**Table F-2: Incompatible HW Pharmaceutical and Non-HW Pharmaceutical Materials**

| Pharmaceutical Material, Characteristic, or Property | Common Names and Examples | Incompatibility Notes |
|---|---|---|
| Aerosols | Asthma inhalers, Hurricaine topical anesthetic gel | Contains flammable propellants |
| Botox | Myobloc | Not regulated under RCRA, but must be collected and transported in its own container |
| Collodion/Nitrocellulose | New Skin, wart removers | Ignitable and incompatible with strong oxidizers, strong acids |
| Ignitable | Velphoro, Zemplar | Ignitable and incompatible with strong oxidizers, strong acids |
| Oxidizers | Silver Nitrate sticks/applicators, Arxol Silver, Amyl Nitrate, Cyanide Antidote kits, hydrogen peroxide | Ignitable HW that yields oxygen and could stimulate combustion |
| Corrosive Acids | Aluminum chloride injections, Tri-Chlor, ammonia inhalants, cupric/copper/chromium chloride, hydroxyzine hydrochloride, L-Cysteine, lactic acid, Pyridoxine HCL injection, Sporanox, acetic acid, trichloroacetic acid | Can cause fire, explosion, or violent reaction when mixed with another material |

## Contaminated Fuels

***Note: This sheet is provided as guidance only based on typical operations. A complete laboratory analytical must be performed to determine all hazardous constituents of the waste to ensure proper management.*

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

**Unleaded gasoline (MOGAS) and F-24 are toxic and flammable. MOGAS contains volatile organic compounds (VOCs) such as benzene, xylene, toluene, and ethylbenzene. F-24 may contain VOCs such as benzene, toluene, trimethylbenzene, and xylene. Refer to the SDS for specific hazards.**

### Characterization

**If any of the above materials have been contaminated with antifreeze (glycols), solvents, oils, or other mixed fuels or various chemicals, the material is no longer recyclable and must be managed as HW. All fuel types can be mixed into one drum if they are contaminated.**

### Container Marking and Labeling



1) Obtain a closed top UN/NA-rated drum (metal) from NREA for collection of contaminated fuels. Confirm the drum is grounded prior to adding fuel. Immediately after material is added to the drum, perform the following:
   a. Adhere the standard, yellow "HAZARDOUS WASTE" label to the outside of the drum.
   b. Circle or check the hazard "IGNITABLE" (Note: "TOXIC" may also be needed based on waste characterization).
   c. Write "D001" (Note: Other U, D, or F codes may be necessary based on the mixture.)
   d. Write "UN1993 WASTE FLAMMABLE LIQUIDS, N.O.S. 3, II CONTAMINATED FUELS, [FUEL TYPE(S)], AND [CONTAMINANTS]" under Chemical Constituents.
   e. DO NOT add the date until the drum is full or ready to be turned in.
   f. Within 3 inches to either side of the label, place the DOT Class 3 diamond.
2) Confirm the drum is in the SAA. When contaminated fuels are added to the drum, wear proper PPE listed on the SDS of the material. **Ensure a 4-inch headspace is left to allow for possible expansion.** Immediately upon completion of adding material to the drum, ensure that the lid and bungs are closed and secured tightly.
3) When the drum becomes full or the process generating the waste is complete (whichever occurs first), mark the accumulation start date and call NREA at (703) 432-0527.

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## Amalgam Waste (Dental)

Note: This sheet is provided as guidance only based on typical operations. A complete laboratory analytical must be performed to determine all hazardous constituents of the waste to ensure proper management.

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

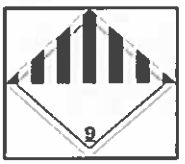
Amalgam waste is collected from the dental clinics and may contain traces of mercury and/or silver which are HW based on the toxicity characteristic.

### Characterization

If either mercury or silver are above TCLP detectable limits, then this material must be managed as a HW.

### Container Marking and Labeling

1) Obtain an open top UN/NA-rated pail from NREA for accumulation of amalgam waste. Immediately after material is placed into the pail, perform the following:
   a. Adhere the standard, yellow "HAZARDOUS WASTE" label to the outside of the container, based on analytical results.
   b. Circle or check the hazard "TOXIC."
   c. Write "D009, D011" under Waste Code (dependent on waste determination).
   d. Write "NA3077, HAZARDOUS WASTE, SOLID, N.O.S 9, III (RQ: MERCURY, SILVER)" under Chemical Constituents.
   e. DO NOT add the date until the container is full, or ready to be turned in.
   f. Within 3 inches to either side of the label, place the DOT Class 9 diamond.




2) Ensure the pail is in the SAA. When adding waste to the pail, wear proper PPE listed on the SDS of the material originally used to create the associated waste stream. Immediately upon completion of adding waste material to the pail, ensure that the lid and bungs are closed and secured tightly.


3) When the container becomes full or the process generating the waste is complete (whichever occurs first), mark the accumulation start date and call NREA at (703) 432-0527.

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# NON-RCRA / NON-DOT REGULATED (NON-HW)

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## Used Absorbent

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

Absorbent material (dry sweep, booms, etc.) contaminated with petroleum, oil, or lubricants (POLs) or other materials

### Characterization

This waste stream consists of absorbent material used to clean POLs and is considered non-HW and is not regulated under RCRA or by DOT. Free liquids or absorbent material used to cleanup solvent spills or other possibly hazardous materials are not to be collected in this drum.

### Container Marking and Labeling


1) Obtain an open-top UN/NA-rated drum (metal) from NREA for accumulation of POL absorbent waste. Immediately after material is placed into the drum, perform the following:
   a. Adhere the standard blue "NON-REGULATED WASTE" label.
   b. Write "USED ABSORBENTS" under Constituents.
2) Confirm the drum is in the proper accumulation area. When adding waste to the drum, wear proper PPE listed on the SDS of the material originally used to create the associated waste stream. Immediately upon completion of adding waste material to the drum, ensure that the lid and bungs are closed and secured tightly.
3) When the drum becomes full or the process generating the waste is complete (whichever occurs first), mark the accumulation start date and call NREA at (703) 432-0527.

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## Oily Rags

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

*Oil remnants*

### Characterization

This waste stream consists rags, wipes, and/or paper towels used to clean oil or wipe oily surfaces and is considered non-HW and is not regulated under RCRA or by DOT. Free liquids or absorbent material used to cleanup solvent spills or other possibly hazardous materials are not to be collected in this drum.

### Container Marking and Labeling

1) Obtain an open-top UN/NA-rated drum (metal) from NREA for accumulation of oily rag waste. Immediately after material is placed into the drum, perform the following:
   a. Adhere the standard, blue "NON-REGULATED WASTE" label.
   b. Write "OILY RAGS" under Constituents.
2) Confirm the drum is in the proper accumulation area. When adding waste to the drum, wear proper PPE listed on the SDS of the material originally used to create the associated waste stream. Immediately upon completion of adding waste material to the drum, ensure that the lid and bungs are closed and secured tightly.
3) When the drum becomes full or the process generating the waste is complete (whichever occurs first), mark the accumulation start date and call NREA at (703) 432-0527.

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## Used Antifreeze (Glycol)

*Contact NREA HW Program Manager at (703) 432-0527 with any questions.*

### Possible Contaminants of Concern

Ethylene glycol

### Characterization

This waste stream consists of used or expired glycol-based antifreeze. If the antifreeze has been mixed with, or in some other way came into contact with, HM (i.e., solvents, gasoline, or heavy metals), analysis will be performed to properly characterize the waste. Otherwise, this material is considered non-HW and is not regulated under RCRA or by DOT.

### Container Marking and Labeling

1) Obtain a closed top UN/NA-rated drum or bucket (metal or HDPE) from NREA for accumulation of used antifreeze waste. Immediately after material is placed into the drum, perform the following:
   a. Adhere the standard, blue "NON-REGULATED WASTE" label.
   b. Write "GLYCOL-BASED ANTIFREEZE" under Constituents.
   c. Write an accumulation start date on the label.
2) Confirm the drum is in the proper accumulation area. When adding waste to the drum, wear proper PPE listed on the SDS of the material originally used to create the associated waste stream. **Ensure a 4-inch headspace is left to allow for possible expansion.** Immediately upon completion of adding waste material to the drum, ensure that the lid and bungs are closed and secured tightly.
3) As a best management practice, MCINCR-MCBQ requires all used antifreeze to be disposed within 1 year of the accumulation start date.
4) Every 9 months, when the drum becomes full, or the process generating the waste is complete (whichever occurs first) and call NREA at (703) 432-0527.

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**Diesel and Water**

Note: This sheet is provided as guidance only based on typical operations. A complete laboratory analytical must be performed to determine all hazardous constituents of the waste to ensure proper management.

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

## Possible Contaminants of Concern

Low percentage of diesel contamination

## Characterization

This waste stream consists of water contaminated with diesel fuel. If the water has been mixed with, or in some other way came into contact with, HM (i.e., gasoline, paints, solvents, etc.), a waste determination will be performed. Otherwise, this material is considered non-HW and is not regulated under RCRA or by DOT.

## Container Marking and Labeling

1) Obtain a closed top UN/NA-rated drum or bucket (metal) from NREA for accumulation of used diesel- contaminated water. Immediately after material is placed into the drum, perform the following:
   a. Adhere the standard, blue "NON-REGULATED WASTE" label.
   b. Write "WATER CONTAMINATED WITH DIESEL" under Constituents.
2) Confirm the drum is in the proper accumulation area. When adding waste to the drum, wear proper PPE listed on the SDS of the material originally used to create the associated waste stream. **Ensure a 4-inch headspace is left to allow for possible expansion.** Immediately upon completion of adding waste material to the drum, ensure that the lid and bungs are closed and secured tightly.
3) When the drum becomes full or the process generating the waste is complete (whichever occurs first), mark the accumulation start date and call NREA at (703) 432- 0527.

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## Latex Paint in Cans

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

**Expired or excess latex paint. Latex paints are also referred to as vinyl, acrylic, or water-based paint. Latex paints manufactured before 1992 may contain traces of mercury or lead and require management as HW. Refer to SDS for specific hazards.**

### Characterization

**This waste stream consists of latex paint in closed cans. Empty or completely solid latex paint is solid waste and can be disposed in the dumpster; however, allowing paint to dry in cans for the purpose of disposal is prohibited. Liquid latex paints are considered non-HW provided they were manufactured after 1992. If there is uncertainty, contact NREA. Wastewater from latex paint cleaning may be discharged to the sanitary sewer. Discharge to the stormwater system is prohibited.**

### Container Marking and Labeling


1) Obtain an open-top UN/NA-rated drum (metal or HDPE) from NREA for accumulation of latex paint cans. Immediately after material is placed into the drum, perform the following:
   a. Adhere the standard, blue "NON-REGULATED WASTE" label.
   b. Write "LATEX PAINT" under Contents.
2) Confirm the drum is in the proper accumulation area. When adding waste to the drum, wear proper PPE listed on the SDS of the material originally used to create the associated waste stream. Immediately upon completion of adding waste material to the drum, ensure that the lid and bungs are closed and secured tightly. Only closed containers are to be accumulated in this drum.
3) Units must first contact the base recycling center (Building 3185) in an effort to redistribute any unopened or salvageable latex paint before classifying it as waste. When the drum becomes full, the excess paint cannot be redistributed, or the process generating the waste is complete (whichever occurs first), mark the accumulation start date and call NREA at (703) 432-0527.

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## Alkaline Batteries

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

*Primary, non-rechargeable alkaline batteries*

### Characterization

*This waste stream consists of alkaline batteries which are non-rechargeable and not considered HW or UW under RCRA or by DOT.*

### Container Marking and Labeling

1) Obtain an open-top UN/NA-rated container or bucket (metal) from NREA for accumulation of alkaline batteries. Immediately after the first battery is placed into the container, perform the following:
   a. Adhere the standard, blue "NON-REGULATED WASTE" label.
   b. Write "ALKALINE BATTERIES" under Contents.
2) Confirm the container is in the proper accumulation area. When adding waste to the container, wear proper PPE listed on the SDS of the material originally used to create the associated waste stream. Immediately upon completion of adding waste material to the container, ensure that the lid is closed and secured tightly.
3) When the container becomes full or the process generating the waste is complete (whichever occurs first), mark the accumulation start date and call NREA at (703) 432-0527.

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# UNIVERSAL WASTES

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## UW Lamps (Intact Only)

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

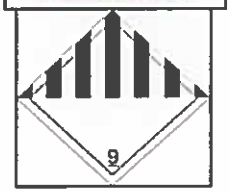
### Possible Contaminants of Concern

**Small quantities of mercury and potentially other hazardous metals are used to manufacture fluorescent lamps**

### Characterization

**This waste stream includes all spent intact (non-broken) lamps which are managed as UW.**

### Container Marking and Labeling





1) Lamps should be collected in their original packaging (e.g., boxes) or in other packaging that will minimize breakage during normal handling conditions.
2) Containers must be closed at all times unless adding material.
3) Separate fluorescent lamps and high-intensity discharge lamps.
4) Contact NREA to order containers designed specifically for waste collection and transportation, if needed.
5) Immediately after the first bulb is placed in the container, perform the following:
   a. Adhere the standard, purple "UNIVERSAL WASTE" label.
   b. Write in the accumulation start date.
   c. Write "USED LAMPS" under Contents.
   d. Within 3 inches to either side of the label, place the DOT Class 9 diamond.
6) Confirm the box or container is in a designated UW collection area, separate from SAAs. When placing the bulbs into containers, handle carefully to avoid breakage. Ensure the box or container is closed and secure box with tape.
7) Every 9 months, when the container becomes full, or when the process generating the waste is complete (whichever occurs first) call NREA at (703) 432-0527.

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## Used Lithium/Magnesium Batteries

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

*These devices consist of one or more electrically connected electrochemical cells which is designed to receive, store, and deliver electric energy. An electrochemical cell consists of an anode, cathode, and electrolyte. A device is also considered a battery if it is intact, unbroken, and all of the electrolyte has been removed.*

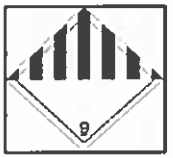
### Characterization

**This waste stream includes all used lithium or manganese batteries considered UW. Batteries must be separated by type into individual containers including lithium sulfur dioxide batteries, lithium-manganese batteries, lithium thionyl chloride batteries, lithium ion batteries, and magnesium batteries.**

### Container Marking and Labeling

1) Obtain an open-top UN/NA rated pail from NREA. Immediately after the first battery is placed in the container, perform the following:
   a. Adhere the standard, purple "UNIVERSAL WASTE" label.
   b. Immediately write the accumulation start date.
   c. Write "USED BATTERIES" and specify the type under Contents.
   d. Within 3 inches to either side of the label, place the DOT Class 9 diamond.

2) Wear proper PPE as noted on the SDS. Before adding batteries to the container, they must be either placed in individual plastic sealable bags or have all terminals fully sealed by electrical tape to prevent the terminals from touching.




3) Confirm the container is in a designated UW collection area, separate from SAAs. Ensure the lid is closed and secured after adding material. Store the container out of the elements to ensure no water gets into the container.
4) Units are required to keep an accurate count of batteries and mark the final count on the outside of the container prior to turn-in.
5) Every 9 months, when the container becomes full, or when the process generating the waste is complete (whichever occurs first) call NREA at (703) 432-0527.

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## Used Dry-Cell Batteries

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

**These devices consist of one or more electrically connected electrochemical cells which is designed to receive, store, and deliver electric energy. An electrochemical cell consists of an anode, cathode, and electrolyte. A device is also considered a battery if it is intact, unbroken, and all of the electrolyte has been removed.**

### Characterization

**This waste stream includes all used dry-cell batteries that must be managed as UW. Batteries are to be separated by type into individual containers including nickel-cadmium, nickel-metal hydride, mercury, zinc oxide/zinc air, and silver oxide batteries.**

### Container Marking and Labeling



1) Obtain an open-top UN/NA-rated container or pail from NREA. Immediately after the first battery is placed in the container, perform the following:
   a. Adhere the standard, purple "UNIVERSAL WASTE" label
   b. Immediately write the accumulation start date.
   c. Write "USED BATTERIES" and specify type under Contents.
   d. Within 3 inches to either side of the label, place the DOT Class 8 diamond.
2) Wear proper PPE as noted on the SDS. Before adding batteries to the container, they must be either placed in individual plastic sealable bags, or have all terminals fully sealed by electrical tape to prevent the terminals from touching.
3) Confirm the container is in a designated UW collection area, separate from SAAs. Ensure the lid is closed and secured after adding material. Store the container out of the elements to ensure no water gets into the container.
4) Units are required to keep an accurate count of batteries and mark the final count on the outside of the container prior to turn-in.
5) Every 9 months, when the container becomes full, or when the process generating the waste is complete (whichever occurs first) call NREA at (703) 432-0527.

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## Used Lead-Acid Batteries

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

**These devices consist of one or more electrically connected electrochemical cells which is designed to receive, store, and deliver electric energy. An electrochemical cell consists of an anode, cathode, and electrolyte. A device is also considered a battery if it is intact, unbroken, and all of the electrolyte has been removed. Lead-acid batteries can be gel-filled or contain an acidic electrolyte solution of sulfuric acid.**

### Characterization

*This waste stream includes all used lead-acid batteries, gel or non-gel.*

### Container Marking and Labeling

1) Obtain an open-top UN/NA-rated drum from NREA. Immediately after the first battery is placed in the container, perform the following:
   a. Adhere the standard, purple "UNIVERSAL WASTE" label
   b. Immediately write an accumulation start date.
   c. Write "USED LEAD-ACID BATTERIES" under Contents.
   d. Within 3 inches to either side of the label, place the DOT Class 8 diamond.


2) Wear proper PPE as noted on the SDS. Use extra caution with non-gel batteries to ensure materials do not spill. Before adding batteries to the container, all terminals must be fully sealed by electrical tape to prevent the terminals fromtouching. Avoid overloading container to prevent batteries from getting crushed.
3) Confirm the container is in a designated UW collection area, separate from SAAs. Ensure the lid is closed and secured after adding material. Store the container out of the elements to ensure no water gets into the container.
4) Units are required to keep an accurate count of batteries and mark the final count on the outside of the container prior to turn-in.
5) Every 9 months, when the container becomes full, or when the process generating the waste is complete (whichever occurs first) call NREA at (703) 432-0527 or take to the Quantico Recycling Center (Building 3185).

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# RECYCLABLE MATERIAL (NON-WASTE ITEMS)

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## Used Oil

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

### Possible Contaminants of Concern

*Used oils that are NOT contaminated with solvents, glycols, or fuels are not regulated as HW under RCRA if they will be recycled or reprocessed. Used oils include any oils that have been refined from crude oil, or any synthetic oil that has been used and as a result of use is contaminated by physical or chemical impurities. Examples include motor oil, hydraulic fluid, electrical insulating oil, transmission fluid, compressed oils, cutting oils, and coolants.*

### Characterization

*Uncontaminated used oils are managed as recyclable material. If an oil has been contaminated with gas, diesel, or solvent, it will be managed as HW and is not to be included in this drum.*

### Container Marking and Labeling

1) Obtain a closed-top UN/NA-rated drum (metal) from NREA for collection of used oils. Immediately after material is added to the drum, perform the following:
   a. Stencil "USED OIL FOR RECYCLE" on the side of the drum. (Note: Labeling the contents "WASTE OIL" indicates the that material is not suitable for recycling and will be managed as HW).
2) Confirm the drum is in the proper accumulation area. When adding used oil to the drum, wear proper PPE listed on the SDS of the original material. **Ensure a 4-inch headspace is left to allow for possible expansion**. Immediately upon completion of adding material to the drum, ensure that the lid and bungs are closed and secured tightly.
3) Do NOT mix glycols, solvents, or fuels in this drum.
4) When the drum becomes full or the process generating the waste is complete (whichever occurs first) call NREA at (703) 432-0527.

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**Uncontaminated Fuels (Gasoline, MOGAS, Diesel, and F-24)**

***Contact NREA HW Program Manager at (703) 432-0527 with any questions.***

## Possible Contaminants of Concern

**Unleaded gasoline (MOGAS) and F-24 are toxic and flammable. MOGAS contains VOCs such as benzene, xylene, toluene, and ethylbenzene. F-24 may contain VOCs such as benzene, toluene, trimethylbenzene, and xylene. Refer to the SDS for specific hazards.**

## Characterization

*Uncontaminated fuels are managed as recyclable material.*

## Container Marking and Labeling

1) Obtain a closed top UN/NA-rated drum (metal) from NREA for collection of uncontaminated fuels. Confirm the drum is grounded prior to adding fuel. Immediately after material is added to the drum, perform the following:
   a. Adhere the standard, blue "NON-REGULATED WASTE" label.
   b. Write "[FUEL TYPE] FUEL FOR RECYCLE" under Contents
   c. Within 3 inches to either side of the label, place the DOT Class 3 diamond.


2) Confirm the drum is in the proper accumulation area. When adding recyclable fuel to the drum wear proper PPE listed on the SDS of the material. **Ensure a 4-inch headspace is left to allow for possible expansion**. Immediately upon completion of adding material to the drum, ensure that the lid and bungs are closed and secured tightly.
3) DO NOT mix different fuel types in the same drum.
4) When the drum becomes full or the process generating the waste is complete (whichever occurs first) call NREA at (703) 432-0527.

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**Appendix G**

Quantico Marine Corps Base HW Sample Collection SOP

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# HAZARDOUS WASTE SAMPLING
# STANDARD OPERATING PROCEDURE

**Marine Corps Installations National Capital Region –**
**Marine Corps Base Quantico (MCINCR-MCBQ)**

Natural Resources & Environmental Affairs (NREA)
3250 Catlin Avenue, Suite 104
Quantico, VA 22134-5001

**July 2020**

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ASD | Accumulation Start Date |
| COC | Chain of Custody |
| CFR | Code of Federal Regulations |
| EPA | Environmental Protection Agency |
| HM | Hazardous Material |
| HMMS | Hazardous Materials Management System |
| HW | Hazardous Waste |
| HWMP | Hazardous Waste Management Plan |
| MCINCR-MCBQ | Marine Corps Installations National Capital Region - Marine Corps Base Quantico |
| PPE | Personal Protective Equipment |
| PVC | Polyvinyl Chloride |
| SDS | Safety Date Sheet |
| SOP | Standard Operating Procedure |

# 1.0 INTRODUCTION

## 1.1 Purpose

This Hazardous Waste (HW) Sampling Standard Operating Procedure (SOP) presents sample collection procedures needed to implement the Marine Corps Installations National Capital Region – Marine Corps Base Quantico (MCINCR-MCBQ) Hazardous Waste Management Plan (HWMP).

The validity and accuracy of laboratory analytical data is contingent on the manner in which samples are acquired and handled. A representative sample should contain all components of the sampled waste in proportions that are consistent with the contents of the entire waste stream. Accurate analytical information is obtained from representative samples. If the sample does not fairly represent the total composition of the waste stream, then neither will the data that is produced from the analysis of this sample.

This SOP defines sampling and visualization procedures used at MCINCR-MCBQ. Representative samples may be obtained from various types of containers using the methods outlined herein.

## 1.2 Samples and Sampling

Waste samples are collected from a containers, waste piles, or surface impoundments, described in **Section 7.2**. A sampling device must be selected depending on the size and type of the container and the specific material involved. Access to a container may affect sampling device selection and number of samples taken. In addition, the type of container or material may dictate alternate sampling locations.

# 2.0 SCOPE AND APPLICATION

This procedure describes the process by which representative samples of waste streams are collected for the purposes of generating analytical data to support waste management decisions at MCINCR-MCBQ. It also describes visual inspection procedures.

# 3.0 ROLES AND RESPONSIBILITIES

## 3.1 HW Program Manager

The HW Program Manager is responsible for:

- Ensuring that HW Team Members use this procedure;
- Reviewing and approving this procedure;
- Acting as liaison with Unit Environmental Coordinators when issues are identified; and
- Reviewing sample results and complete profile sheets.

### 3.2 Hazardous Materials (HM) Program Manager

HM Program Manager is responsible for:

- Communicating when procedures change in the work area;
- Providing safety data sheets (SDSs) to technicians upon the technician's request;
- Assisting HW Team Members with sample collection; and
- Assisting in the review of sample results and completing HW profile sheets.

### 3.3 HW Team Members

This SOP applies to all employees performing HW and HM operations at MCINCR-MCBQ and those who are obligated and responsible for operational support activities and compliance.

HW Team Members are responsible for:

- Following safety procedures in all circumstances;
- Using job-specific safety procedures to maintain a safe work environment;
- Ensuring comprehension of what is expected of them as they complete tasks; and
- Complying with this procedure.

## 4.0 PERSONAL PROTECTIVE EQUIPMENT (PPE), SAFETY, AND WASTE HANDLING

The use of PPE is a control measure to limit the exposure to the identified potential hazards. PPE must be worn to minimize personnel exposure to contaminants. At a minimum, personnel performing sampling will wear modified Level D protection, including work boots, eye wear, and nitrile gloves for sampling. Chemicals that pose specific toxicity or safety concerns should be addressed as appropriate. At the discretion of the HW Program Manager, MCINCR-MCBQ Industrial Hygiene Specialist, Installation Safety Office, and unit supervisor, arrangements for sampling using Level B PPE may be required.

Sampling should be conducted in a well-ventilated location, preferably outside. PPE must be worn during all sampling activities. Persons performing sampling must be cognizant of all health and safety requirements during each sampling event.

## 5.0 SUMMARY OF METHODS

### 5.1 Sampling Methods

This SOP is supplemented with supporting information contained in the following:

- *Test Methods for the Evaluation of Solid Waste, Physical Chemical Methods* (SW846, Environmental Protection Agency [EPA]);
- 40 Code of Federal Regulations (CFR) 261, Appendix I - Representative Sampling Methods;

- *Samplers and Sampling Procedures for Hazardous Waste Streams* (EPA-600/2-80-018);
- Installation Waste Analysis Plan;
- *Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste: A Guidance Manual*, Final (April 2015, EPA 530-R-12-001); and
- MCINCR-MCBQ HWMP.

### 5.2 Sampling Equipment

There are various sampling devices that can be used to obtain a representative waste sample. This SOP explains the construction, operation, and applicability of each sampling device as it relates to the type of waste being sampled. Similarly constructed equipment may be used following approval and training from an Operations Supervisor, or designee. The appropriate sampling device is determined by items including, but not limited to, the consistency of the material being sampled, type of container, access to the container, and the sampling location.

## 6.0 SAMPLING EQUIPMENT DESCRIPTIONS

### 6.1 Composite Liquid Waste Sampler (Coliwasa)

The Coliwasa is used to collect composite samples of liquid waste. The Coliwasa is specifically designed to collect liquid samples containing multiple phases. The Coliwasa is typically constructed from a translucent plastic such as polyvinyl chloride (PVC). The closure mechanism consists of a "T"-handle attached a stopper rod which runs inside of the tube. The bottom of the stopper rod is attached to a neoprene stopper. To operate, open the Coliwasa by pushing the rod down until the "T"-handle contacts the top of the tube. Slowly lower it into the waste until it reaches the bottom of the container. The liquid sample will enter the tube. Push the tube downward against the stopper to seal the sample inside of the tube. Slowly withdrawn the Coliwasa with one hand and wiped clean with a cloth using the other hand. Place the end of the sample tube in a sample container and open it by slowly releasing the T-handle. Place the lid on the sample container.

### 6.2 Cylindrical Tube

The cylindrical tube is used to collect composite samples of liquid or sludge waste. The cylindrical tube is usually composed of glass, but any substance which does not react with the waste may be used. It is typically 4 feet in length with an internal diameter of approximately 3/8 inch. Both ends of the tube must be unobstructed for proper operation. To operate, slowly lower the tube into the waste until it reaches the bottom of the container and allow it to fill with the liquid sample. Place a thumb over the top end of the tube, ensuring full coverage to create suction, and withdraw the tube from the tank. Place the bottom end of the tube in the sample container and remove the thumb to allow the liquid to flow out. Place the lid on the sample container.

### 6.3 Thief (Grain Sampler)

The thief is used for sampling powder or granular waste. This tool consists of two slotted telescoping tubes. The outer tube has a conical, pointed tip on one end that permits the thief to penetrate the waste material. The thief is opened and closed by rotating the inner tube. To operate, insert the thief into the waste with the inner tube closed. Rotate the inner tube of the sampler to the open position. Jostle the thief to allow material to enter the open slots. Close the sampler by rotating the inner tube back to its original position. Withdraw the sampler from the waste, remove the inner tube, and empty the contents into a sample container. Place the lid on the sample container.

### 6.4 Trier

The trier is used for sampling powdered or granular material that is moist or sticky. The trier is a long tube with a slot that extends almost the entire length of the tube. The tip and edges of the tube slot are sharp. To operate, insert the trier vertically into the waste and rotate it to cut a core of the waste. Slowly withdraw the device with the slot facing upward. Remove the sample from the trier and place it in a sample container. Place the lid on the sample container.

### 6.5 Scoop/Shovel

The scoop/shovel is used for sampling dried solid or sludge. The blade is curved with a sharp tip and with a closed upper end to contain scooped material. To operate, collect small, equal portions from the sub-surface portion of the waste by pushing the scoop into the material. Remove the sample from the scoop and place it material in a sample container. Place the lid on the sample container.

### 6.6 Ladle (Dipper)

The ladle is used to collect liquid waste samples from a surface impoundment, a lagoon, or open top tanks. The ladle is composed of a sampling cup affixed to the end of a long handle. To operate, dip and submerge the cup into the liquid and allowed it to fill. Remove the sample from the container and pour it into a sample container. Place the lid on the sample container.

## 7.0 SAMPLING PROCEDURES

MCINCR-MCBQ manages wastes in containers approved for the waste. Each type of waste accumulation container requires specific sampling procedures. The types of containers and procedures used at MCINCR-MCBQ are described in this section and **Table 7-1** lists sampling equipment recommended by EPA for various waste types.

For recurring waste, the sampler should review Marine Corps Hazardous Materials Management System (HMMS) records, the Hazardous Waste Sampling and Analysis Work Document, other pertinent shipping documents, and/or profile information in order to become familiar with the specific waste type and the known potential hazards associated with the waste stream before attempting to collect a sample. After reviewing these documents, the person performing the sampling must determine the appropriate level of PPE, sampling equipment and methods, and required analysis.

### 7.1 Vacuum Trucks

Vacuum trucks will typically contain liquids or slurries. Collect samples with a Coliwasa or a cylindrical tube.

First locate the vacuum truck vent and clear the area to ensure any vented exhaust will not contact bystanders. Open ventilation valves to relieve the tanker of any residual pressure. To collect the sample, assume a stable stance and place a Coliwasa or a cylindrical tube through the dome lid following procedures listed in **Section 6.1 or Section 6.2**. When sample collection is completed, close the dome lid and tighten toggle bolts. Close, or request the drive closes, the ventilation valves.

### 7.2 Dump Trucks

Waste streams hauled in a dump truck are usually solids with various consistencies. First, request the driver to unlatch any straps used to secure the tarp and roll the tarp to one side of the container. Use a platform or ladder to visually inspect the waste. Select an appropriate sampling tool based on the consistency of the waste. Collect a total of two samples are following procedures listed in **Section 6.0** as follows: collect one sample from the front of the truck bed and one from the rear of the truck bed. Samples must be collected at a depth of at least 1-foot below the surface or at the full depth if the depth of the waste is less than 1-foot. Combine the two samples and collect a subsequent final sample from the composite. Return any excess sample to the load container.

### 7.3 Drums

Segregate drums into groups by individual waste streams. Determine what type of waste the drum(s) contains. Position the drum(s) so the bung or lid is upright and allow the contents to settle. Slowly open the drum(s). Pressure can build in the drum and is released while unscrewing the lid (typical for volatile wastes). Visually inspect the contents of the drum(s). Select an appropriate sampling device and collect samples following procedures listed in **Section 6.0**, ensuring horizontal and vertical displacement to obtain a representative sample. Return any excess sample

material to the drum. Samples of like physical appearance within a single waste stream may be composited into one sample. Close and secure the drum(s) and latch the bung.

### 7.4 Barrels, Fiber Drums, Cans, Bags, Boxes, and Sacks

Segregate these containers into groups by individual waste streams. Open containers to be sampled in a manner that will not damage the container. Personnel must carefully avoid puncturing the container. Visually inspect the contents of the container. Select an appropriate sampling device and collect samples following procedures listed in **Section 6.0**, ensuring horizontal and vertical displacement to obtain a representative sample. Return any excess sample material to the container and close the container.

Samples of like physical appearance within a single waste stream may be composited into one sample.

### 7.5 Surface Impoundments

Inspect the area to determine if the waste in the impoundment is a homogeneous mixture. Choose the appropriate sampling device. Collect three samples following procedures listed in **Section 6.0** as follows: one from near the bottom of the impoundment and two from the sides of the impoundment. Composite the samples unless stratification is observed. If stratification is observed, collect grab samples from each stratified layer.

### 7.6 Bottom Sludge

Sludge can accumulate at the bottom of any container. For a container with minimal sludge buildup, collect four grab samples using appropriate sampling device and following procedures listed in **Section 6.0**. The four samples must be composited into a single sample for laboratory analysis.

When sampling from a container with 3 inches of buildup or more, collect four samples from the thickest layers of sludge at random locations, using appropriate sampling device and following procedures listed in **Section 6.0**. These four samples must NOT be composited into a single sample and must be provided to the laboratory as separate samples.

### 7.7 Frozen Waste

Waste streams which are frozen must be warmed sufficiently, prior to sampling, to allow representative sampling, and for an inspection for free liquids.

### 7.8 Pressurized Containers

Perform a visual examination of all containers prior to inspecting or sampling. A container that is bulging or has a curved side may have a buildup of excess pressure. The degree of the convex curve relative to the horizontal plane is a good indication of the amount of pressure.

Notify the HW Program Manager of any and all drums that are bulging. If the technician inspecting the drum determines that it is safe to open, slowly decompress the vapors by gradually turning the bung counterclockwise until the vapors are heard escaping the drum. Keep the bung in place until the pressure reaches equilibrium and no vapors are heard escaping. When the sound of vapors stops, turn the bung again until vapors are heard. Again, leave the bung in place until the pressure reaches equilibrium. Repeat this process until the bung is removed. This process should not be rushed or expedited as a rapid decompression of the vapors could lead to adverse results that could affect health and environment. A buddy-system must be utilized during this process of opening a pressurized container. Overpack the container for and transfer onsite and transport offsite.

### 7.9 Lab Packs

Lab packs must be visually inspected to ensure that adequate absorbent is present, and the drum or pail is 90% full. Lab Packs are not sampled.

**Table 7-1: Applicability of Sampling Equipment to Waste Streams**

| Waste Type | Waste Location or Container | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Drum | Sacks and Bags | Open Bed Truck | Closed Bed | Storage Tanks or Bins | Waste Piles | Ponds, Lagoons, Pits | Conveyor Belt | Pipe |
| Free flowing liquids and slurries | Coliwasa | N/A | N/A | Coliwasa | Weighted Bottle (a) | N/A | Dipper | N/A | Dipper |
| Sludges | Trier | N/A | Trier | Trier | Trier | (b) | (b) | (b) | (b) |
| Moist powders or granules | Trier | Trier | Trier | Trier | Trier | Trier | Trier | Shovel | Dipper |
| Dry powders or granules | Thief | Thief | Thief | Thief | (b) | Trier | Thief | Shovel | Dipper |
| Packed sand or powders and granules | Auger | Auger | Auger | Auger | Thief | Thief | (b) | Dipper | Dipper |
| Large-grained solids | Large Trier | Large Trier | Large Trier | Large Trier | Large Trier | Large Trier | Large Trier | Trier | Dipper |

(a) When the tank is adequately agitated or a recirculation line is accessible, samples can be collected through a side tap.
(b) This type of sampling situation can present significant logistical sampling problems, and sampling equipment must be specifically selected or designed based on site and waste conditions. No general statement about appropriate sampling equipment can be made.

**Source:** *Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste: A Guidance Manual, Final* (April 2015, EPA 530-R-12-001)

## 8.0 SAMPLE LABELING

The appropriate label with the following information must be placed on the sample container before submittal to the laboratory along with the proper chain-of-custody (See **Section 10.0**).

- Sample identification
- Place of collection
- Date of collection
- Person sampling

Samples not delivered to the lab on the day collect must be kept refrigerated.

## 9.0 SAMPLING RECORD

Information must be recorded in the sampling record sufficiently to allow others to reconstruct the following information, at a minimum:

- Location of sampling point
- Volume of samples taken
- Date of collection
- Sample identification number
- Person sampling
- Comments or observations
- Sampling methodology (composite or grab)

Each unit or sampling area (laboratory, waste site, etc.) may develop documentation systems appropriate to their area to record this information.

## 10.0 CHAIN-OF-CUSTODY (COC)

The COC form, provided by the laboratory, must be completed for all samples collected for laboratory analysis. The COC form provides documentation and verifies possession of all samples that are collected, transported, submitted to a laboratory to ensure they are traceable from the time of collection through analysis. The information for each sample provided on the COC must match the information on the sample label.

All samples must be accompanied by a COC record. When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. The COC record documents sample custody transfer from the sampler, through another person, to the analyst at the laboratory. The samples are typically transferred to the sample receiving custodian at the laboratory.

## 11.0 CLEANING AND MAINTENANCE OF SAMPLING EQUIPMENT

Sampling tools must be kept clean of materials that could interfere with future analyses or cause cross-contamination. All non-disposable HW sampling equipment must be cleaned before using. Tools may be wiped clean or washed with a detergent solution, rinsed with tap water, and dried. This does not apply to sterilized sampling equipment provided by a laboratory. Disposable sampling equipment may be used once (one load, one drum, etc.) without cleaning.

If the sampling tool is contaminated with petroleum or oil residues, the first rinse should be performed with an appropriate solvent such as acetone or petroleum ether. All tools should be washed with detergent and rinsed with tap water to remove any residual solvent prior to the use of the tool to obtain samples.

Sampling equipment must be stored in clean and protected areas.

# APPENDIX H

*Waste Tracking Form*

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| MCINCR-MCBQ Waste Tracking Form | Q | | | | | - | | | |
|---|---|---|---|---|---|---|---|---|---|

REMARKS: Each command site shall fill out all information in RED and sign Gen. Signature. If SDSs are available, write the serial number or NIIN number. All information provided by site must be legible or form will be rejected.

| UNIT: | LOCATION: | BUILDING No.: | ASD: | QTY: | SDS/NIIN No: |
|---|---|---|---|---|---|

| CONTAINER SIZE (circle one): | CONTAINER TYPE (circle one): |
|---|---|
| 55gal 30gal 16gal 10gal 5gal 3gal 1gal<br>8' 6' 4' 2' 40 CY 30 CY 20 CY<br>100 / 200 / 300 / 500 / 1000 / 1500 / 3000 / 5000 / 6000 | Metal Poly Box Cylinder Bag<br>Roll-Off Tanker Truck Tank |

| | |
|---|---|
| Ph. No.:<br>Gen. Signature: | **NON-PROFILED WASTE INFORMATION** |
| | BASIC DESCRIPTION: |
| | PHYSICAL STATE: |
| 27401 LOCATION: | COLOR PH ACID? BASE? |
| CUSTODY: | PSN |
| WPN: | CLASS UN/NA PG |
| LBS: | N.O.S. CONSTITUENT |
| SSD: | WASTE CODES |
| LINK TO: | CLIN ERG RQ |
| | PROJECT NO. PROCESS CODE |
| | SOURCE CODE FORM CODE ORIGIN CODE |
| | FSC/NII RCRA? Y N |
| | CHARACTERIZATION METHOD: ANALYTICAL SDS NON-WASTE |
| | UNKNOWN MANIFEST # LINE |
| | Delivery Order No.: Delivery Order Line No.: |
| EDIT OR UPDATE | PREVIOUS UNKNOWN? REASON FIELDS CHANGED? |
| NREA HW Inspector: (703) 432-0522 | HW Program Manager: Mr. David Norris (703) 432-0530, david.norris1@usmc.mil |
| HW Operations Manager: (703) 432-0531 | HW NCO: (703) 432-0523/0520 |

| | | |
|---|---|---|
| RECEIVED BY: | INPUT BY: | CHECKED BY: |
| DOCUMENTED BY: | VERIFIED BY: | HW PM INITIALS: |