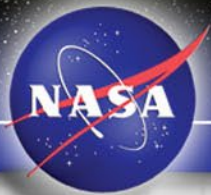


# GSFC-RCRA AND ICP ANNUAL TRAINING (WFF)

## PART 1



# Training Topics



The following topics will be discussed in this training:

- Selected Hazardous Material Topics
- Hazardous Waste Requirements
- Pollution Prevention
- Sustainable Acquisition
- Emergency Preparedness



# Hazardous Material Storage



Improperly managed hazardous materials often become unusable and result in disposal as a hazardous waste.

When storing hazardous materials in flammable storage lockers, follow the guidelines below. Flammable storage lockers should not

contain:

- Compressed gases
- Expired chemicals
- Damaged aerosol cans or cans which have a clogged nozzle
- Rags or excess paper

Flammable storage lockers should contain:

- Labeled containers
- Secured container lids
- Upright containers
- Compatible chemicals
- Doors with a three-point closing
- Label with name, phone number and code for point of contact





# HMMS



**Reminder!**

## Return the Sticker

NASA GSFC uses the Hazardous Material Management System (HMMS) to record the location and to electronically store a Safety Data Sheet (SDS) for each hazardous material that enters WFF through Receiving (Bldg. F-19).

The yellow HMMS sticker must be removed before any container leaves a work area as an empty container to trash or as hazardous waste via disposal through the Environmental Office.

Use one of the three ways described in the poster on the right to turn-in the yellow sticker.



The image shows a yellow hazardous material inventory sticker with a black and yellow diagonal hazard pattern at the top. The text on the sticker includes: "HAZARDOUS MATERIAL", "Return the Hazardous Material (HM) inventory sticker when your container is empty!", and a data block for "NITRIC ACID 90-100%". The data block contains: MFG: PURITAN PRODUCTS, NSN: 681000G105354, MSDS: 244864, Haz: C, DISP, EXP, LOT, and a barcode with the number 52860.1105. At the bottom of the data block, it says "VOC LB/GAL: HCC:".

• Scan and email to [WFF-DL-HMMS@mail.nasa.gov](mailto:WFF-DL-HMMS@mail.nasa.gov)

• Or mail to: Code 200C HMMS, F-19

• Or call x1760

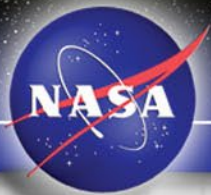
**Aerosol cans are an exception. All aerosol cans must be turned over to the Environmental Office for evaluation.** To dispose of aerosol cans, call the Hazardous Waste Hotline at **x1718**. Do not remove the yellow sticker on aerosol cans.

Find Safety Data Sheets at <https://sites.wff.nasa.gov/code250/HMMS.html>

Details are in GPR 4100.2

An empty hazardous material container has less than 1 inch of residue after all hazardous material has been used through the normal process of pouring, scraping, or draining. To dispose of hazardous material containers with more than 1 inch of residue or to dispose of rags, tech wipes, brushes, or rollers which have come in contact with hazardous materials, contact the Hazardous Waste Hotline at **x1718**.





# Labeling Secondary Containers



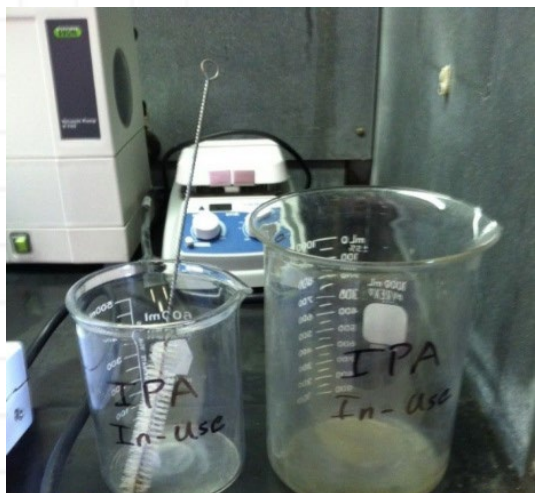
Often hazardous materials may need to be transferred from a large container to a smaller, easier to handle container, such as a squirt bottle. That smaller secondary container must be labeled with the:

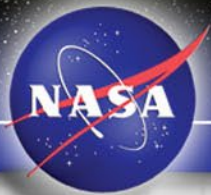
- Name of Chemical.
- Warning Words (Flammable, Corrosive, etc) as they appeared on the original container.



If a work area process requires soaking of a part or piece of equipment in a tub, beaker, or vat, label that container. Over time the solvent or soaking solution may become discolored and appear to be “waste-like” even though it continues to be used for its intended purpose (such as degreasing).

- Use the words “In-Use” to label these containers instead of the word “waste”, because this solution is not intended to be disposed.





# RCRA



In 1976, Congress passed the Resource Conservation and Recovery Act or RCRA. This directed the Environmental Protection Agency (EPA) to develop and implement a program to protect human health and our environment from improper handling of hazardous waste (HW) and unsafe management practices.





# Solid Waste Definition

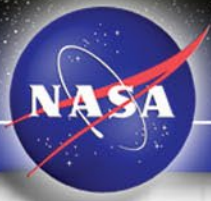


For an item to be considered a hazardous waste, it has to meet a very specific definition. The first part of the definition is that it is a Solid Waste.

A Solid Waste Is:

Any solid, liquid, or contained gaseous material that is no longer used, and is either recycled, thrown away, or stored until sufficient quantities are accumulated for treatment or disposal.

Hazardous wastes are currently regulated by both Federal and state environmental laws.



# Hazardous Waste Definition



The second part of the definition is that the waste is classified as “Hazardous” in one of two ways:

- It exhibits any of the characteristics specified by EPA regulations as hazardous (ignitable, corrosive, reactive, or toxic).

OR

- It is specifically listed as hazardous waste in EPA regulations (e.g. F-List, P-List, etc).

Characteristic HW will be discussed first.





# Characteristic Hazardous Waste



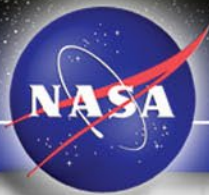
## D001 Ignitable (Flashpoint < 140F)

- The most common type of Characteristic HW is those that are Flammable. The HW word for Flammable is Ignitable. This applies to HW whose flashpoint is less than 140 degrees Fahrenheit. D001 is the HW waste code that would be used on a label for waste isopropyl alcohol.

## D002 Corrosive (pH $\geq$ 12.5, pH $\leq$ 2)

- A second common type of Characteristic HW are those that are Corrosive. By definition only those HW that have a pH greater than or equal to 12.5 or less than or equal to 2 would be labeled with the waste code D002. Other wastes with corrosive on their original label would still need to be disposed by the Environmental Office. These items cannot be placed in the trash or poured down a drain. For example, a partial container of drain cleaner would have a pH greater than 12.5 and require a HW label for proper disposal.





# Characteristic Hazardous Waste



## D003 Reactive (unstable, reacts violently with water, explosive)

- HW are Reactive when they are unstable, react violently with water, or are a DOT Class 1.1, 1.2, or 1.3 Explosive. The D003 waste code is used. Unusable rocket motors are D003 Reactive. WFF has a treatment permit to Open Burn these items by static firing at the south end of Wallops Island.

Many of the subsequent codes apply to HW that contain metal above a regulatory level.

## D004 Arsenic

## D005 Barium

## D006 Cadmium

- Usually, nickel cadmium batteries can be recycled and are not a hazardous waste. However, if a nickel cadmium battery explodes or cracks its outer casing, it must be disposed as a HW and would then have the waste code D006.





# Characteristic Hazardous Waste



Examples of other Characteristic waste codes include:



## D007 Chromium

- zinc chromate spray paint

## D008 Lead

- tin lead solder scraps



## D009 Mercury

- broken thermometers

## D011 Silver

- x-rays

## D018 Benzene

- gasoline fuel filters

## D035 Methyl Ethyl Ketone

- paint thinner

## D039 Tetrachloroethylene

- brake cleaner, dry cleaning fluid





# Listed Hazardous Waste



The past 3 slides discussed Characteristic HW. According to the definition, a hazardous waste can either have a characteristic or appear on a list, in other words be Listed.

The example below is for a Listed HW from Non-specific Sources

## **F003**

- The following spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvents mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and a total of ten percent of F001, F002, F004, and F005.

This waste code is often used for HW rags which have been used with a solvent in the F003 list for degreasing.





# Listed Hazardous Waste



Some Listed HW appear as a single chemical. These chemicals have been determined by EPA to be toxic to humans or the environment. These waste codes only apply when the chemical listed is the sole active ingredient.

## Acute HW

### **P001 - Warfarin**

- Rat poison

### **P015 - Beryllium**

### **P042 - Epinephrine**

## Commercial Chemical Products

### **U165 - Naptha**

### **U220 - Toluene**

### **U080 - Methylene Chloride**



# Knowledge Check



Once a waste meets the definition of a solid waste, it can be a hazardous waste in one of 2 different ways:

- A. Flammable or Corrosive
- B. Characteristic or Listed
- C. Hazardous or Nonhazardous
- D. Good or Bad



# Knowledge Check



Once a waste meets the definition of a solid waste, it can be a hazardous waste in one of 2 different ways:

- A. Flammable or Corrosive
- B. Characteristic or Listed
- C. Hazardous or Nonhazardous
- D. Good or Bad

The correct answer is B



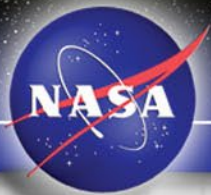
# Knowledge Check



A HW is an Ignitable HW with a waste code of D001 if it has a flashpoint of:

- A. <150F
- B. <200F
- C. <140F
- D. <50F





# Knowledge Check



A HW is an Ignitable HW with a waste code of D001 if it has a flashpoint of:

- A. <150F
- B. <200F
- C. <140F
- D. <50F

The correct answer is C



# Identify Hazardous Waste



A hazardous waste determination should be made before a waste is generated. Refer first to the hazardous material label and then to the Safety Data Sheet (SDS) for information such as flashpoint or pH. Contact the HW Hotline at x1718 prior to generating a new waste stream (NASA WFF SAAs only). Any waste hazardous material labeled as Flammable will meet the definition of a HW. Any waste hazardous material labeled as Corrosive will need to be disposed by the Environmental Office.



Each SDS has a variety of information including:

- Identification
- Hazardous Ingredients and Components
- Physical & Chemical Characteristics
- Fire & Explosion Hazards
- Reactivity Data
- Health Hazard Data
- Spill/Leak Procedures
- Special Protection
- Special Precautions

Information on how to access the GSFC SDS system can be found at:

<https://code200-external.gsfc.nasa.gov/250/node/70>



# Knowledge Check



To the right is an excerpt from a SDS. If this item needed to be disposed, would it be a HW?

- A. No
- B. Yes; The flashpoint is <140F
- C. Yes; Containers may explode when exposed to extreme heat.
- D. No; I use this product at home and just dispose of it in the trash.

**SHERWIN-WILLIAMS CO -- G2 AEROSOL SPRAY  
LINE-2 (PAINTS), G2A156 DARK GRAY --  
8010-00N070920**

**===== Fire Fighting  
Measures**

**Flash Point:<21F,<-6C**

**Lower Limits:0.5%**

**Upper Limits:12.0% Extinguishing  
Media:USE CARBON DIOXIDE, DRY  
CHEMICAL, FOAM.**

**Fire Fighting Procedures:WEAR  
NIOSH/MSHA APPRVD SCBA & FULL PROT  
EQUIP .**

**WATER SPRAY MAY BE INEFFECTIVE. IF  
WATER IS USED, FOG NOZZ ARE PREF.  
WATER MAY BE USED TO COOL (SUP DAT)**

**Unusual Fire/Explosion Hazard:KEEP  
CONTRS TIGHTLY CLSD. ISOLATE FROM  
HEAT, ELEC EQUIP, SPARKS & OPEN  
FLAME. CLSD CONTRS MAY EXPLODE  
WHEN EXPOSED TO EXTREME HEAT.  
APPLICATION TO HOT (SUP DAT)**



# Knowledge Check



To the right is an excerpt from a SDS. If this item needed to be disposed, would it be a HW?

- A. No
- B. Yes; The flashpoint is <140F
- C. Yes; Containers may explode when exposed to extreme heat.
- D. No; I use this product at home and just dispose of it in the trash.

SHERWIN-WILLIAMS CO -- G2 AEROSOL SPRAY  
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WATER SPRAY MAY BE INEFFECTIVE. IF  
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HEAT, ELEC EQUIP, SPARKS & OPEN  
FLAME. CLSD CONTRS MAY EXPLODE  
WHEN EXPOSED TO EXTREME HEAT.  
APPLICATION TO HOT (SUP DAT)

The correct answer is B



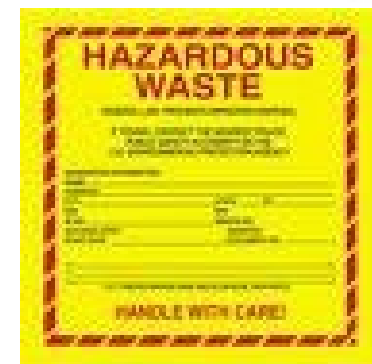


# Label Hazardous Waste



HW containers must always be labeled.  
All HW labels must:

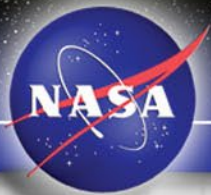
- Identify or name the chemical
- Include warning words which identify the hazard
- State “Hazardous Waste”
- Not be dated in the Satellite Accumulation Area (SAA). If a SAA contains a 55-gallon full container or 1 kilogram of acute hazardous waste, please call the HW Hotline immediately at x1718.



If a preprinted label is not available, the required information can be handwritten on the container.



This Flammable DOT label identifies the hazard.



# Label Regulated Waste



All wastes must be labeled even if they do not meet the definition of a hazardous waste. The labeling requirements described below can be met with a properly completed pre-printed label or by handwriting the label information on the container.



## Petroleum products

- Label with the words “Used Oil.” Do not use the words Waste Oil.



## Universal waste

- Universal waste (UW) are three specific items normally encountered at WFF - fluorescent lamps, thermostats, batteries.
- Label with the words “Universal Waste Lamps, Batteries, or Thermostats” and Start Date.
- The start date is the date when the first item is placed in the container. When items in the container are disposed, please attach a new label. Do not scratch out dates.



## Other nonhazardous waste

- Label with the container contents. Items in an original container do not need additional labeling.





# Universal Waste Reminder Signs



UW are the only waste which must be dated while located in the SAA. UW are required to leave WFF and reach the recycler 1 year from the date that the first item was placed in the container. UW reminder signs, located next to the UW SAA container, remind the work area of this important requirement.

<b>UNIVERSAL WASTE</b>	
SHIPPER _____	
ADDRESS _____	
CITY, STATE, ZIP _____	
CONTENTS <b>Batteries</b>	
ACCUMULATION START DATE <b>3/1/2019</b>	

- Date the label when the first battery is added to the container.
- **Check the date.**
- Call x1718 if the date is 9 months old.
- Keep the container closed.



# Universal Waste Batteries



Please **tape** contact ends of Lead acid, Nickel Cadmium, Nickel Metal Hydride, Lithium, Silver, and Mercury batteries with clear strapping tape.







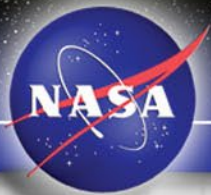
# Knowledge Check



Which items below would require a dated UW label?

- A. Rags and tech wipes which contain acetone and grease
- B. Solder scraps
- C. Used Oil
- D. Used nickel cadmium batteries
- E. Used fluorescent lamps

A purple rectangular label with a white border. The top half has the words "UNIVERSAL WASTE" in large, bold, white capital letters. Below this, there are five lines of text, each followed by a horizontal line for writing: "SHIPPER", "ADDRESS", "CITY, STATE, ZIP", "CONTENTS", and "ACCUMULATION START DATE".



# Knowledge Check



Which items below would require a dated UW label?

- A. Rags and tech wipes which contain acetone and grease
- B. Solder scraps
- C. Used Oil
- D. Used nickel cadmium batteries
- E. Used fluorescent lamps

A purple-bordered label for Universal Waste. The top section is purple with the words "UNIVERSAL WASTE" in white, bold, sans-serif font. Below this is a white section with a purple border containing the following fields: "SHIPPER" with a line, "ADDRESS" with a line, "CITY, STATE, ZIP" with a line, "CONTENTS" with a line, and "ACCUMULATION START DATE" with a line.

The correct answer is D and E



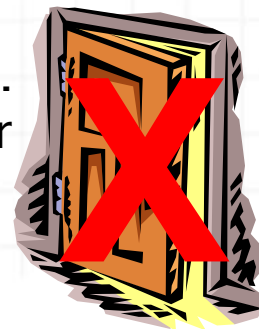
# SAA



The floor or table where a waste collection container is located is a Satellite Accumulation Area (SAA). This container allows workers to collect and store waste without necessitating the worker to call the Environmental Office for disposal each time waste is generated. The container may be labeled to collect HW, UW, or nonhazardous waste. Examples would include containers labeled to collect Used Oil, UW batteries, or HW rags and wipes.

The SAA is:

- Established in coordination with the Environmental Office.
- Located near the point-of-generation (work area). The SAA has to be in the same room as the work area and within sight of the generation of hazardous waste. The SAA cannot be in a closet or outside storage area.
- A centralized storage area for one point-of-generation.
- Under the control of the operator.
- Maintained in compliance with regulatory and WFF requirements.
- Managed by a designated point-of-contact who is responsible for upholding and enforcing all requirements.





# Designated HW Storage Point



The HW Generator Improvement Rule requires each HW container to be shown on a map or diagram. These diagrams are included in the Integrated Contingency Plan.

Before relocating a SAA, contact the Environmental Office, even if the container will only be moved from one side of the room to the other.





# Under the Control of the Operator



The 2016 HW Generator Improvement Rule also provides additional guidance to further clarify the meaning of “under the control of the operator.” The operator should be someone who:

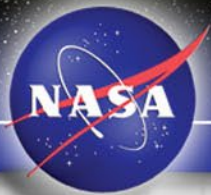
- Controls access to SAA by access card, key, or lock box.
- Accumulates waste in a locked cabinet and controls access to the key, even if access to the room is not controlled.
- Is positioned to regularly view the SAA during the course of their job.
- Is able to see if anyone enters or exits the SAA.



Each SAA must have a Point-of-Contact (POC) who assumes the role of controlling the SAA. The point of contact should work with the HW.

The POC will inspect the SAA and request pick-up of HW.





# SAA Requirements



Every SAA should have the following items:

## Spill kit

- The spill kit should be sized to match the amount of waste stored in the SAA. It can be as simple as a few tech wipes or as elaborate as a complete 85 gallon kit.



## Emergency communication

- SAA workers must always carry a radio or cell phone or a telephone should be located in the same room as the SAA.

## Secondary Containment

- All liquid waste must be on secondary containment.

## Storage aids

- Keep extra containers on hand.

## SAA sign

- Keep the sign updated with current contact numbers.



## Inspection sheet

- Complete inspections monthly.

## SDS

- If SAA waste are consistent, keep SDS in the SAA.



# Store Hazardous Waste



Containers must be :



- In good condition without holes, dents, or significant rust. Be sure to check the container bottom.
- Stored on secondary containment if the waste is a liquid.
- Compatible with the waste. Corrosive waste should not be stored in metal containers.
- Kept closed, wrench-tight, and upright.
- Sturdy.
- Filled to allow for 3-5 inches of headspace.



# Hazardous Waste Quantity



## Maximum Quantity

55

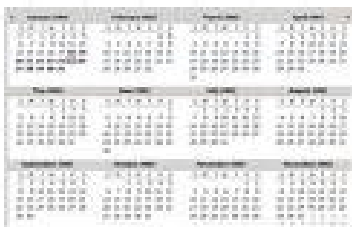
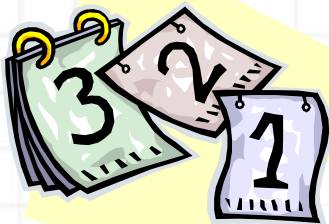
55

55

- Each SAA can only accumulate 55 gallons of HW or 1 kilogram of Acute HW. Acute HW are those with a waste code beginning with the letter “P.”
- The 55 gallon limit includes:
  - All points of generation within the SAA.
  - All types of HW in the SAA. If a SAA has 5 gallons of HW paint thinner and 30 gallons of HW rags and wipes, then the HW total in the SAA is 35 gallons.
  - Containers with a HW label. UW, Used Oil and nonhazardous waste containers, regardless of size, are not counted in the 55 gallon limit.
  - The amount of HW in the container, not the size of the container.



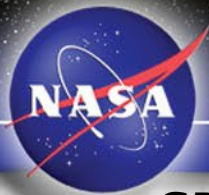
# Time Limits



- Regulations require that once a 55-gallon HW container becomes full or there is a total of 55 gallons of HW in a SAA, it must be picked up from the SAA within 3 days.
  - Remember, only waste that meets the definition of HW contributes to the 55 gallon limit.
- UW (batteries, thermostats, and fluorescent lamps) must reach the recycler within 1 year from the time that the first battery was placed in the container.
- There is no time limit for nonhazardous waste, but containers should be removed if they are full.







# SAA Inspection



GPR 8500.3 requires that each NASA WFF SAA be inspected monthly.

- On the inspection sheet, use one column per month, entering the month and date of each inspection.



**GENERATOR'S INSPECTION RECORD**  
SATELLITE ACCUMULATION AREA

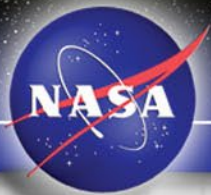
Site: Greenbelt   
Wallops Main Base   
Wallops Island

Point of Contact \_\_\_\_\_ Building \_\_\_\_\_ Room \_\_\_\_\_

Inspection date: Year																				
Month/day																				
<b>Container Conditions</b> If any of the following are marked YES, explain problem and corrective action on back or attached sheets. Identify each by line number and date.																				
1. Are any open?																				
2. Are any severely rusted or leaking?																				
3. Are any container heads bulging?																				
4. Are any generating any heat?																				
5. Are any odors noticeable?																				
<b>Container Markings</b> If any of the following are marked NO, explain problem and corrective action on back or attached sheets. Identify each by line number and date.																				
6. Contents marked on all containers?																				
7. Hazardous Waste labels on all containers?																				
<b>Container Storage</b> If any of the following are marked NO, explain problem and corrective action on back or attached sheets. Identify each by line number and date.																				
8. Are all ignitables away from ignition sources?																				
9. Are incompatibles separated?																				
10. Is there less than 45 gallons (at Greenbelt) or 55 gallons (at Wallops) of HW in the SAA?																				
11. Is there less than 1/2 quart (at Greenbelt) or 1 quart (at Wallops) of acute HW in SAA?																				
<b>Satellite Accumulation Area</b> If any of the following are marked NO, explain problem and corrective action on back or attached sheets. Identify each by line number and date.																				
12. Have all hazardous waste generators been trained?																				
13. Is the area free of hazardous waste releases?																				
14. Is secondary containment provided?																				
15. Is emergency contact information clearly identified at SAA?																				
NOTES:																				

X = Yes, N = No  
GSFC 23-63 (12/03) ALL PREVIOUS EDITIONS ARE OBSOLETE





# Inspecting the SAA



Please use the inspection sheet on the proceeding page to ensure that:

- All containers are closed.
  - Container rims are tight without rags hanging out of the rim.
  - Bungs are wrench tight.
  - Containers do not have unlocked funnels.
- Containers are not leaking or bulging.
- All containers are labeled.
- Less than 55 gallons of HW is stored in the SAA.
- The SAA sign and inspection sheet are updated.
- Liquids are stored on secondary containment.
- The SAA exhibits good housekeeping.
  - Equipment does not block access to the SAA.
  - Trash is not on the floor near the SAA.
- All people have taken this training within the last year.





# Knowledge Check



How often does a SAA need to be inspected?

- A. Weekly
- B. Daily
- C. At the end of the work process
- D. Monthly



# Knowledge Check



How often does a SAA need to be inspected?

- A. Weekly
- B. Daily
- C. At the end of the work process
- D. Monthly

The correct answer is D



# Turn-In Procedures



When items need to be picked up for disposal:

- Fill out Hazardous Waste Disposal Inventory Form (GSFC 23-54) (NASA WFF waste only).
- Call the HW Hotline at x1718.
- While awaiting pickup, keep chemicals:
  - Segregated
  - Packaged to avoid breakage
  - Stored on secondary containment (liquids)
  - Labeled
  - Not dated (except UW and full 55-gallon containers)





# Hazardous Waste Disposal Inventory Form



Be complete when filling out this form prior to a pick-up.

See specific hints below for the process, *Degreasing lead sheet metal with an acetone rag. Waste is stored in a 5-gallon pail.*

## Hazardous Waste Disposal Inventory/Greenbelt/Wallops

Generator Information										
Name:				Date:		Phone:				
Code:			Building:			Room:				
Waste Inventory										
Item	WASTE DESCRIPTION <i>Describe material to be collected by its specific chemical constituents or by trade name.</i>	WASTE ID OR CONTAINER # <i>(Provided by the Environmental Office).</i>	GENERATING PROCESS <i>Describe the work process that made the waste, e.g., expired shelf life, cleaning paint brushes.</i>	CONTAINERS			STATE			WASTE TRAIT <i>Insert appropriate code.</i>
				No.	Size	Type	Gas	Liquid	Solid	
1.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CA - Corrosive (pH < 2 or > 12)
2.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CB - Corrosive (pH > 12)
3.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F - Flammable (Flashpoint < 140°F)
4.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NR - Non-Regulated
5.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OX - Oxidizing
6.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Px - Peroxidizable
7.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R - Reactive (air or other sensitive)
8.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	T - Toxic
9.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other (Specify)
10.							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Generator Comments**

Have you received Resource Conservation and Recovery Act (RCRA) generator training within the last 12 months? Yes  No

Have you made a good faith effort to minimize your waste generation by considering substitutes or alternatives? Yes  No

Comments - Indicate special requirements (if any) for collection of the waste material, e.g., restricted access to an area, appointment needed, generator monitor collection, etc:

**Generator Certification**

I hereby declare that the contents of this inventory are fully and accurately stated as described by their waste, process, and container packaging.

Printed Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Date Received: \_\_\_\_\_

At Greenbelt, when received by \_\_\_\_\_  
At Wallops, when received by \_\_\_\_\_  
GSFC Form 23-54 (Feb 2000)

**1. Generator Information**  
Enter your information

**2. Waste Description**  
Completely describe the waste. Enter *Acetone rag with lead*

**3. Generating Process**  
Enter *Degreasing lead sheet metal*

**8. Generating Certification**  
You are certifying that all the information above is correct. *Check, Print Name and Sign*

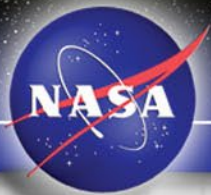
**4. Containers**  
Enter *1, 5G, pail*

**7. Generator Comments**  
Check **Yes** for attending this training

**6. State**  
Check **Solid**

**5. Waste Trait**  
Enter **F, T**  
Acetone is toxic and flammable. Lead is toxic





# MOSI Ticket



This U.S. Government computer is for authorized users only. By accessing this system you are consenting to complete monitoring with no expectation of privacy. Unauthorized access or use may subject you to disciplinary action and criminal prosecution.



**SUBMIT, APPROVE,  
OR VIEW SERVICES**  
CLICK HERE

Continue to Applications

[Submit suggestions, comments, concerns, or kudos](#)  
[Download MOSI training](#)

Continue to report Emergency & Trouble Calls to: **Greenbelt x6-5555 Wallops x7-4357**

- Room temperature (too hot/cold)
- Repair bathroom fixtures/accessories
- Leaks/clogs (and other plumbing issues)
- Door/door handle
- Electrical/power issues
- Light issues
- Alarms
- Fallen trees/limbs
- Fencing repairs
- Pot holes in road
- Exhaust fan issues
- Strange odor or noises
- Humidity issues

MOSI Service Requests

Quick Search  Go To

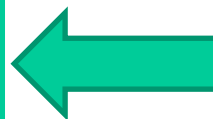
Tap for Approvals & Technical Specialists

New Ticket Group Inbox Search Tickets

Ticket	Service	Title	Status	Due Date	Schedule Score	Processed
2019-21898-0	Visitor Badge		Editing			
2019-27440-0	Visitor Badge		Editing			
2019-19030-0	WFF Launch Support		Editing			

Ticket	Service	Title
2019-5110-0	Locksmith For Wallops	Building Key F160
2019-3344-0	Key Request For Wallops	F-100 Key - Marga Morris
2018-1384-0	Key Request For Wallops	Dr. Wolfe

Ticket	Service	Title	Owner	Status	Copy
2019-10050-0	WFF Launch Support		Marianne Simko	Editing	
2019-16029-0	Visitor Badge	Faire - DOT Training		Complete	



MOSI Service Requests

Home → 2019-17094-0

**Service:** Wallops Waste Pickup

**Owner:** Marianne F. Simko (757.824.2127)

**Status:** Editing

**Ticket Title:** [Edit](#)

**Service Information:**  
Please attach a completed Hazardous Waste Disposal Inventory Form or Safety Data Sheet(s).  
The Hazardous Waste Disposal Inventory Form is located in the [NASA Electronic Forms System \(NEFS\)](#).

**Action:**  
Save Ticket Submit Ticket Print Cancel Ticket

**Requester [change]:**  
Name: Marianne F. Simko  
Code: 200 C  
Location: Building F-160 Room: C135  
Phone: 757.824.2127  
Email: marianne.f.simko@nasa.gov

**Point of Contact [change]:**  
Name: Marianne F. Simko  
Code: 200 C  
Location: Building F-160 Room: C135  
Phone: 757.824.2127  
Email: marianne.f.simko@nasa.gov

Desired Due Date  At least 1 business days from submit date

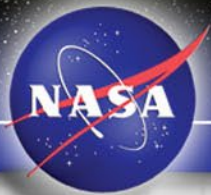
Location of waste (building, room#)

Waste Description and Quantity

Special Instruction

A NASA WFF waste pickup can also be requested in MOSI

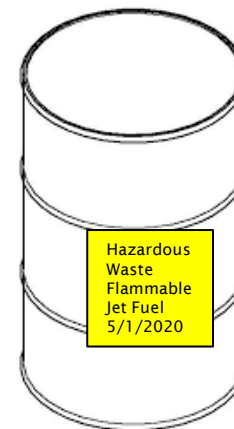
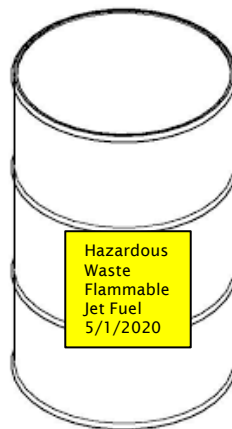
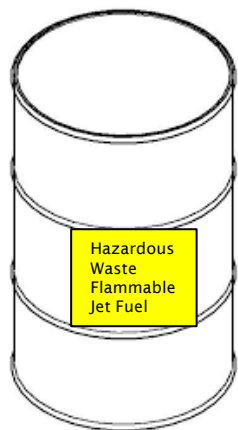
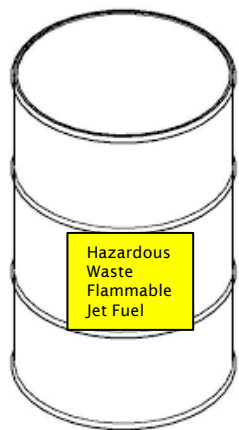
- Choose 250 Medical and Environmental Tab
- Enter HW location and information
- Complete HWDI and attach



# HW Flow



This slide describes the flow of HW at WFF.



**Waste Generating Process**  
A process generates HW.

**SAA**  
HW is placed in the SAA container.

**CAA**  
When the container becomes full, the HW is transported to the Central Accumulation Area (CAA).

**Disposal**  
In less than 90 days, the HW is shipped offsite for disposal.



# Empty Containers



Hazardous waste containers or liners are empty when:

- all wastes have been removed which can be removed and
- no more than 1 inch of residue remains on the bottom or
- no more than 3% by weight of total capacity remains (containers <110 gal)

If a container meets these conditions, remove the yellow HMMS sticker, and then the container can be placed in the trash.





# Aerosol Cans



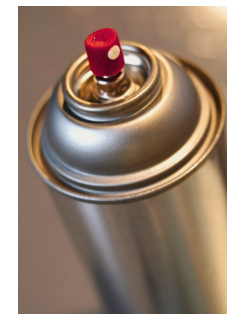
**Aerosol cans are an exception to the rule on the previous slide.**

## Aerosol Can Disposal

The Environmental Office collects ALL AEROSOL CANS. No aerosol cans should be placed in the trash, even if they are believed to be empty.

If you need a container to collect empty and discarded aerosol cans, please call the Hazardous Waste Hotline at x1718.

If you infrequently empty a can, just call 1718, and we will pick up that can.



If you have questions, please call Marianne Simko at x2127 or Shane Whealton at x1090.







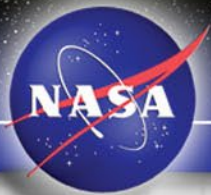
# Solder Scraps are a Hazardous Waste



- Lead solder scraps, bits, and sponges are Hazardous Waste because of the lead found in the solder.
- Every solder work station needs a properly labeled container to collect lead solder scraps, bits, wire pads, and sponges.
  - This container must be kept closed.
  - **This container cannot be emptied into another container in the room.**
- Solder sponges should be moistened at your work station. Once a sponge has been used, it cannot be moistened by carrying it to the sink or by placing it in a bowl of water.
- Each solder work station is a SAA. The building, room number and POC are registered with the Environmental Office. If a work station is relocated, please call the HW Hotline at x1718.







# Paint Booth Signs



Paint Booth Operators shall:

Paint Booth X-30

1. Clean spray guns into the approved container not into the booth filter media.
2. Transfer residue from cleaning spray guns into a Hazardous Waste labeled container and completely close the container.
3. Contact the Environmental Office for pick-up of hazardous waste as needed (extension 1718).
4. Record coating media (paint), thinner, and solvent use in the log book. This includes solvents used for cleaning equipment. Completely describe the products used by brand name, quantity, and unit of measure.
5. Maintain Safety Data Sheets, Certified Product Data Sheets, or other vendor information as approved by the Virginia Department of Environmental Quality showing the VOC content and solids content for all non-thinned coatings, thinners, and solvents used.
6. Limit coating media used to less than 346 gallons per year.
7. Limit coating media used to less than 3 pounds per hour and 15 pounds per day.
8. Ensure that the oil level in the paint booth manometer reads at least zero when not in use. If different, contact Marv Bunting (extension 2030).
9. Dispose of coating media, thinners, and solvents in a manner that minimizes emissions. These substances shall not be intentionally spilled, discarded in sewers which are not connected to a treatment plant, or stored in open containers, or handled in any other manner that would result in evaporation beyond that consistent with air pollution practices for minimizing emissions.
10. When the gauge indicates a pressure differential of greater than 1 inch, the filters should be replaced. Call extension 1718 to dispose of used filters. Used filters should remain at the paint booth until collected by Environmental.



# Spray Gun Cleaning Container



Each Paint Booth also has the sign below which describes how to clean spray guns.

Clean spray guns into this container. Not into the filter media.

Pour the contents of this container into the labeled Hazardous Waste container after each cleaning.

Be sure that the lid on the Hazardous Waste container is closed.

Call extension 1718 for pick up of Hazardous Waste.

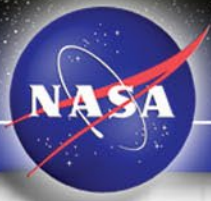


# Knowledge Check



When would a container be considered empty and able to be placed in the trash?

- A. If it is an aerosol can
- B. If the yellow HMMS sticker has been removed
- C. If the container has less than 1" of residue
- D. Both B and C



# Knowledge Check



When would a container be considered empty and able to be placed in the trash?

- A. If it is an aerosol can
- B. If the yellow HMMS sticker has been removed
- C. If the container has less than 1" of residue
- D. Both B and C**

**The correct answer is D**



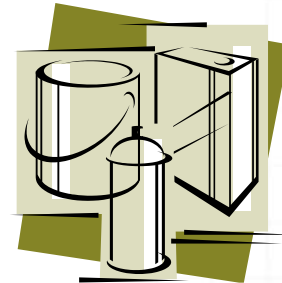
# Typical Audit Questions



WFF is regularly inspected by EPA, NASA Headquarters, and the Virginia Department of Environmental Quality. Some, but not all, of these inspectors give advance notice to WFF. Below are example questions which an auditor may ask you. If you don't know the answer don't be afraid to say, "I Don't know." **Never make up an answer.**

How do you use this chemical?

(Auditors are looking to see if you wipe the chemical on a rag and what you do with the rag.)



When was the last time you used this chemical?

(Auditors are looking to see if this chemical should be considered a waste.)



Where do you put this shop towel when you are finished with it?

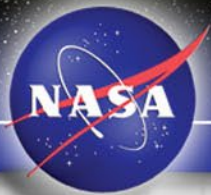
(Auditors are looking to make sure you put it in the HW container.)



What do you do with your fluorescent bulbs?

(Auditors are looking to make sure that you don't store them unlabeled in an open box somewhere.)





# Recycling at NASA WFF



WFF is required to divert 50% of its solid waste. The easiest way to do this is to increase recycling. Please place the items below in the blue or white single stream containers:

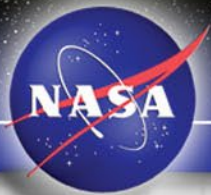
- Cardboard, newspapers, magazines, paperboard,
- White and colored paper,
- Aluminum and bi-metal cans, and
- #1 and #2 plastic bottles (Look for these numbers on the bottom of the container)
- Glass bottles

Placing **trash, yogurt containers (#5), grease-stained pizza boxes, or plastic shopping bags** in the single stream containers contaminates the recycling flow and makes recycling less profitable for recyclers and less available for those who recycle.



**Toner cartridges** are also recycled by calling the Help Desk.

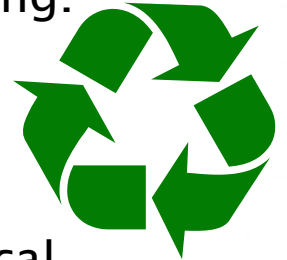
**Batteries** are recycled by calling the HW Hotline at x1718.



# Waste Prevention Tips



Every time NASA signs a HW manifest, WFF certifies that everything possible has been done to reduce the volume and toxicity of HW. Also, every time a POC signs the HWDI they are certifying the same thing. How can WFF reduce the amount of HW generated?



- Reduce, Reuse, and Recycle.
- Pursue environmentally friendly alternatives.
  - Finding a nonhazardous alternative to a hazardous chemical equals no hazardous waste.
- Perform regular maintenance and housekeeping.
  - Perhaps catching a worn hose or loose fitting before a spill and associated waste clean-up occurs.
- Order what you need. Avoid surplus inventory.
  - One WFF goal is to reduce the number of expired unopened chemicals disposed as waste.
  - Turn-in unexpired chemicals for reuse. These can be placed in the Chemical Reuse System and not wasted.
- Purchase recycled content products.

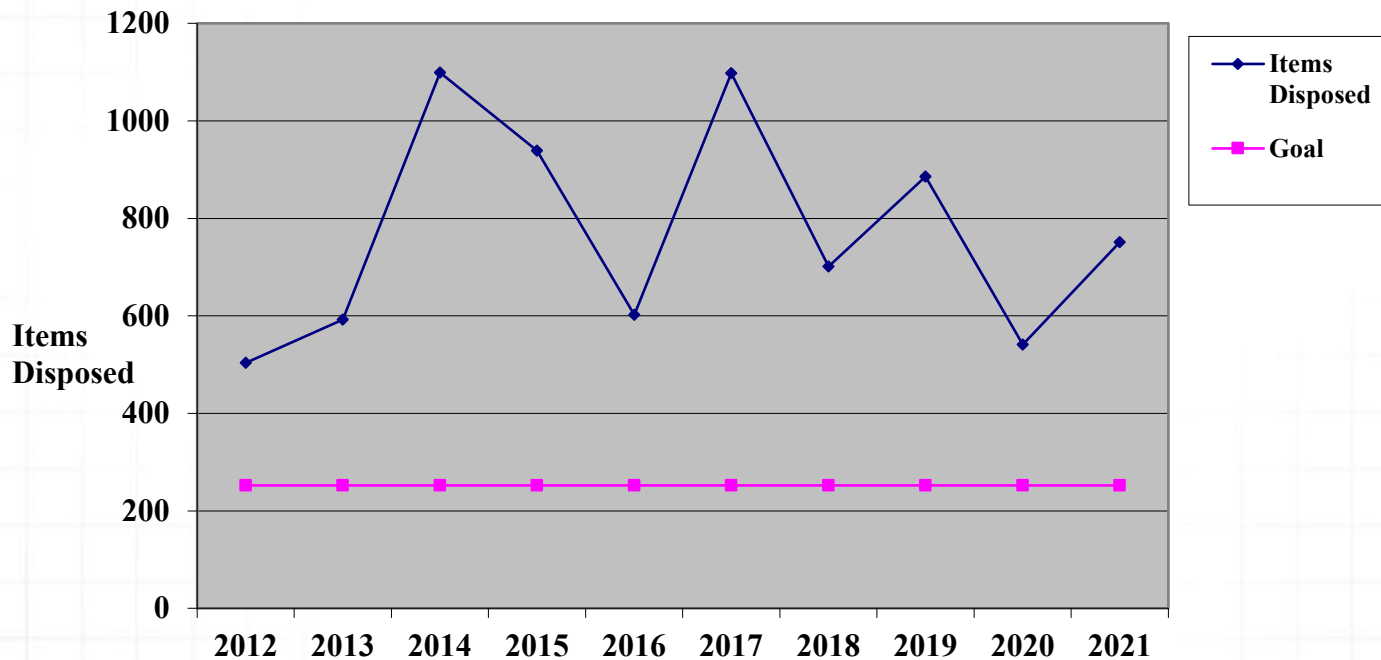


# Disposal of Expired Containers



This graph shows the number of unopened containers disposed as HW by year. It is very important to order only what is needed. Very little progress has been made toward the 50% reduction goal line.

Virgin Items Disposed Compared to 50 Percent Reduction Goal (2012 Baseline)





# Phase Out These Chemicals



The chemicals below are all good candidates to seek a nonhazardous alternative replacement.

- Benzene
- Cadmium
- Carbon Tetrachloride
- Chloroform
- Chromium
- Cyanide
- Dichloromethane
- Lead
- Mercury
- MEK
- MIBK
- Nickel
- Tetrachloroethylene
- Toluene
- 1,1,1 Trichloroethane
- Trichloroethylene
- Xylene
- Methylene Chloride



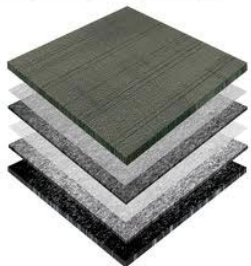


# Request Recycled Content Items

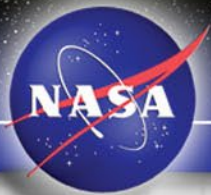


Federal agencies and their contractors that buy any of the EPA designated products, **must** buy them with recycled content. Examples of these products include carpet, office furniture, sanitary tissue, office paper and supplies, and decking.

A complete list of designated products, recovered material content levels, and vendors can be found at <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>







# Use BioPreferred Products



In addition, Federal agencies and their contractors that buy any of the USDA Designated Products, **must** buy them with biobased or agricultural content. USDA Designated Products were required as part of the Farm Act of 2002.



Examples include:

- Mobile equipment hydraulic fluids
- Urethane roof coatings
- Water tank coatings
- Diesel fuel additives
- Penetrating lubricants
- Bedding, bed linens, and towels
- Food Service take-out containers



Information on the products and sources for purchasing the products can be found at:  
<https://www.biopREFERRED.gov/BioPreferred/>

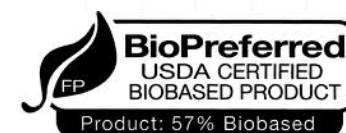


Figure 1. Label, with Biobased Product Statement, for a Product that is Within a Designated Item



# Knowledge Check



Which items cannot be placed in a single stream recycling container at WFF?

- A. Plastic bags other than the can liner
- B. #5 or #7 plastic containers such as yogurt containers
- C. Toner Cartridges
- D. Greasy Pizza Boxes
- E. All of the above





# Knowledge Check



Which items cannot be placed in a single stream recycling container at WFF?

- A. Plastic bags other than the can liner
- B. #5 or #7 plastic containers such as yogurt containers
- C. Toner Cartridges
- D. Greasy Pizza Boxes
- E. All of the above

The correct answer is E





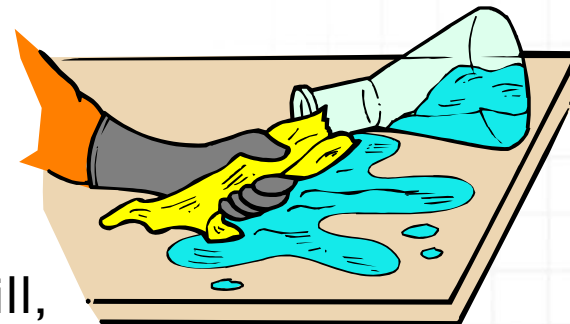
# Spill Procedures



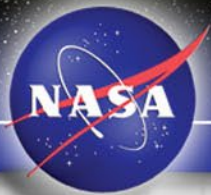
WFF has established procedures to ensure protection of human health and the environment. These are included in WFF's Integrated Contingency Plan (ICP). You will learn more details in the ICP training that follows this training.

It is important to remember:

- The Emergency number at WFF is **911** from a WFF phone or **757-824-1333** from any phone.
- Report all outdoor spills and give as much information as possible about the spill including:
  - Name and code of reporting party,
  - Type/name of material spilled,
  - Location of spill,
  - Cause of spill,
  - Estimated quantity and flow rate of spill,
  - Time of spill







# Hurricane Procedures

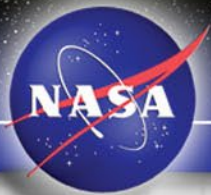


In the event of a hurricane or other severe weather event, do not bring HW from Wallops Island/Mainland to the Main Base. The areas have different EPA Identification Numbers which prevent transportation of HW between the 2 areas.

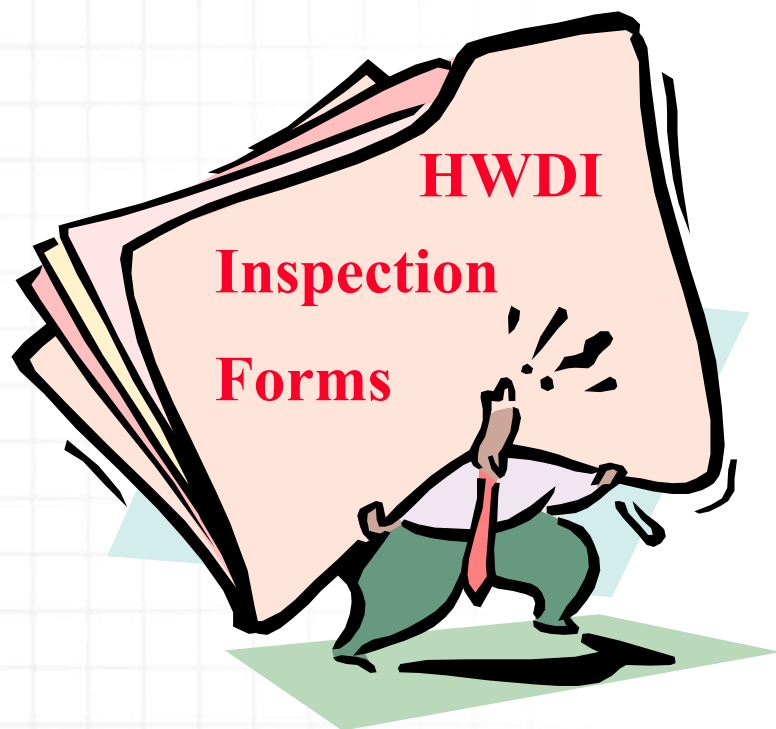
- The Environmental Office will check or call SAAs on the island to determine if there is a flooding concern.
- HW will be picked-up. Do not bring HW to Environmental Staff.
- Do not drop off HW outside of buildings B-29 or U-81.
- Never leave a container unlabeled. There have been occasions where containers have blown over the rock wall and then surfaced on the beach. A labeled container prevents the need for costly analysis to determine the container contents.







# HW Forms



Forms discussed in this training can be obtained by:

- Calling the HW Hotline (x1718)
- Using the NASA Electronic Forms (Forms 23-54 and 23-63)  
<https://nef.nasa.gov/>
- Using the Code 250 website  
<https://code200-external.gsfc.nasa.gov/250-WFF/forms>



# CODE 250 WEBSITE



## There's lots of good information on the Code 250 Website

<https://code200-external.gsfc.nasa.gov/250-wff/>

The screenshot shows the homepage of the Code 250 website. At the top, it features the NASA logo and the text "National Aeronautics and Space Administration Goddard Space Flight Center". Below this is a navigation bar with tabs for "Home", "GB Environmental", "WFF Environmental", "GB Medical", and "WFF Health Unit". The main header area includes the text "Providing Comprehensive Center Support Services" and "Medical and Environmental Management Division (Code 250)". A large "code200" logo is prominently displayed. Below the header, there are sections for "Program Areas" (Personnel, Forms, Documents, Newsletters, Emergency, Related Links, Env. Mgmt. System) and "Feature Articles". The "Feature Articles" section highlights two reports: "July 07, 2022 - Calendar Year 2021 Drinking Water Quality Report for the Main Base" and "July 01, 2021 - Main Base Annual Drinking Water Quality Report-2021".

This screenshot displays the "Wallops Environmental Team Members" page. It lists various personnel roles and names, such as "Personnel: Bonstel, Michael", "Forms: All Program Manager", "Documents: Michael C. Bonstel@nasa.gov", "Newsletters: Bryner, Doug", "Emergency: Douglas W. Bryner@nasa.gov", "Related Links: Bluestone Environmental Group, Inc.", "Env. Mgmt. System: Brian E. Cornwell@nasa.gov", and "Sustainability: Culver, Mark". To the right of the list, there are several small photographs showing groups of people at various events and meetings.

This screenshot shows the "Hazardous Waste Guidelines" section of the website. It includes a "Background" section explaining the Environmental Office's role in managing hazardous waste. Below that, it lists "Hazardous Waste Guidelines" with numbered points: 1. Containers, 2. Labels, 3. Quantity Limit, 4. Inventory Form, and 5. RCRA Empty. A "Points of Contact" section at the bottom lists emergency contacts for the Environmental Office.



## Hazardous Waste Guidelines

This screenshot displays the "General" documents page, which contains two tables of documents. The first table lists various reports and manuals, including "Waterworks Service Disruption Communication Plan Revision B", "Storm Water Pollution Prevention Plan", and "Wallops Environmental Management Manual". The second table, titled "Drinking Water: Consumer Confidence Reports", lists reports from 2021 back to 2019, such as "Calendar Year 2021 Drinking Water Quality Report for the Main Base".

## Personnel

## Documents



# Stand up and Stretch



Congratulations! You just finished half of the course.  
The test will be at the end of the Part 2 training.

Part 2 covers the Integrated Contingency Plan and the  
Stormwater Pollution Prevention Plan.