/180 days for SQGs.



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Questions on Episodic Generation?



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Consolidation Provision



For LQGs: 40 CFR 262.17(f)
For VSQGs: 40 CFR 262.14(a)(5)(viii)

Allows a VSQG to transfer HW to a LQG for consolidation as long as both entities are under the **control** of the same **person**, provided specific conditions are met by both the VSQG and LQG

- "Person" defined in N.C.G.S. 130A – 290(a)(22)
- "Control" is defined in 40 CFR 262.17(f)



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LQG Consolidation of VSQG HW



40 CFR 262.17(f)

- Notify the HWS (using the electronic 8700-12) of this activity at least **30** days prior to receiving the first shipment of VSQG HW
- Maintain paperwork for each shipment received from the VSQG including:
 - Name, site address and contact information for the VSQG(s),
 - Description of HW, quantity, and date received
- Manages waste received by LQG rules
- Reports VSQG waste on biennial report



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LQG Consolidation of VSQG HW



40 CFR 262.14(a)(5)(viii)

Requirements for the VSQG:


Label containers being transferred to the LQG (under the control of the same person) with specific wording:

- "Hazardous Waste"; **and**
- Indication of the hazards of the contents of the container



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Questions on Consolidation?



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Intro to Container Management



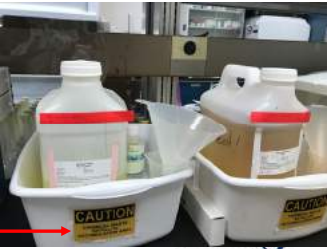
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Satellite Accumulation Area
40 CFR 262.15

SQG
 LQG

Is an "area" with a container(s) of hazardous waste that:

- Area where waste initially accumulate prior to removal to a central area ("**at or near the point of generation**"); and is,
- "**under control of the operator**" of the process that generated the waste



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Satellite Accumulation Areas (40 CFR 262.15)

☑ SQG
☑ LQG

FAQs about SAAs:

- A SAA can have multiple containers—up to 55 gallons of total waste
- The same SAA can have multiple waste types, but once 55 gallons of waste is exceeded, you must:
 - Date the excess waste, and
 - Move the excess waste to a CAA within 72 hours



This is one SAA

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Satellite Accumulation Areas (40 CFR 262.15)

☑ SQG
☑ LQG

FAQs about SAAs:

- A facility is not limited to how many SAA they can have.
- SAA waste can only be consolidated in containers within the same SAA or go to a CAA.



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Central Accumulation Areas (40 CFR 262.16/262.17)

☑ SQG
☑ LQG

Any on-site hazardous waste accumulation area with units [containers/tanks] subject to 262.16/17

- A generator can have more than one CAA.
- "Central" does not denote a physical location, nor does it have to be "centrally" located.
- CAA(s) can be in any location of the facility.
- CAA containers can be moved from one CAA to another CAA (but cannot redate)




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Container Management Requirements

SAA's vs. CAAs
40 CFR 262.15 (SAA)/40 CFR 262.16/262.17 (CAA)

Requirement	Satellite Accumulation Area (SAA) Units	180/270/90-day containers (CAA)
Must be in good condition	Yes	Yes
Must be compatible with HW in container	Yes	Yes
Must be closed at all times except when adding/removing waste	Yes (can also open to consolidate waste or venting)	Yes
Weekly Inspections	None	Weekly
Hazard marking	"Hazardous Waste" and indication of hazards	"Hazardous Waste" and indication of hazards
Date marking	On the date 55 gallons of non-acute HW is exceeded	On the date waste first goes in the container




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Container Management, continued

Satellite Accumulation Area vs. Central Accumulation


Requirement	Satellite Accumulation Area (SAA) Units	180/270/90-day containers (CAA)
Maximum length of accumulation	Unlimited	180/270 days – SQGs 90 days – LQGs
Maximum waste volume in storage	55 gallons (or 1 quart of acute wastes)	13,200 pounds of HW in all CAAs for SQGs/ Unlimited LQG
Personnel training required	No (but maybe yes)	Yes
Can treat hazardous waste in unit	No	Yes
Must comply with Subpart CC air emission standards	No	Yes (LQGs only)
Comply with preparedness, prevention, and emergency procedures	Yes	Yes



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Container Management

SAA's and CAAs



SQG
 LQG

- Must be clearly marked "Hazardous Waste" (SAA/CAA);
- with an indication of the hazards of the contents (SAA/CAA); and
- the date upon which each 180-day/270-day/90-day accumulation period begins (CAA) "accumulation start date"

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Container Management
SAA and CAA

☑ SQG
☑ LQG

Both SAA and CAA containers:

- Must be in good condition
- Must be compatible with contents
- Must be closed (unless actively adding or removing waste)

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Container Management
SAA and CAA

☑ SQG
☑ LQG

Both SAA and CAA containers:

- Waste must be kept inside the container
- Clean up spills immediately

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Hazard Indication Guide for Marking HW Containers

Methods to indicate the hazards of the contents of a container include, but are not limited to the following:

The applicable hazardous waste characteristic(s) marked on the container or on a label on the container:	Ignitable, Corrosive, Reactive, Toxic
Department of Transportation labels or placards at 49 CFR part 172 subpart E:	
Hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200:	
Chemical hazard label consistent with the National Fire Protection Association code 704:	

- Requirement from the Hazardous Waste Generator Improvements Rule (2018)
- All HW containers (SAA and CAA) must be marked with an indication of the hazards of the contents of the container.

☑ SQG
☑ LQG

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Examples of Labels that Indicate the "Hazards"

There are 9 DOT hazard classes. Hazard communication consistent with DOT (49 CFR part 172 Subpart E – Labeling or Subpart F – Placarding)

Explosives Gases Flammable Liquids Flammable Solids Oxidizers and Organic Peroxides
 Poison Infectious Substances Radioactive Corrosive Miscellaneous

DOT Class 9 label added to EPA's Implementation Questions page for the Generator Rule:
<http://www.epa.gov/hazgenerators/frequent-questions-about-implementing-hazardous-waste-generator-improvements-final#marking>

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Conflicts using of RCRA Labels and DOT Labels

F005 – Spent non-halogenated solvent

- RCRA requires both an Ignitable and Toxic Indications
- RCRA requires indication for all hazards
- DOT may require Class 3 or Class 3 & 9

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Examples of Labels that Indicate the "Hazards"

Hazard statement or pictogram consistent with OSHA (29 CFR 1910.1200)
 Ex. Globally Harmonized System (GHS)

Acute Toxicity – *harmful* Toxic – *fatal* Corrosive Flammable Self-Reacting

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Examples of Labels that Indicate the "Hazards"

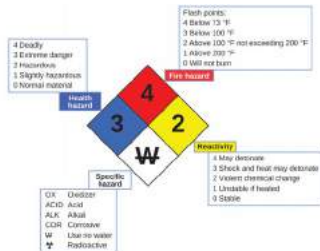
Hazard statement or pictogram consistent with OSHA (29 CFR 1910.1200)
Ex. Globally Harmonized System (GHS)



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Examples of Labels that Indicate the "Hazards"

Chemical hazard label consistent with the National Fire Protection Association code 704



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It's ok to "mix and match" different ways to indicate the hazards, but they should be applicable to the waste inside.



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Improper Container Management



49

Containers "Must be Closed"



Locking Mechanism

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Containers "Must be in Good Condition"



51

Containers "Must be Compatible with Contents"



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Container Management
SAA and CAA

SQG
 LQG

A Note About Palletized Waste

- Each container must be clearly marked HW, etc. (can't have one label on a shrink-wrapped pallet of HW)
- Would also have an issue with aisle space on inner containers



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Container Management
SAA and CAA

SQG
 LQG

Photo showing the waste in a proper container.



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Emergency, Preparedness, & Prevention SQG LQG

SAA's and CAAs:

- Access to Communications or Alarm
- Required Aisle Space

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CAA Inspection Records – Containers SQG LQG

At least weekly, the generator must inspect Central Accumulation Areas (CAAs) looking for leaking containers and deterioration of containers caused by corrosion.

Inspections **cannot exceed 7 days** from the previous inspection.

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Weekly Inspection Form Example SQG LQG

SAMPLE Weekly Inspection Record

HAZARDOUS WASTE CENTRAL ACCUMULATION AREA WEEKLY INSPECTIONS

Activity	Date	Inspector	Date	Inspector	Date	Inspector
Number of Accumulation Units						
Containers are not leaking and in good condition (no corrosion, dents, plasticization, etc.)						
Containers Closed						
Containers Labeled (including hazardous characteristics)						
Containers Dated						
Other Accumulation Unit Data:						
Number of Hazardous Waste Containers						
Labels on/Outside of Containers						
Proper Aisle Space (minimum of 3 ft. is required)						
Emergency Equipment (Fire Extinguishers, spill kit, Communication Device, Water, etc.)						
Notes/Corrective Actions:						

DEQ logo

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• Weekly inspections conducted and documented in Central Accumulation Areas

Aisle Space

Good aisle space!



- SQG
- LQG



- Must be maintained to allow unobstructed movement of personnel, fire protection equipment, spill equipment, etc.
- CAAs in North Carolina must have 2 feet of aisle space
- Also required in SAAs (*but not specific distance*)



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Improper Aisle Space




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Potential Aisle Space Issues in Shelving Systems

Drums behind the front facing ones on shelves 2 & 3 are an aisle space violation.



- SQG
- LQG




- 2-foot of aisle space is required for CAA units.
- Shelving/racking systems can be challenging when more than 2 shelves high.
- Discuss with your inspector if you have site-specific questions.




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Empty Containers Holding Non-Acute HW
(40 CFR 261.7)



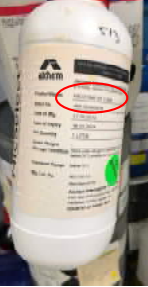
A **non-acute hazardous waste** container is empty if:

- 1) All wastes have been removed using practices commonly employed practices (e.g. pouring, pumping, or aspirating); **and**
- 2) No more than 1 inch of residue remains in the bottom of the container; or
 - Containers < 119 gallons - No more than 3% by weight of the total capacity of the container remains in the container or inner liner
 - Container over >119 gallons - No more than 0.3% by weight




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Empty Containers Holding Acute HW
(40 CFR 262.11(a)(2))



A container or inner liner removed from a container that has held an **acute hazardous waste** listed 261.11(a)(2) and therefore are either listed in 261.31 of this chapter with the assigned hazard code of (H) or are listed in 261.33(e) is empty if:

- The container or inner liner has been **triple-rinsed** using a solvent capable of removing the chemical product.



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Questions?



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