

Sampling Equipment Decontamination

FSOP 1.6 (March 8, 2011)

Ohio EPA Division of Environmental Response and Revitalization

1.0 Scope and Applicability

- 1.1 This procedure describes standard practices used by the Division of Environmental Response and Revitalization (DERR) for the decontamination of sampling equipment used at federal site assessments, state-lead site assessments, Target Brownfield Assessment (TBA) grant assessments, and Voluntary Action Program (VAP) field audits. All equipment used to collect environmental samples should be decontaminated prior to use to avoid cross-contamination of samples, sampling personnel, or other environmental media.
- 1.2 Whenever possible, disposable sampling equipment should be used rather than nondisposable sampling equipment to avoid equipment decontamination. If nondisposable sampling equipment must be used, decontamination may be performed either on site or preferably in a fixed-base facility such as the Ohio EPA Groveport Field Office. Use of a fixed-base facility is logistically easier, especially with regard to the containment and disposal of decontamination fluids.
- 1.3 Solvents and acids should not be used for equipment decontamination.
- 1.4 Equipment that cannot be effectively decontaminated using the procedures described in this FSOP must be disposed of properly in accordance with federal, state, and local requirements. Refer to FSOP 1.7, Investigation-Derived Wastes and Materials.
- 1.5 The procedures described herein are the minimum level of effort that should be expended for equipment decontamination. However, data quality objectives (DQOs) for certain sites or projects may require more detailed procedures.
- 1.6 This procedure applies to the decontamination of sampling equipment only. It does not apply to the decontamination of personnel, personal protective equipment (PPE), field monitoring instruments, or vehicles.

2.0 Definitions

Not applicable

3.0 Health and Safety Considerations

Proper PPE should be worn when performing decontamination procedures to avoid exposure to contaminated media, or decontamination fluids. PPE typically includes (but is not necessarily limited to) protective gloves, safety glasses or goggles, and protective coveralls.

4.0 Procedure Cautions

- 4.1 Equipment decontamination generates one or more of the following materials:

- Soil or sediment
- Wash and rinse water
- Materials used during the decontamination process (e.g., paper towels or plastic sheets)
- Personal protective equipment during the decontamination process (e.g., gloves or coveralls)

Generally these materials are not hazardous and may be disposed of as non-hazardous solid or liquid wastes; refer to FSOP 1.7, Investigation-Derived Wastes and Materials. However, if hazardous materials or highly elevated concentrations of hazardous substances are encountered during sampling activities, the associated decontamination wastes could be hazardous wastes. To ensure proper disposal, such decontamination wastes need to be characterized in accordance with Ohio Administrative Code (OAC) 3745-51-20 through -24 (Characteristics of Hazardous Wastes) to determine whether they are hazardous.

- 4.2 If an equipment blank is needed to evaluate the effectiveness of decontamination procedures, the field team leader should request that the blank be collected at an undisclosed time. This practice helps avoid the introduction of bias into the decontamination procedures based on anticipation of the equipment blank.

5.0 Personnel Qualifications

Ohio EPA personnel working at sites that fall under the scope of OSHA's hazardous waste operations and emergency response standard (29 CFR 1910.120) must meet the training requirements described in that standard.

6.0 Equipment and Supplies

- 6.1 Appropriate PPE
- 6.2 ASTM Type II water or distilled water (project data quality objectives (DQOs) may require the use of ASTM Type II water)
- 6.3 Detergent (nonphosphate detergent is recommended for field decontamination)
- 6.4 Clean cloths, paper towels, or disposable wipes
- 6.5 Brushes or sponges
- 6.6 Spray bottle
- 6.7 Buckets or pans
- 6.8 Plastic containers with resealable lids (to contain decontamination fluids in the field)
- 6.9 Plastic sheets (to cover the ground during field decontamination procedures)
- 6.10 Aluminum foil (to wrap decontaminated equipment)

7.0 Procedures

- 7.1 Sampling equipment decontamination depends on the nature of the investigation and anticipated field conditions, and equipment may be decontaminated in the field or at a fixed-base facility (e.g., Ohio EPA's Groveport Field Office).

Decisions regarding the scope and location of equipment decontamination should be made during the preparation of the project work plan and in consultation with the Site Field Investigation Unit (SIFU).

7.2 Fixed-base facility decontamination procedures:

- 7.2.1 Remove excess soil or sediment contamination from the equipment while in the field.
- 7.2.2 Disassemble the equipment if necessary for proper decontamination.
- 7.2.3 Wash the equipment with tap water and detergent.
- 7.2.4 Rinse the equipment with tap water.
- 7.2.5 Rinse the equipment a second time with ASTM Type II or distilled water.
- 7.2.6 Allow the equipment to air dry or dry it with a clean cloth or paper towel.
- 7.2.7 If the equipment is not to be used immediately, wrap it in aluminum foil or another protective covering.

7.3 Field decontamination procedures:

- 7.3.1 Set up the decontamination area away from potential sources of dust, vapors, or other contaminants. Decontamination equipment and supplies should be placed on a clean sheet of plastic to prevent direct contact with the ground or other surfaces that may contain contaminants.
- 7.3.2 Remove excess soil or sediment contamination from the equipment.
- 7.3.3 Disassemble the equipment if necessary for proper decontamination.
- 7.3.4 Wash the equipment with ASTM Type II or distilled water and detergent.
- 7.3.5 Rinse the equipment a second time with ASTM Type II or distilled water.
- 7.3.6 Dry the equipment with a clean cloth or paper towel.
- 7.3.7 If the equipment is not to be used immediately, wrap it in aluminum foil or another protective covering.

7.4 All materials generated during equipment decontamination must be containerized for proper disposal, regardless of whether or not the decontaminated equipment was used to sample media known to contain hazardous substances or hazardous wastes. Materials generated during decontamination include, but are not limited to the following:

- Soil or sediment
- Wash and rinse water
- Materials used during the decontamination process (e.g., paper towels or plastic sheets)
- Personal protective equipment during the decontamination process (e.g., gloves or coveralls)

7.5 Investigation derived waste should be disposed in accordance with FSOP 1.7, Investigation Derived Wastes.

8.0 Data and Records Management

Refer to FSOP 1.3, Field Decontamination.

9.0 Quality Assurance and Quality Control

Depending on project DQOs, an equipment blank may be required to evaluate the effectiveness of decontamination procedures.

10.0 Attachments

None

11.0 References

FSOP 1.3, Field Decontamination

FSOP 1.7, Investigation Derived Wastes

Ohio Administrative Code 3745-51-20 through -24