

SAMPLING OF LIQUIDS AND SOLIDS FROM ENVIRONMENTAL MATERIALS CONTAINERS

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TITLE	Approved By
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	(Name of Approver) (Date)

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2.0 PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the procedures that will be used at the Rocky Flats Plant (RFP) to sample liquid or solid environmental materials stored in containers. The techniques presented in this SOP address sampling liquid from 55-gallon containers, 2,500-gallon liquid waste storage tanks, sampling solids stored in 55-gallon drums, and sampling sludges and solids from decontamination facility sumps.

This SOP addresses sampling containers with known history only (e.g., potential contaminants are documented). This SOP does not address sampling from containers without historical documentation. When containers with unknown wastes are encountered, no sampling will be performed under this SOP.

This SOP describes personnel responsibilities and qualifications, sampling equipment and procedures, and documentation procedures.

3.0 RESPONSIBILITIES AND QUALIFICATIONS

All personnel performing these procedures are required to have the appropriate health and safety training as specified in the EG&G approved site-specific Health and Safety Plan (HSP). In addition, all personnel are required to have a complete understanding of the procedures described within this SOP and receive specific training regarding these procedures.

Personnel performing these procedures will be scientists, engineers, laboratory technicians, or field technicians with an appropriate amount of applicable field experience or on-the-job training under the supervision of another qualified person who has received the training as stated above.

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4.0 REFERENCES

4.1 SOURCE REFERENCES

The following is a list of references reviewed prior to the writing of this procedure

Environmental Protection Agency (EPA) A Compendium of Superfund Field Operations Methods
EPA/540/P-87/001 December 1987

National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), U S Coast Guard (USCG), and U S Environmental Protection Agency (EPA) Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities
October 1985

Environmental Protection Agency (EPA) Sampling For Hazardous Materials November 1984

EG&G Hazardous Waste Requirements Manual 1-10000-HWR

4.2 INTERNAL REFERENCES

Related SOPs cross-referenced in this SOP are as follows

- SOP FO 3, General Equipment Decontamination
- SOP FO 10, Receiving, Labeling, and Handling Environmental Materials Containers
- SOP FO 12, Decontamination Facility Operations
- SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples

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- SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)
- SOP FO 16, Field Radiological Measurements

5.0 SAMPLING PROCEDURES

5.1 EQUIPMENT

The following is a list of equipment used for sampling of liquids and solids stored in drums and/or other containers. Depending on the situation, not every item listed is required for every sampling event.

- Front-end loader or forklift equipped with a drum grapppler
- Nonsparking bung wrench, brass hand punch, and mallet
- Bottom-filling teflon bailer attached to a string or rope
- Sludge sampler or disposable glass tubing
- Exterior ladder with ratchet straps
- Polyethylene or stainless-steel scoop or trowel
- Stainless-steel sampling trier
- Spatulas and brushes
- Soil auger
- Aluminum pie pans
- Stainless-steel mixing bowl or pan equivalent
- Long handled stainless-steel spoon or scoop
- Organic vapor detector (OVD) and radiological monitoring equipment as specified in the EG&G approved site-specific HSP
- Sample containers, coolers, and labels
- Wash and rinse tubs

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- Phosphate-free detergent
- Distilled water
- Plastic sheeting (3 mil minimum)
- Duct tape
- Sample locations (map and/or list)
- Appropriate health and safety equipment/personal protective equipment (PPE), as specified in the EG&G approved site-specific HSP
- Logbook
- Stiff-bristle brushes

5.2 PROCEDURE

The following sections provide the procedures for handling and sampling containers and associated documentation. During sampling, the appropriate PPE will be worn, as specified in the EG&G approved site-specific HSP.

After each discrete sample is collected and prior to the next sampling event, the sampling and/or compositing equipment, including scoops or trowels, triers, augers, bowls or pans, and spatulas will be decontaminated. Complete decontamination is not required between composite sample points, however, excess solids or liquids should be wiped from the sampler after each sample and placed back in the containers from which they were collected in accordance with SOP FO 3, General Equipment Decontamination.

5.2.1 Presampling Procedures

Personnel should assume that all closed drums or other containers contain toxic and/or hazardous materials. Before handling, drums or other containers will be visually inspected to obtain as much information as possible about their contents. Examples of visual observations during an inspection

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include drum markings, labels, signs of deterioration, signs that the drum is under pressure, drum type, stains on drum storage pads, and standing liquid around drums

Because of the possibility of accidental puncture or rupture caused by deteriorated physical condition, drums or other containers will only be moved enough to allow for safe sampling or to provide required staging in accordance with SOP FO 10, Receiving, Labeling, and Handling Environmental Materials Containers. A front-end loader or forklift is the preferred piece of equipment to handle and move structurally sound drums or other containers. Structurally sound drums and other containers will be positioned so that the bung or opening is right-side up before the container is opened or sampled.

5.2.2 Health and Safety Considerations

Appropriate PPE as specified in the EG&G approved site-specific HSP will be worn at all times when handling and sampling drums or other containers and during decontamination procedures in accordance with SOP FO 3, General Equipment Decontamination, and SOP FO 4, Heavy Equipment Decontamination. Drum or other container handling and sampling will always be conducted with at least a two-person sampling team. When opening drums or other containers, caution must be used when opening drums or other containers until pressure has been relieved. In addition, to limit the risk of potential explosions, nonsparking bung wrenches will be used for opening drums or other containers.

Air quality and radiological monitoring will be performed using an OVD and/or other appropriate equipment according to known site history and the EG&G approved site-specific HSP. Containers will be screened for radiological activity and volatile organic compounds (VOCs) before and after the container is opened. Use of monitoring equipment will be in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs), and SOP FO 16, Field Radiological Measurements. In the event there are indications of any kind of reaction (e.g., smoke,

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flame, sparks, liquid color changes) or above radioactivity release limits described in the Environmental Management Radiological Guidelines (EMRG), 3 2, or volatile organics levels described in the HSP, sampling activity will stop and personnel will evacuate

5.2.3 Container Opening

Caution is to be used when opening drums or other sealed containers due to the possibility of toxic and/or hazardous contents. Containers will not be opened if they do not appear to be structurally sound. If required by the EG&G approved site-specific HSP, remote opening devices will be used. If a drum or other containers must be opened by hand, nonsparking bung wrenches will be used. Prior to opening, the container will be lightly tapped with a nonsparking bung wrench to assess the volume of contents. In addition, if a container has been moved prior to opening, sufficient time (a minimum of 1 hour) must be allowed for the contents to settle before it is opened. Plastic sheeting (8 feet x 8 feet minimum size) will be used for ground cover. A hole will be cut in the center of the plastic equal to or slightly smaller than the diameter of the container. The plastic will then be placed down around the container. The edges of the cut hole will be duct-taped to the side of the container to prevent the contents of the container from coming in contact with the ground surface. After the container is opened, the lids shall be placed on the plastic sheeting adjacent to the container.

If it is impossible to obtain samples through existing openings, containers will be opened with the use of remote opening devices (brass spike attached to a backhoe) or nonsparking hand tools (brass hand punch and mallet) only after obtaining approval from the EG&G project manager.

After containers have been opened, the contents will be monitored for radiological activity and VOCs in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs), and SOP FO 16, Field Radiological Measurements.

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After sampling is completed, replace container lids on containers. If holes were made in containers for sampling, the damaged drum(s) will be reported to EG&G Environmental Management.

5.2.4 Sampling Liquids

Liquid samples can be collected using glass tubing, a sludge sampler, or a bottom-filling bailer. These samplers allow the sampler to obtain samples of the entire container contents. Since many low-density fluids do not hold well in glass tubes and due to low surface tensions and low capillary pressures when it is raised from the container, a great deal of the sample may flow from the tube bottom. Therefore, sludge samplers or a bottom-filling bailer may have to be used to obtain liquid samples. The sludge sampler tube may be used to sample liquids because it has a rubber stopper on the open end to keep the liquid sample from escaping due to increased suction. However, the sludge sampler is difficult to decontaminate in the field and may not be appropriate when field activities are remote. When possible, samples will be taken from the entire vertical extent of the container contents. The bottom-filling bailer may collect a larger volume of sample during each event and is more easily decontaminated in the field than the sludge sampler.

5.2.4.1 Glass Tubing (Drum Thief)

If the liquid will hold in glass tubing, glass tubing may be used for sampling. A hollow-glass tube approximately 6 mm to 16 mm (0.2 to 0.6 inches) inside diameter (ID) and about 122 cm (4 feet) in length will be used. The procedure for sampling liquids with glass tubing will be as follows:

- Decontaminate equipment prior to use, in accordance with SOP FO 3, General Equipment Decontamination.
- Insert the tubing no closer than 25.4 mm (1 inch) to the bottom of the container or top of any sediments at the bottom of the container. Keep at least 30 cm (1 foot) of tubing above the top of the container.

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- Allow the contents in the container to reach their natural level in the tube
- Block the top of the tube with a rubber stopper
- Carefully remove the tube from the container
- Place the open end of the tube in a sample container and remove the stopper to allow the sample to drain into the composite container
- Repeat the procedure at the same depth at a minimum of two other points and combine the subsamples to obtain a representative composite sample of the container contents (See Section 5.3 for specific information regarding sample compositing)
- Place the glass tubing in a sealed plastic tube and dispose of according to the site-specific workplan (The tubing will not be broken and disposed of inside the container)
- Containerize and label samples in accordance with SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples

5.2.4.2 Sludge Sampler

Low density/viscous liquid samples may also be obtained using the sludge sampler (See Figure FO 20-1) The sludge sampler is a glass tube approximately 4 cm (1.6 inches) ID and approximately 152 cm (5 feet) in length with an attached neoprene stopper. By manipulating the handle and rod attached to the stopper, it can be opened and closed. The procedure for sampling liquids with a sludge sampler is as follows:

- Decontaminate equipment prior to use, in accordance with SOP FO 3, General Equipment Decontamination
- Adjust the locking mechanism, if necessary, to verify that the rubber stopper provides a tight seal

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- Put the sampler in the open position by placing the stopper rod handle in the T-position and pushing the rod down until the handle rests against the sampler's locking block
- Slowly insert the sampler into the container to be sampled until the stopper contacts the bottom of the container
- Allow the contents in the container to reach their natural level in the sampler
- Push the sampler tube downward against the stopper to close the sampler Lock the sampler in the closed position by turning the T-handle until it is upright and one end rests tightly on the locking block
- Slowly withdraw the sampler from the container with one hand while wiping the sampler tube with a disposable cloth or rag with the other hand
- Place the opening end of the sampler in a sample container and pull the lower end of the T-handle away from the locking block to allow the sample to drain into the container
- Repeat the procedure at the same depth from a minimum of two other points and combine the aliquots to obtain a representative composite sample of the container contents (See Section 5.3)
- Decontaminate the sampler after each sampling event in accordance with SOP FO 3, General Equipment Decontamination, then store the parts of the sampler in a plastic tube for later use

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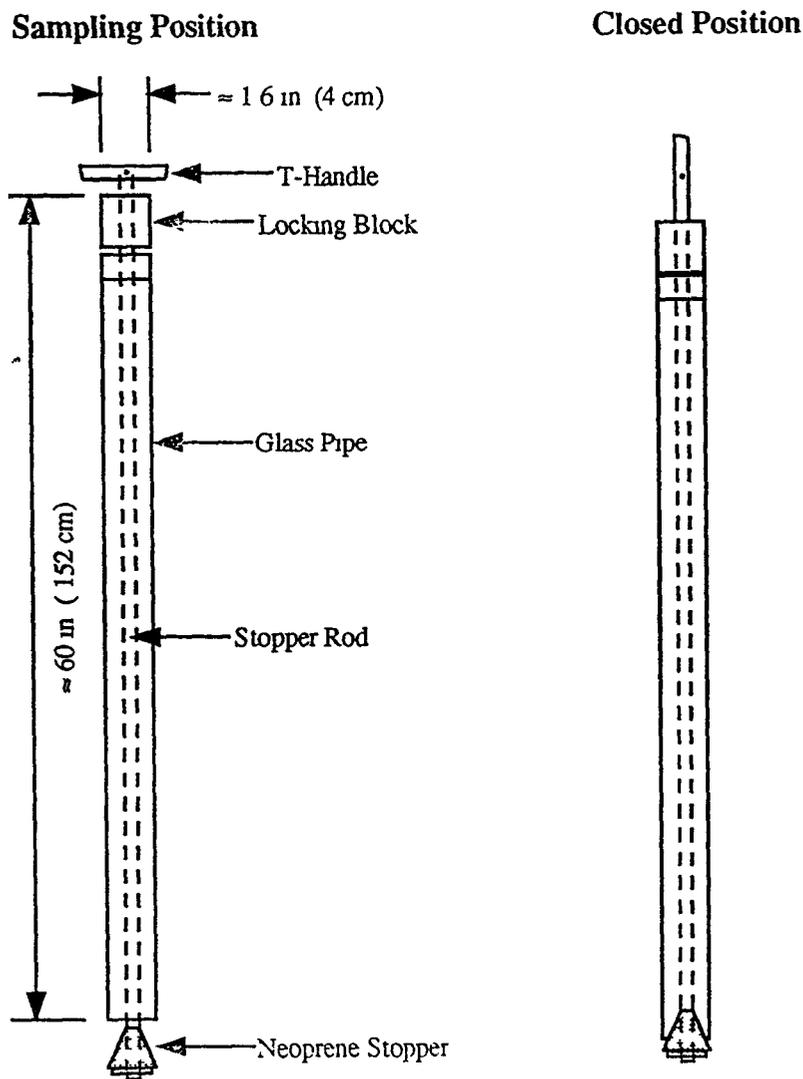
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FIGURE FO 20-1 Sludge Sampler



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5.2.4.3 Bottom-Filling Bailer

Liquid samples are collected using a bottom-filling bailer approximately 92 cm (3 ft) in length and 5 cm (2 inch) I D. The procedure for sampling liquids from tanks is as follows

- Decontaminate equipment prior to use in accordance with SOP FO 3, General Equipment Decontamination
- Place exterior ladder against the tank being sampled at an upwind location and ratchet strap down in accordance with manufacturer's guidelines
- Crack open top sampling port just enough to insert probe and monitor headspace for volatiles with an OVD in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs). Take caution not to absorb water in OVD outlet. If readings are above background, contact the Health and Safety Officer (HSO), and remove the lid and allow the tank to vent for 5 minutes
- Insert bailer into tank and collect sample from the bottom the tank for radiological parameters and from the middle portion of the tank for all other parameters
- Remove bailer slowly and pour water to fill respective sample or composite containers. Containerize, seal, and label samples in accordance with SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples
- After sampling is complete, replace lid on tank and transfer samples and bailer to the pad and decontaminate in accordance with SOP FO 3, General Equipment Decontamination

5.2.5 Sampling Sludges and Solids From Environmental Containers

Solid samples will be taken from the entire vertical extent as possible of the container contents. Sludges can sometimes be handled as liquids and be sampled using glass tubing or a sludge sampler. If sludge is encountered beneath a liquid in a container, the sludge will be sampled using glass tubing, a sludge sampler, or a scoop attached to a length of metal rod. A small sample of an

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unknown sludge is obtained by either pressing a section of glass tubing or sludge sampler into the material to remove a small core of material, or by removing a small sample with a scoop attached to a rod. The sample collected will be carefully removed using a spatula, and the procedure will be repeated until the desired sample volume is obtained.

If the sludge contains coarse material, glass tubing or a sludge sampler may not be practical. Three devices may be used to obtain a solid sample that contains coarse material: (1) a scoop or trowel, (2) sampling trier, or a (3) soil auger.

5.2.5.1 Scoop or Trowel

If the mouth of the container permits, samples may be obtained using a disposable polyethylene or stainless-steel scoop or trowel. This is a simple method of collecting soil samples, but it is limited to sampling at shallow depths. Therefore, scoops or trowels are to be used to collect samples from containers that are less than ¼ full. The procedure for sampling solids with a scoop or trowel will be as follows:

- Decontaminate equipment prior to sampling, in accordance with SOP FO 3 General Equipment Decontamination
- Monitor container for VOCs and radiological activity in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs) and SOP FO 16, Field Radiological Measurements
- Collect the desired quantity of soil and transfer to a stainless-steel bowl on plastic sheeting in accordance with Section 5.3 of this SOP
- Screen the sample for VOCs in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)

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- Provided the soil is not wet, screen the sample for radiological activity in accordance with SOP FO 16, Field Radiological Measurements. If the soil is wet, the Ludlum 12-1A will not produce useful data.
- Repeat the sampling near the same depth at a minimum of two other points to obtain a representative sample of the container contents (Section 5.3).
- Composite samples from one container in accordance with Section 5.3 of this SOP, Sample Compositing Procedures.
- Containerize and label samples in accordance with SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples.
- Decontaminate the sampler after each sampling event in accordance with SOP FO 3, General Equipment Decontamination.

5.2.5.2 Sampling Trier

The sampling trier is used to collect relatively undisturbed solid samples. A sampling trier is a long stainless-steel tube with a slot along its length. The tip and edges of the tube slot are sharpened to allow the trier to cut a core of sample material when it is rotated. Sampling triers are approximately 61 cm to 100 cm (24 inches to 40 inches) long and 1.27 cm to 2.54 cm (1/2 inch to 1 inch) in diameter. With an extension, they can be used to obtain soil samples up to a depth of approximately 122 cm (48 inches). The procedure for sampling solids with a sampling trier will be as follows:

- Decontaminate equipment prior to use, in accordance with SOP FO 3 General Equipment Decontamination.
- Monitor container prior to sampling for VOC's and radiological activity in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs), and SOP FO 16, Field Radiological Measurements.

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- Insert the decontaminated sampling trier into the container at a 0° to 45° angle from horizontal to minimize sample spillage. Keep a minimum 30 cm (1 foot) of tubing above the top of the container.
- Rotate the sampling trier once or twice to cut a core of sample material.
- Verify that the sampling trier slot is facing upward and slowly withdraw the trier from the container. The container may have to be tilted slightly to allow the trier to be withdrawn without losing part of the sample.
- Transfer the sample from the trier to a stainless-steel bowl on plastic sheeting (Section 5.3) using a spatula and/or brush if needed.
- Field screen the sample for VOCs in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs).
- Provided the soil is not wet, screen the sample for radiological activity in accordance with SOP FO 16, Field Radiological Measurements. If the soil is wet, the Ludlum 12-1A will not provide useful data.
- Repeat the sampling near the same depth at a minimum of two other points to obtain a representative composite sample of the container contents.
- Composite the samples from one container in accordance with Section 5.3 of this SOP, Sample Compositing Procedures.
- Containerize and label samples in accordance with SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples.
- Decontaminate the sampler after each sampling event in accordance with SOP FO 3, General Equipment Decontamination.

5.2.5.3 Soil Auger

A soil auger is a hard metal shaft with helical blades. When a soil auger is rotated clockwise, it cuts the soil and moves the loose soil upward. The auger length can be as long as 2 meters (80 inches). The auger is especially useful in collecting samples at depths greater than 8 cm (3 inches). This

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type of sampler does not produce an undisturbed sample In addition, a relatively large hole or opening is required to use an auger in an drum The procedure for sampling solids with a soil auger is as follows

- Decontaminate equipment prior to sampling in accordance with SOP FO 3, General Equipment Decontamination
- Monitor container for VOC's and radiological activity prior to sampling in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs), and SOP FO 16, Field Radiological Measurements
- Through the middle of an aluminum pie pan, bore a hole large enough to allow the auger blades to pass through The pan will be used to catch the sample produced by the auger
- Place the pan at the selected sampling point
- Auger through the pan hole until the bottom of the container is reached (Do not hit the bottom of the container with the auger)
- Back off the auger and scrape the excess sample from the auger into the pan
- Use a scoop to transfer the sample aliquot to a stainless-steel bowl placed on plastic sheeting (Section 5.3)
- Field screen the sample for VOCs in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)
- Provided soil is not wet, screen the sample for radiological activity in accordance with SOP FO 16, Field Radiological Measurements If soil is wet, then the Ludlum 12-1A will not provide useful data
- Repeat the sampling at the same depth at a minimum of two other points to obtain a representative composite sample of the container contents
- Composite the samples in accordance with Section 5.3 of this SOP, Sample Compositing Procedures

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- Containerize and label samples in accordance with SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples
- Decontaminate the sampler after each sampling event in accordance with SOP FO 3, General Equipment Decontamination

5.2.6 Sampling Sludges and Solids From a Sump

Solid samples will be collected from the entire area of the sump located in a decontamination facility. For sampling, solids from the sedimentation tanks and cyclone separators are combined with the sediments already in the sump. The procedures used to sample these solids are as follows:

- Decontaminate sludge sampler prior to sampling in accordance with SOP FO 3, General Equipment Decontamination
- Remove sump grates
- Monitor sump for VOC's with an OVD in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)
- "Homogenize" or mix mechanically with a skid loader fitted with a sump bucket, the sludge in sump
- Visually divide sump into 8 equal parts
- Monitor sump for VOC's with an OVD in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)
- Sample each part of the sump with the sludge sampler and composite in a stainless-steel bowl, according to Section 5.3 of this SOP
- Containerize and label samples in accordance with SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples
- Fill and batch 55-gallon drums fitted with inner plastic liners and bags according to date filled

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- Decontaminate sampling equipment in accordance with SOP FO 3, General Equipment Decontamination, and store for next sampling event

5.3 SAMPLE COMPOSITING PROCEDURES

Sample compositing in this SOP will address compositing from a maximum of four drums or other containers with similar contents from the same sampling site

When sampling from drums or other containers, a minimum of three subsamples from each container will be obtained and composited according to the procedures outlined below. The three samples will be taken at three different points that are approximately an equal distance apart. The three subsamples from one container will be composited into one sample.

5.3.1 Compositing Solids

Individual solid samples will be placed in a stainless-steel bowl on a plastic sheet (8 feet x 8 feet minimum size). These samples will be screened for VOC's and radiological activity in accordance with SOP FO 15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs), and SOP FO 16, Field Radiological Measurements. If there is a positive reading for VOCs, the section where the positive reading occurred will be immediately removed and sampled. The positive section(s) will be separately containerized, sealed, and labeled in accordance with SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples. After the samples have been screened for radiation and VOCs, they will be combined in a stainless-steel bowl or pan.

Compositing will be done by stirring the soil with a stainless-steel scoop or spoon in an appropriately sized stainless-steel bowl or pan. The soil will be scraped from the sides and bottom, then rolled to the center, and mixed. The sample will then be quartered. Each quarter of the sample will then be mixed individually. Each quarter will then be rolled to the center of the mixing

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bowl or pan and the entire sample mixed together. This procedure will be repeated as necessary to provide a homogeneous sample before being placed in the sample container(s). At a minimum, the sample will have a uniform color, and all of the clumps will be broken up. After the remainder of the sample has been composited according to the procedures outlined above, the sample will be transferred to an appropriate sample container using a scoop. The sample container(s) will be sealed, labeled, and packaged in accordance with SOP FO 13, Containerizing, Preserving, Handling and Shipping of Soil and Water Samples. Any remaining sample portions will be placed back in the original containers from which they were collected.

5.3.2 Compositing Liquids

Individual liquid samples will be placed into appropriately sized sample container for compositing in accordance with SOP FO 10, Receiving, Labeling, and Handling Environmental Material Containers. The liquids will then be mixed thoroughly with a long-handled stainless-steel spoon or scoop to obtain a homogeneous sample.

After compositing is complete, the liquids will be placed in individual sample containers, sealed, labeled, and packaged in accordance with SOP FO 13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples. Any residual sample portions will be placed back in the containers from which they were collected. If collecting for VOCs, a discrete sample should be obtained and transferred to 40 ml vials before compositing the liquids.

6.0 DOCUMENTATION

A permanent record of each sampling event will be kept by documenting all information required by this SOP on the Container Sampling Form (Form FO 20A). Other pertinent observations and data will be recorded with black indelible permanent ink in a bound weatherproof field logbook with

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consecutively numbered pages. The logbook entry will contain a detailed written description of the drum condition and step-by-step narrative of the opening and sampling procedures.

6.1 PHOTOGRAPHING CONTAINERS

Depending on project-specific requirements and site security regulations, photographic records can be made of drums from which samples are collected. All photographing procedures will conform to RFP security controls. Each container will be photographed with a 35 mm camera. The camera will have to be cleared and left on site until the sampling is completed. In addition, all of the film must be processed by RFP. An identification tag will appear in each photograph. The identification tag will include:

- Project number
- Sampling date
- Sampling site location
- Container identification
- Contractor

CONTAINER SAMPLING FORM

Project Name _____ Sample Team Leader _____
 RFP CONTRACT NO _____ Sample Team Member _____
 Sampling Date _____ Sample Team Member _____
 Sample Number _____ Photograph(s) Taken (Y/N) _____
 Sampling Site Location _____

Container Type and Size _____
 Container Identification _____
 Container Condition _____
 Container Contents _____
(Solids or Liquids) and Description

Collection Method _____
 Number of Containers Sampled _____ Number of Samples Taken _____
 Composite (Y/N) _____ Total Sample Composite Volume _____
 Composite Description _____

ENVIRONMENTAL MONITORING RESULTS

Organic Vapors _____	_____	_____
<small>Value</small>	<small>Units</small>	<small>Instrument Used</small>
Radioisotopes _____	_____	_____
<small>Value</small>	<small>Units</small>	<small>Instrument Used</small>

Comments _____

Completed By _____
Print Name Date Signature
 Contractor _____

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

DOCUMENT NUMBER Procedure No 5-21000-OPS-FO 12 Rev 2

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Title Field Radiological Measurements	Date May 11, 1993	DCN Number 5-21000-OPS-FO 12 REV 2 93
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Expires Upon Incorporation Procedure Revision Required YES NO

Scope Limitation None

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
(1)	17 of 21	Section 6 5 3 1st Para	<p>Replace the first paragraph with the following</p> <p>Environmental liquids will be emptied into the sedimentation tanks before being pumped into holding tanks. When a holding tank becomes full, the DSC will collect water samples from the tank using a batton-filling bailer in accordance with FO 20 Sampling of Liquids and Solids from Environmental Material Containers. Water samples will be analyzed by an EG&G approved laboratory for the target compound list (TCL) volatiles. The sampler will be decontaminated as described in SOP FO 3, General Equipment Decontamination, before and after each sample collection event. All samples will be marked to reflect the holding tank they were drawn from. After sampling, the tank will be sealed to prevent the addition of more water after sampling has occurred.</p>
(2)	19 of 21	Section 6 5 4	<p>Replace " using the General Sampling Procedure for collecting sediment material (see SOP GW 6 Sediment Sampling) " with " in accordance with FO 20 Sampling of Liquids and Solids from Environmental Material Containers "</p>

Justification (Reason for change - Provide numbers to reference corresponding items above)

- (1) Tank sampling protocol is now in FO 20 Sampling of Liquids and Solids from Environmental Material Containers
- (2) Sump sampling is now in FO 20 Sampling of Liquids and Solids from Environmental Material Containers

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
	QAPM	X			User		
	EOM						

Approval of Responsible Manager	Date	Is Posting Required? <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, by what date?	Date Posted
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