Sample Packaging and Shipping

Tank Farm Plant Operating Procedure

Sampling

USQ # GCX-2

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<th>CHANGE HISTORY (≤ LAST 5 REV-MODS)</th>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure establishes packaging and shipping requirements for samples along with guidelines to ensure that samples shipped for analysis will be transported in a manner that protects the sample integrity.

1.2 Scope

This procedure applies to shipping samples collected for the Tank Farm Project and Waste Treatment Plant.

2.0 INFORMATION

2.1 Terms and Definitions

- Hazardous Materials - Hazardous material means a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation law (49 U.S.C. 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes, and divisions in 49 CFR part 173 of subchapter C.

- Hazardous non-radioactive samples - Materials that contain hazardous materials as defined by 49 CFR 173.2 and do not contain radioactive materials as defined by the US Department of Transportation (DOT) as listed in 49 CFR 173.403.

- Radioactive samples - Materials containing radioactive isotopes that are over the DOT limits per 49 CFR 173.403.

- Destination laboratory - A designated laboratory that will receive the samples for analysis.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

**WARNING** - Opening and/or handling pre-preserved sample containers without wearing proper chemical gloves may cause injury to personnel.

3.1.1 Job-specific protective equipment requirements should be addressed during the pre-job brief and be in accordance with TFC-ESHQ-S_IS-C-02.

3.1.2 Contact IH when work is performed in a Vapor Control Zone (VCZ).

3.1.3 If sampling activities occur inside a farm and vehicles or heavy equipment is utilized, sampling personnel shall be in constant contact with the vehicle/heavy equipment operator and the vehicle/heavy equipment operator shall meet the required training requirements for operation on their equipment.

3.1.4 When working in low light conditions, adequate lighting may be supplied from temporary lighting, light stands/plants, and/or flashlights.

3.2 Radiation and Contamination Control

3.2.1 When shipping radioactive materials, this procedure shall be performed under the controls of a radiological work permit screened and approved by RadCon per Radiological Risk Screening procedure TFC-ESHQ-RP_RWP-C-01 and Radiological Work Permits procedure TFC-ESHQ-RP_RWP-C-04.

3.2.2 When work is performed in, or when work will result in, a high contamination, high radiation, or an airborne radioactivity area, an approved work package must be developed which is reviewed by Radiological Control per ALARA work planning procedure TFC-ESHQ-RP_RWP-C-03.

3.2.3 When this procedure is performed in conjunction with a work package, radiological surveys performed in support of this procedure shall be documented on Radiological Survey Reports (RSR), with survey numbers recorded on the Radiological Survey Report Tracking Table (Site Form A-6006-444) associated with the work package.
4.0 PREREQUISITES

4.1 Special Tools, Equipment and Supplies

The following supplies may be needed to perform this procedure:

- Shipping containers (e.g., plastic coolers/ice chests, drums)
- Miscellaneous shipping labels (e.g., to, from, gross weight, proper shipping name, orientation arrows, packed on wet ice, special marking labels, etc.)

NOTE - (If used, vermiculite is required to be asbestos free.)
- Plastic bags, tape, absorbent, bubble wrap, packing peanuts, or other cushioning material
- Custody tape
- “Wet” ice
- “Dry” ice
- Blue ice or equivalent
- Package tie downs or bracing
- Shielding material
- Government vehicle appropriate for highway transportation
- Scale for weighing package or container
- Emergency Response Guidebook
- On-site Routine Radioactive Shipment Record (Blue Card)

4.2 Performance Documents

The following documents may be needed to perform this procedure:

- TFC-OPS-WM-C-22, Chain of Custody for Tank Farm Vadose Zone and Multi-Media Sampling
- TFC-OPS-WM-C-19, Onsite Hazardous Material Shipments
- TFC-OPS-WM-C-20, Offsite Hazardous Material Shipments
- TO-100-052, Perform Waste Generation, Segregation, Accumulation and Clean-up.
- Parts and Tools Return (PTR) Form (A-6001-535)
- Radiological Survey Report Tracking Table (A-6006-444)
4.3 Field Preparation

4.3.1 Sampling personnel or designee only, **PERFORM** Steps 4.3.2 through 4.3.4.

4.3.2 **PRIOR** to sampling, **ENSURE** the Waste Technical Service Group has been provided with the following information:
- Sample medium
- Suspected or potential sample constituents and hazards
- Approximate number of samples to be shipped per day
- Size and weight of individual sample or sample containers.

4.3.3 **OBTAIN** from the shippers and/or Waste Technical Services the type of shipping documentation (e.g., blue cards), container(s), label(s), and sticker(s), to use as required for radioactive or mixed hazardous samples.

4.3.4 **IF** a shipper is needed to support the activity, **ENSURE** a shipper is scheduled.

**WARNING**

Opening and/or handling pre-preserved sample containers without wearing proper chemical gloves may cause injury to personnel.

4.3.5 **ENSURE** chemical gloves are donned prior to opening and handling any pre-preserved sample containers.

4.3.6 **IF** sampling activities are to be performed inside a tank farm and vehicles or heavy equipment is utilized, **ENSURE** sampling personnel are in constant contact with the vehicle/heavy equipment operator during sampling activities.
5.0 PROCEDURE

5.1 Package Samples for On-Site Shipping

NOTE - Step 5.1.1 may be performed at any time and repeated.

5.1.1 HPT PERFORM the following:
- PERFORM dose rate survey of container or package on contact, at 30 cm, at 1 m.
- PERFORM removable contamination survey of the exterior of the container or package.
- PERFORM any other survey deemed necessary by shipping personnel.
- DOCUMENT data on a Radiological Survey report.
- PROVIDE RSR # to shipping personnel.

5.1.2 CONFIRM each sample container has been sealed using dated and initialed evidence tape.

5.1.3 CONFIRM information on each sample container label matches information on Chain of Custody (COC) form for each sample to be placed in the shipping container.

NOTE - For certain environmental samples, the COC of sample(s) is documented using a COC/Sample Analysis Request (SAR) form. (See TFC-OPS-WM-C-22, for a sample of the form.) Both the COC form and the COC/SAR form are chronological, legal records of possession of the sample(s). Custody of samples shall either be tracked using a COC form or a COC/SAR form. For ease of use, the term “COC form” in this procedure is applicable to both COC form and COC/SAR form.

5.1.4 ENSURE all exposed glass or other fragile sample container surfaces are adequately covered with bubble wrap.

5.1.5 PLACE sample container in plastic bag, and seal the bag.

5.1.6 IF sample is required to be double bagged, PLACE sample container in second plastic bag, and seal the bag.

5.1.7 IF packaging a liquid sample, ENSURE enough absorbent material to absorb liquid sample.
5.1 Package Samples for On-Site Shipping (Cont.)

5.1.8 ENSURE adequate cushioning material (e.g., foam peanuts, vermiculite) is placed in bottom of sample shipping container.

5.1.9 IF cooling is required, PLACE samples in shipping container and place “wet” ice or blue ice in container.

5.1.10 MARK AND LABEL shipping container.

5.1.11 CLOSE AND SECURE shipping container.

5.1.12 FILL OUT onsite routine radioactive shipment form (Blue card).

5.1.13 MAKE copies of the COC form for responsible parties.

5.1.14 TRANSPORT samples to laboratory.

5.1.15 COMPLETE the on-site routine radioactive shipment form (Blue card).

5.1.16 DELIVER samples listed on the COC form to the laboratory.

NOTE - Original COC form stays with the samples.

5.1.17 MAKE a copy of the COC form and give to the FWS.
5.2 Package Samples for Off-Site Shipping

NOTE - Step 5.2.1 may be performed at any time and repeated.

5.2.1 IF FWS determines radiological concern exist, HPT PERFORM the following:

5.2.1.1 PERFORM dose rate survey of package on contact, at 30 cm, at 1 m.

5.2.1.2 PERFORM removable contamination survey of the exterior of the package.

5.2.1.3 PERFORM any other survey deemed necessary by shipping personnel.

5.2.1.4 DOCUMENT data on a Radiological Survey Report.

5.2.1.5 PROVIDE RSR # to shipping personnel.

5.2.2 IF shipping offsite through 1163 building, NOTIFY MSA 1100 area in advance.

5.2.3 CONFIRM each sample container has been sealed using dated and initialed evidence tape.

5.2.4 CONFIRM information on each sample container label matches information on COC form for each sample to be placed in the shipping container.

5.2.5 ENSURE all exposed glass or other fragile sample container surfaces are adequately covered with bubble wrap.

5.2.6 PLACE sample container in plastic bag, and seal the bag.

5.2.7 PLACE sample container in second plastic bag, and seal the bag.

5.2.8 ENSURE adequate cushioning material (e.g., foam peanuts, vermiculite) is placed in bottom of sample shipping container.

5.2.9 IF cooling is required or samples are liquid, PLACE samples in shipping container lined with two plastic bags and place “wet” ice or blue ice in container.

5.2.10 PACK samples with enough cushioning material (e.g., foam peanuts or ice) to prevent movement within shipping container.
5.2 Package Samples for Off-Site Shipping (Cont.)

5.2.11 INDIVIDUALLY SEAL plastic liner bags of shipping container.

5.2.12 FOR off-site shipments, WEIGH shipping container.

NOTE - A certified shipper is required to ship samples off site.

5.2.13 IF shipping samples off site, ENSURE a certified shipper is used.

5.2.14 IF non-hazardous and/or non-radioactive samples are being delivered to MSA Shipping or designated laboratory via a DOE vehicle, COMPLETE Parts and Tools Return (PTR) Form (A-6001-535) as required.

5.2.15 IF samples are total activity exempt or less than DOT limits, RECORD in description box “Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 458.1”.

5.2.16 IF overnight delivery is required, RECORD “Next Day Service” and/or “Saturday Delivery” on PTR.

5.2.17 TRANSPORT shipping container to MSA Shipping in 1100 Area or designated laboratory.

5.2.18 PICK UP Air Bill and Parts and Tools Return (PTR) Form (A-6001-535).

5.2.19 ATTACH Air Bill to shipping container.

5.2.19.1 IF shipping more than one container, ENSURE proper Air Bill is attached to proper corresponding container.

5.2.20 COMPLETE COC form.

5.2.21 MAKE copy of the COC form for designated Project Lead personnel or designee. Original COC form remains with the sample.

5.2.22 PLACE original COC form in a plastic bag AND SEAL it.

5.2.23 TAPE sealed bag with original COC form to the underside of the shipping container lid.
Sample Packaging and Shipping

5.2 Package Samples for Off-Site Shipping (Cont.)

NOTE - Containers with positive mechanical latches do not require additional tape around the lid.

5.2.24 SECURE AND SEAL the shipping container lid, AND

PLACE evidence tape on the container as follows:
- IF container does not have positive mechanical latches, WRAP tape around lid to seal
- WRAP tape around lid and container from top to bottom going front to back and left to right
- IF shipping container has latches, PASS tape over them to keep closed
- IF shipping container has drain port/plug, TAPE shut to keep closed
- PLACE evidence tape at each end of container spanning lid and container.

5.2.25 PLACE the following stickers/labels on the top of the shipping container:
- “To” and “From” labels - filled out
- “Packed on Wet Ice” (if used for cooling samples)
- “Gross Weight”
- “Fragile - Handle with Care”
- "This End Up"
- "Up" Orientation arrow on front and back.

5.2.26 FOR all other shipments of samples, CONTACT FWS.

5.2.26.1 FWS FOLLOW WRPS Authorized Shipper instructions.
5.3 Records

5.3.1 PERFORM the following for records identified within this procedure.

5.3.1.1 RECORD the number of times the record was generated in applicable column

OR

PLACE a check mark (✓) in the N/A column.

5.3.1.2 SUBMIT the package for verification of completed records.

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<td><strong>Forms and Documents</strong></td>
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<tr>
<td>Parts and Tools Return (PTR) Form (A-6001-535)</td>
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<td>FWS/OE/Shift Manager SEND the completed records to the Central Shift Office for records retention.</td>
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<tr>
<td>Signature</td>
<td>Print (First and Last)</td>
<td>Date</td>
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<td>FWS/OE/Shift Manager</td>
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The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.