CHEMICAL PRODUCT CLEAN-OUT PROTOCOL

How you can remove unwanted chemical products in a safe and environmentally sound way!

A product of the

National Park Service/Environmental Protection Agency Partnership Project

ACKNOWLEDGMENTS

BACKGROUND:

This protocol was developed to support the NPS/EPA Partnership Project. Initiated in 1994, this Partnership is a collaborative effort between the National Park Service, Intermountain Region and U.S. Environmental Protection Agency Region 8. The work of the Partnership is based on the shared value of environmental protection and wise stewardship. This Partnership is designed to provide parks with the knowledge and skills necessary to meet their environmental goals, design and implement an integrated environmental management system and incorporate sustainable practices into park operations. The Partnership team has developed an innovative mix of tools, training and technical assistance to achieve these outcomes. The Chemical Clean-Out Protocol is one of the tools designed to help parks remove unwanted chemical products. The work of the Partnership has been successful and there are documented changes in the way that national parks in the Intermoutain Region now manage both solid and hazardous waste. We are pleased to share one of these tools with you. For more information about the NPS/EPA Partnership visit www.epa.gov/region08.

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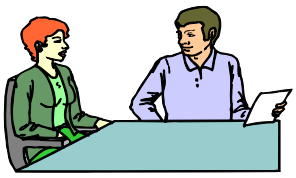

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CHEMICAL PRODUCT CLEAN-OUT

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CHEMICAL PRODUCT CLEAN-OUT PROTOCOL

This protocol was developed to support the Green Purchasing efforts for the National Park Service Intermountain Regional parks. Once your facility has committed to using green chemicals, it is important to properly remove and/or dispose of all unusable products from the site. This action will reduce your regulatory burden and help prevent possible exposure to people and the environment from spills and leaks. This protocol outlines how to conduct a chemical product clean-out in a safe and efficient way. The protocol is presented as a series of steps to be completed by facility personnel. The following terms are used in this protocol:

Clean Out Leader: Facility Environmental Manager who assumes responsibility to get the job done.

Clean Out Team: Individuals who have responsibility for managing specific areas of the facility. The Team should include the facility Environmental "Champion" and facility employees who use chemicals and are interested in participating and achieving clean-out project results.

MSDS: Material Safety Data Sheets. These should have been sent to the facility with your chemical product order. Copies can be obtained by contacting the vendor listed on the label.

Removal Products: These are products that have been identified for removal. They may include products no-longer needed that can be re-used (by non-profit groups, for example), products that can be removed from one area in the facility for use in another, or products that must be disposed of.

OSHA: Occupational Safety and Health Administration

HAZCOM: Hazardous Communication - This program is also referred to the "Employee Right to Know" Act.

There are five basic steps to the Chemical Clean-Out Project:

1. Plan the clean-out
2. Prepare or complete the inventory
3. Develop the removal chemical list
4. Remove the chemicals
5. Close-out meeting

✓✓ STEP 1- PLAN THE CLEAN-OUT ✓✓

Planning your facility wide chemical clean-out is an important first step for implementing this protocol. It gives the facility management and staff an opportunity to discuss the project and develop an approach. There are many advantages to this planning step:

* Prepares facility staff for the project and assures that safety measures are understood and will be used.
* Provides an opportunity to review and revise this protocol to fit your facility's needs.
* It assures good communication between all parties involved in the clean-out
* It is an opportunity to identify and discuss any unusual situations or safety concerns.

You should plan an initial kick-off meeting to introduce the protocol. The Clean-Out Leader should include the following in the meeting:

❑ Clean-Out Leader should determine the members of the Clean-Out Team. Be sure to include individuals responsible for buying, storing and using chemicals in all areas of the facility. Determine what areas of the facility should be cleaned up.

❑ Laboratories may pose special problems. Evaluate and discuss clean-out options.

❑ Discuss the facility's generator status and determine how much waste can be accumulated before status changes. If you have questions concerning your generator status, contact your State's Department of Environmental Quality, or U.S. Environmental Protection Agency (www.epa.gov).

❑ Identify a central storage area for handling and storage of chemicals removed.

❑ Develop a method for determining and identifying which chemicals should be reused, recycled, or disposed of. (Attachment B)

❑ Determine who will actually do the clean-out (physically handle the chemicals). Only those adequately trained should participate.

❑ Review training records to ensure that all participants have completed the 4 hour HAZCOM training and are current with their 1 hour annual refresher.

❑ Review the HAZCOM plan with the Clean-Out Team, especially the section that deals with incident spills and chemical emergencies. Make sure that equipment including personal protective equipment (see Attachment A) is available to the staff and that they understand what to do in the case of a spill or when finding an unlabeled container.

❑ Review your facility's Health and Safety Plan.

❑ Ensure that personnel with hazardous waste training are available to **immediately** respond to any chemical spills.

✓✓ STEP 2 ✓✓
DEVELOP or UPDATE THE INVENTORY

Step two of the Facility Wide Chemical Clean-Out is to prepare or update an inventory of the chemical products you have in your facility. Make sure you have the current Material Safety Data Sheets for all of these products.

ADVANTAGES:

* An inventory is required by OSHA for the HAZCOM Program.
* Your facility needs to know what they have before deciding what to get rid of.
* Once facility personnel realize what it takes to manage chemical products (MSDSs, paperwork, inventory) they are motivated to reduce their inventory.
* The Clean-Out Leader will have a clear understanding of exactly what is in the facility and what needs to be disposed of.
* Opportunities for products to be used in other parts of the facility or by the local community can be identified.

The following system was developed and field tested for the National Park Service by Dinosaur National Monument during their chemical clean-out. Use this system, alter it to suit your needs, or develop your own.

❑ Identify the areas of the facility where chemical products are stored.

Remember to list small fire safes, storage areas, fire cache, auto shop, pesticide storage area, laboratory and research areas, and areas where janitorial supplies are kept.

❑ Identify one person who will be in charge of preparing the inventory for each area and assign him/her the task. These individuals will become part of the Facility's Clean-Out Team. Each Clean-Out Team member should prepare an inventory of their area. (See Attachment B for inventory tips).

❑ Require that current MSDSs be obtained for ALL products in the area. The person responsible for each storage area (including landfills and boneyards) or who uses and disposes materials the most, should do the inventory and identification of unknowns.

❑ Review the general container handling strategies in Attachment C prior to conducting the inventory.

❑ Set a deadline for the inventory step to be completed.

❑ Review your facility's chemical procurement policy with the Clean-Out Team. Products that are no longer allowed under the policy should be identified for removal.

✓✓ STEP 3 ✓✓
DEVELOP REMOVAL CHEMICAL LIST

Now you have a list of products that need to be removed and MSDSs which tell you what precautions are needed. The next step is to decide the safest and most efficient way to collect and remove the products. Here are some ideas to think about when planning your facility's chemical product removal. Involve the Clean-Out Team members in this planning step to assure their continued commitment.

- ❑ As each team member completes the inventory and collects the MSDS, the Clean-Out Team member should review the inventory and identify all products that need to be removed. See Attachment B for tips on how to mark these removal products.

- ❑ The Clean-Out Team members should provide copies of the complete inventory, the product removal list (with their MSDSs) to the Clean-Out Leader. If any MSDS flag special considerations in handling the product, discuss with the Clean-Out Leader.

- ❑ Clean-Out Leader - Review the Product Removal List and MSDSs. Identify products that can be used in other areas of the facility, or safely given to non-profit community groups for re-use (as an example). See Attachment B for more tips.

- ❑ Determine the facility's current generator status and determine how much waste can be accumulated before the status changes. Estimate the potential quantity of excess chemicals to be rounded-up, compare with the generator status quantity limits, and confirm storage time requirements.

- ❑ If you think there may be potential regulatory issues, contact your State's Department of Environmental Quality, or U.S. Environmental Protection Agency (www.epa.gov).

- ❑ Identify a procedure to collect the removal products and identify a central storage area for the handling and storage of rounded-up containers. See Attachment C for tips on how do this. Sometimes, the best place for the products is where they are. Check with your removal company to see if they charge extra for colleting removal products from several different locations as opposed to one central location.

- ❑ Some chemicals should be moved by experts (i.e., shock sensitive). Seek outside assistance.

- ❑ Develop a method for determining and identifying which chemicals should be reused, recycled, or disposed. Review the example chemical container labeling system in Attachment B.

- ❑ Determine if NFPA diamond labels are required for the storage area.

✓✓ STEP 4 ✓✓
REMOVE THE CHEMICALS

At this point, you have a complete inventory of the chemical products in your facility and have determined which of these chemicals should be removed from the current area. The clean-out Leader should review the inventory lists and check the MSDSs to identify the status of the Clean-Out. Assemble the Clean-Out Team members to decide how and when to collect the chemicals to be removed. Confirm training records of all staff that participate on the Clean-Out Team.

- ❑ Round up the yellow-labeled containers (see Attachment B) and excess materials, and transport them to the designated Central Storage Area.

- ❑ The Clean-Out Team will further classify and label the rounded-up containers collected and add to the inventory form per Attachment B, as follows (for final classification):
  - Chemicals for central storage and potential reuse at the facility (Blue labels)
  - Unusable chemicals and materials to be segregated for off-site recycling or disposal (Red labels).

- ❑ Criteria for separating re-usable from unusable chemicals and materials include:
  - What is the actual re-use potential of the chemical/material?
  - Is the container in good shape or rusting?
  - Has the chemical exceeded an expiration or use by date?
  - Has the material dried out, weathered, solidified, evaporated etc., beyond use? (NOTE: Do not open to determine - this will decrease the product shelf life, look at expiration date, etc.)
  - What are the manufacturers disposal instructions?
  - Does the chemical or material have hazardous ingredients? (see MSDSs)
  - Are "Green" product alternatives available?
  - Will a recycler take small quantities and one-time only deliveries?
  - How much are the off-site disposal or recycling costs?
  - Can spent materials be returned to the vendor or manufacturer?

- ❑ Be sure that when you remove products, it is done is a safe manner:

  - Chemical compatibility
  - Segregate acids, bases, oxidizers, solvents, solids, etc.
  - Container integrity - Check for leaks and rust (Repair leaks, overpack, or re-containerize contents)
  - Spill containment - Provide secondary containment and shelter from the elements
  - Are specialty storage lockers required? (i.e., flammable cabinet)
  - Are spill kits available?
  - Security - Limit access with locks and fencing

✓✓ STEP 5 ✓✓
CLOSE-OUT MEETING & FOLLOW-UP

Congratulations!!! You have a clean facility. This is a good time to discuss the facility's policy for purchasing , storage and use of chemicals products. Experience has shown that after an initiative like this one, facility personnel are ready to implement new restrictive policies that will assure they never have to conduct another Facility Wide Chemical Clean-Out. Some suggestions of things to review in the close-out meeting are:

- ❑ Evaluate the successes and problems with the Clean-Out Protocol.

- ❑ Prepare a schedule for updating the inventory. Remember, it is required annually by OSHA as part of the HAZCOM plan at all Facility areas, annually as necessary.

- ❑ Develop a purchasing and inventory control plan to minimize excess materials, and eliminate unknown containers and chemical waste. Many facilities have a policy that end-of-year money will not be used to purchase products.

- ❑ Evaluate and/or implement the following suggested Pollution Prevention strategies:

* Minimize hazardous chemicals in inventory. Promote "Green" product purchasing.
* Never discard used oil. Collect used oil for reuse as fuel or recycle via a licensed re-refiner.
* Change all cleaning solvents to non-hazardous citrus-based brands.
* Convert to water-based paint for most applications.
* Designate one shed (as practical) for fuel/flammables storage (fire proof).
* Where practical, maintain a stockroom system for chemicals at the Central Storage area on a return basis (one empty container for one product container).
* Substitute refillable, rechargeable dispensers for aerosol spray-cans.
* Form a solid waste recycling committee. Promote employee and public recycling of paper, plastic, glass, and metals.

- ❑ During the annual HAZCOM annual refresher training, emphasize improved inventory control and reduced chemical use.

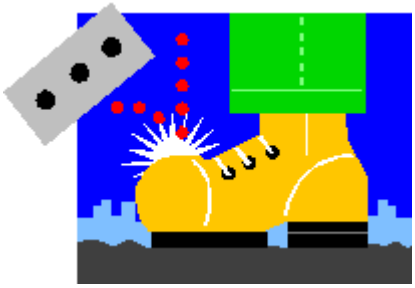
ATTACHMENT A

CLEAN-OUT PROJECT EQUIPMENT

Before your clean-out, be sure to have appropriate safety equipment readily available to the Clean-Out Team. Here are some suggestions:

- ❑ Safety Glasses

- ❑ Nitrile gloves (many boxes - depending on the Team)
- ❑ Work gloves
- ❑ A secure (fenced and locked) storage area for segregating and staging removal chemicals.
- ❑ Plastic sheeting and/or pallets for container segregation and staging.
- ❑ Drum and container labeling options such as paint pens (for "colored dots").
- ❑ A pick-up truck or trailer for transporting removal chemicals, preferably with plastic sheet lining and tie-down bungee cords.
- ❑ Replacement containers or over-pack drums for leaking or damaged containers.
- – Spill kit, in case of an accident
- – Appropriate clothing and shoes
- – Others???



ATTACHMENT B

CHEMICAL INVENTORY

- ❑ Prepare a separate inventory form for each chemical storage building or area.
- ❑ Identify each chemical or material with a common name, or from container labels and MSDSs.
- ❑ Estimate the quantity of chemicals present in containers and storage areas.
- ❑ Identify each chemical's initial classification use status on the inventory form as: (see "Options for Chemical Container Labeling" in Attachment E)
  - Currently in use - **Green**
  - Eligible for container round-up - **Yellow**
  - Unknown material for identification and re-classification - **Black**
- ❑ Estimate the amount of chemical you use per year and how much extra you need for each building or storage area. This information will allow you to move chemicals from areas with excess quantity to areas that require more inventory.

ATTACHMENT C

CONTAINER HANDLING STRATEGIES

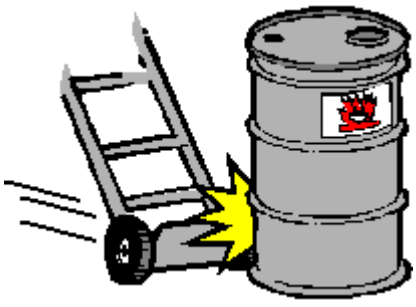
Attempt to identify unknown contents without moving or opening containers. Ask other experienced employees before marking as unknown (black label). Report leaking unknown containers immediately to your Clean-Out Leader, hazardous waste coordinator or safety officer.

- ❑ Do not transport containers from current locations unless they are an immediate threat to people or the environment if they leak or react.

- ❑ You can place excess aerosol cans of similar types in boxes for the chemical clean-out.
- ❑ Use paint pens for temporarily labeling outdoor containers prior to the round-up.
- ❑ Use good housekeeping practices in all chemical storage areas.

- ❑ Pour known liquid from a leaking container into a sound, labeled container of the same type; repair the container, use an overpack drum, or temporarily turn upside down (away from the leak).

- ❑ Segregate containers according to chemical compatibility (i.e., separate acids, bases, oxidizers, flammables and solids).



- ❑ Separate trash from chemical waste. Do not mix waste streams.
- ❑ Do not stack drums or containers.

ATTACHMENT D

OFF-SITE OPTIONS

❑ Identify practical off-site reuse and recycling options for red-tagged containers. Make phone calls.

- Cleaning solvents - via licensed transporter and recycler
- Used oils and lubricants - via licensed transporter for energy recovery or recycling
- Used antifreeze - via licensed recycling contractor
- Used oil filters - recycle metals and oil
- Used transmission and fuel filters - hot drain and discard in dumpster or recycle
- Used auto and mercury batteries - store under cover and return to distributor or recycler
- Landfills and boneyards - use as a resource, recycle materials, consider composting
- Reuse or Recycle - broken glass, used tires, used concrete and asphalt, printer toner cartridges, water filters, Halon-based products (return to manufacturer), spent fluorescent lights, HID lamps, and mercury-containing products.

❑ Identify practical off-site <u>disposal</u> options and <u>costs</u> for excess materials. Make phone calls. Implement the selected off-site recycling and disposal options within budget and schedule constraints, for example:

- Oil-based paint - dispose as hazardous
- Pesticides - dispose as hazardous
- Absorbents and wipes - if applicable, dispose as hazardous
- dispose of spent ammunition, explosives, flares, asbestos, treated wood, smoke and fire detectors per manufacturers instructions.

❑ Update the chemical/materials inventory (Attachment B) to reflect the revised inventory and quantities after off-site recycling and disposal.

ATTACHMENT E

OPTIONS FOR CHEMICAL CONTAINER LABELING

These options for chemical container labeling were designed to identify the status of stored chemicals in all areas of your facility. Unknown chemical containers should be labeled early and not be moved until identified. Chemical containers should be marked by colored "dots," and/or colored paint pens as to their status. The classification system is based on two use levels:

- Initial classification - status prior to removal from the area
- Final classification - status after the chemical clean-out and before removal from the facility.

INITIAL CLASSIFICATION - The first classification level is for chemical products that are in storage areas and shelves at your facility. You will need to work closely with the individual who uses these chemicals in order to determine their classification.

Green ◘ ***Chemicals to Remain in Inventory***
Chemicals that have been used in the last year and need to remain in inventory onsite.

Yellow ◘ ***Chemicals to be Removed From Storage During the Clean-Out***
Chemicals no longer used onsite, expired chemicals, suitable for use in other areas of the facility, or for off-site use, recycling, or disposal. This category means the chemical will be removed from its current location during the container round-up.

Black ◘ ***Unknown Chemicals*** **(DO NOT MOVE CONTAINERS)**
Unmarked containers and unknown contents pending identification. Add Month/Year and inventoried by information (i.e., 6/00, Your Name) to the label. Look for leaks, inform the Clean-Out Leader and add this chemical to your list of unknowns.

ATTACHMENT E - Continued:

OPTIONS FOR CHEMICAL CONTAINER LABELING

FINAL CLASSIFICATION - The second use classification level is for chemical products moved to the central storage area during the chemical round-up (Yellow-labeled) and indicating final disposition for the chemical. The following colored labels should be added to chemical containers with yellow labels:

Red ◘ ***Chemicals to be Disposed Of***
The chemical is to be disposed of onsite or offsite as solid waste, or offsite as chemical waste. Segregate waste containers, label and store properly.

Blue ◘ ***Potential Use Chemicals***
Chemicals with a potential use on or off-site. Containers may remain at the central storage area, be deployed to other areas at your facility, or removed offsite for reuse. Segregate as necessary.