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C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

8.20.e Control of Samples and Containers

C-A-OPM Procedures in which this Attachment is used.		
8.20		

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approved: \_\_\_\_\_ *Signature on File* \_\_\_\_\_  
 Collider-Accelerator Department Chairman Date

J. Scott

## 8.20.e Control of Samples and Containers

### 1. Obtain Sample

- 1.1 Samples are routinely drawn from drums, containers and systems, to determine if contents are radioactive or non-radioactive, and to perform TCLP or metals testing for classification of waste as hazardous or industrial waste.
- 1.2 All samples are now shipped to an outside laboratory for analysis. Each lab has different volume and container requirements for each analysis requested.

**Note:**

Sample bottles may contain a corrosive preservative. Do not overfill sample bottles or contact corrosive preservatives.

- 1.3 Contact Environmental Coordinator (x7520), or Environmental Compliance Representative (x2905), to ensure you obtain the required containers for your sampling needs. Labels shall be provided with containers and all information must be filled out.
- 1.4 During a spill, process knowledge of system will be used to handle spill. If a sample is required off-hours, draw 1L into plastic open top bottles from spill or system and label containers as follows:
  - 1.4.1 Bldg. No.
  - 1.4.2 Material Description
  - 1.4.3 Date
- 1.5 Sampling Methods to Ensure Representative Samples are Taken
  - 1.5.1 Sampling Active Water Systems
    - a. A certified Water Group Technician will draw sample from system to be analyzed.
    - b. Ensure proper sample container is obtained from Environmental Coordinator (EC), or Environmental Compliance Representative (ECR), and that label is affixed.
    - c. Ensure all RWP, PPE, or chemical controls are adhered to, while drawing sample.
    - d. Purge 250-500 mL from sample line prior to drawing sample for analysis.
    - e. Samples must be drawn and returned to EC or ECR, the same day, or placed in a secure area, and those requiring cooling placed inside a refrigerator or cooler, to maintain samples required temperature.
    - f. Purge water and used PPE shall be disposed of in appropriate areas depending on RWP, or known process knowledge of system radiological, and chemical constituents.
    - g. Sampler must sign COC and chain of custody to EC or ECR.

### 1.5.2 Sampling Containers, Drums, Tanks

- a. EC, or designee, routinely shall perform these samples. If a system expert is required to draw sample, the EC, ECR, or designee, shall assist in determining methods and observe samples to ensure proper sampling is performed.
- b. For liquid samples use a colowassa tube (EC will provide), to draw samples. This will provide a sample from top to bottom of drum, container, or tank, giving a representative sample.
- c. Colowassa tubes are simple plastic tubes ~ 3 ft. long with a rubber plunger. To take representative sample, push plunger down to open tube, place tube down into drum or tank, and when fully inserted, pull up on plunger to hold collection in tube. Remove tube and drain tube to sample bottle. Repeat until sample bottle is full.
- d. Ensure PPE, RWP, and chemical controls, are appropriate for system sampled, and that all controls are adhered to while drawing sample.
- e. Discard all waste, including sampling tubes based on process knowledge of system, or hold until sample results are known.
- f. For solids such as dirt or resins, a glass drum thief tube can be used for a representative sample. Another way is to draw a representative composite sample prior to placing waste in barrels or bins.

1.5.3 For large area sampling for soil activation or shield blocks, either Facility Support (HP) or BNL EWMSD Sampling Team shall be used to set up a release sampling plan and collect required samples. C-AD work planning shall be performed by Environmental Coordinator, or designee, in support of sampling plan.

2. For all samples, Environmental Coordinator, or designee, will fill out chain of custody forms and arrange shipping to outside lab.

2.1 All radioactive or suspected radioactive samples require either shipment from the I&SM Group, or approval to ship them as non-radioactive. I&SM needs to know isotope concentrations possible in samples. Process knowledge is used to give this.

2.2 Non-radioactive or approved I&SM Radioactive samples can be brought to Environmental sampling group for shipment.

2.3 Ensure in description section on COC you write exactly what was placed on sample container, then return to container sampled and write COC number and COC unit identifier number on barrel.

3. Store labeled drums or containers in Hazardous Waste Storage Area (HWSA), or palleted drum storage area, until sample results are returned.
4. If materials are non-radioactive:
  - 4.1 Fill out non-radioactive waste form. Also fill out pink Process Knowledge Form (PKF), even if container is not from a listed radiation area.
  - 4.2 Properly tag containers as Hazardous (red tag) or Industrial (green tag).
  - 4.3 Have Facility Support (FS) survey container for activation and contamination and complete Process Knowledge Form ensuring contents are non-radioactive.
  - 4.4 The C-AD ECR shall review analysis for chemical and/or environmental concerns. The C-AD Facility Representative, or designee, shall review results for radioactive isotopes.
  - 4.5 Attach Sample Results, COC Form, Non-Radioactive Waste Control Form (NRWCF), and Process Knowledge Certification Form, together and deliver to Environmental Coordinator (Ext. 7520, pager 631-453-5901), for review, and forward to Waste Management Division.
    - 4.5.1 If more than one sample was listed on COC, highlight sample for this waste and results on COC.
    - 4.5.2 Original NRWCF and PKF, and a copy of COC and Material Safety Data Sheet (MSDS), if required, are mailed to Waste Management for review. A copy of all documents are maintained in Hazardous Waste Binder in Environmental Coordinators Office, original COC goes into Analysis Binder.
    - 4.5.3 Move container to 90-Day Hazardous Waste Trailer, or make special arrangements with Waste Management to pick up waste.
5. If material is radioactive.
  - 5.1 Fill out Radioactive Waste Form (RWCF), including Mixed Waste Information, if required.
  - 5.2 Label drums or containers with a Radioactive or Mixed Waste Label.
  - 5.3 Forward paperwork to Environmental Coordinator. Using sample results, Environmental Coordinator will fill in the isotope concentrations on RWCF for total volume of containers.
  - 5.4 Environmental Coordinator, or designee, shall arrange for FS survey of containers, and ensure RWCF survey results, and container tag are filled out by FS.

- 5.5 Store containers in Bldg. 960 waste yard, or suitable radioactive material area for waste management pick up.
- 5.6 Send original RWCF and copy of COC to Waste Management.
- 5.7 A copy of RWCF and COC are maintained in Radioactive Waste Binder in Environmental Coordinators office. Original COC goes into Analysis Binder.