



Department of the Air Force
HQ AEDC (AFMC)
Arnold AFB, TN 37389

Safety, Health, and Environmental Standard

Title: CONTAMINATED EQUIPMENT
Standard No.: C2
Effective Date: 05/01/2015
Releasability: There are no releasability restrictions on this publication.

The provisions and requirements of this standard are mandatory for use by all AEDC personnel engaged in work tasks necessary to fulfill the AEDC mission. Please contact your safety, industrial health and/or environmental representative for clarification or questions regarding this standard.

Approved:

Contractor/ATA Director
Safety, Health and Environmental

Air Force Functional Chief

Record of Review/Revision

(Current revisions are highlighted in yellow and marked with a vertical line in the right margin.)

Date/POC	Description
05/01/15 Ben Partin	Added new subsection 4.1.8 to address the need to attach the chemical analysis for PCBs to the GC-1785 for equipment found to contain less than the regulatory limit before taking the equipment to Logistics Supply.
03/13/13	Added NFAC supplement; no other change.
05/01/12 Ben Partin	Replaced Annex, GC-1785, with latest revision. Updated Air Force and ATA organizational names. Added definition for “hot work.” Made minor changes as result of annual review.
05/31/10 Ben Partin	Performed annual review with no revisions.
05/31/09 Ben Partin	Reference to SHE Standard B10 was revised to B3; SHE Standards B10 and B3 were combined into one standard, retaining the B3 number.
05/31/08 Ben Partin	Performed annual review with minor edits.
05/31/07 Ben Partin	Performed annual review with minor edits and organizational updates.
05/31/06 Ben Partin	Revised to add definition for “cleaned equipment.” Updated to address cleaning and inspecting contaminated equipment prior to disposition. Assigned the owner of contaminated equipment ownership of equipment for as long as it is on base. Added new turn-in form for Logistics Support (GC-1785) to ensure the equipment has been cleaned—see Annex. Made minor changes as result of annual review.
02/28/05 Ben Partin	Minor revisions as result of annual review and changes to <i>SHE Standard B10, Safety Signs, Markers, and Tags</i> , referenced in this standard.
02/13/04 Ben Partin	Updated format in accordance with COI 91-5. Updated organizational structures to reflect new AEDC contractor effective 1 October 2003.



Safety, Health, and Environmental Standard

CONTAMINATED EQUIPMENT

1.0 INTRODUCTION/SCOPE/APPLICABILITY

This standard applies to the removal, decontamination, and disposition of contaminated equipment. Depending on the type of contamination, any activity such as decontamination, storage, salvage, demolition, transportation, or disposal involving contaminated equipment may require strict adherence to specific Occupational Health and Safety Administration (OSHA) and/or federal and state environmental regulations.

2.0 BASIC HAZARDS/HUMAN FACTORS

Depending on the type of contamination, the potential exists for both chronic and acute health hazards from poisoning through the skin, ingestion, inhalation, or injection. There could also be possible hazards associated with electrical connections, confined spaces, fires, or explosions. For the different safety and health concerns, refer to the appropriate AEDC Safety, Health, and Environmental (SHE) Safety standard.

Some components in the wastes generated during decontamination may constitute a toxic or hazardous waste when above certain concentrations, and therefore, have to be managed and disposed of accordingly. For specific wastes such as asbestos, lead-based paint, and polychlorinated biphenyls (PCBs) or hazardous wastes, refer to the appropriate AEDC SHE Standard. For other wastes that are non-hazardous, refer to AEDC SHE Standard *E18, Managing Wastes Containing Chemical or Petroleum Products*.

3.0 DEFINITIONS

Cleaned Equipment – Any equipment that has no free standing liquids or sludges on the inside, no concentration of vapors that produce explosive or otherwise dangerous atmospheres, or no surface contamination for any contaminant that is above an established limit. For example, the PCB clean-up level for human contact on surfaces is less than 10 micrograms per 100 centimeters square.

Contaminated Equipment—Any equipment that contains, has been exposed to, or causes exposure to materials having toxic, corrosive, explosive, flammable, radioactive, bacteriological, or other harmful properties. For radioactive contamination, see AEDC SHE Standard *D11, Ionizing Radiation*.

Hot Work – Any activity that could heat, vaporize or decompose a contaminate on a metal surface which, in turn, could expose a worker to harmful smoke, vapors or gases. Examples of such an activity include welding, torch cutting and silver soldering.

Owner—As used in this SHE standard, the “owner” is intended to refer to the ATA custodian of the equipment in question. The Air Force is the owner of all real property at AEDC covered by the SHE standard.

4.0 REQUIREMENTS/RESPONSIBILITIES

4.1 Owner of Contaminated Equipment shall:

- 4.1.1 Prepare work request for the removal of contaminated equipment from systems.

- 4.1.1.1 Clearly identify on the work request the extent of equipment removal, expected contaminants, associated hazards, and safety precautions, and include any relevant drawings, sketches, and written instructions.
- 4.1.1.2 If supplemental work requests are issued, include the same safety information as in the original.
- 4.1.1.3 Request Environmental Quality to sample for PCBs, lead-based paint (to determine if a hazardous waste) or hazardous waste (i.e., chemicals, solvents, acids, contaminated oils) and provide environmental guidance as necessary prior to any decontamination efforts.
- 4.1.1.4 Request Safety and Health Section to sample for asbestos or lead-based paint (for health concerns) and provide safety and occupational health guidance as necessary including guidance for explosive, flammable, radioactive, or bacteriological contamination.
- 4.1.2 Before removing any contaminated assembly or component from a system, tag each contaminated assembly or component with Form GC-82, *Safety Information Tag*, in accordance with AEDC SHE Standard B3, *Control of Hazardous Areas Using Safety Signs, Tags, and Barricades*—see Annex D. Enter the names of the contaminants on the tag and have the supervisor in charge of removal sign the tag. [Equipment and system owners must consider inherent features that may contain contamination such as reservoirs for automatic oiling systems, lubricants in gear boxes, dielectrics in power transmission equipment, insulating materials, etc.]
- 4.1.3 Decontaminate the equipment or have an assisting organization decontaminate using the appropriate safety standard for the contaminated material or specific instructions from Environmental Quality or the Safety and Health Section. The owner of the contaminated equipment is responsible for providing the funding for all decontamination and related sampling/analysis efforts.
- 4.1.4 Determine if equipment is cleaned and ready for appropriate disposition.
- 4.1.5 Remove the original Form GC-82 and retag with another GC-82. Enter that the equipment is “*cleaned equipment*” per the definition given in this standard. Require the supervisor in charge of decontamination to sign the tag. Take appropriate measures to protect the integrity of the tag from the elements if used outdoors, e.g., laminate the tag. Contaminants removed should be identified on the GC-82 tag. However, if some contamination has not been removed from the equipment, this must be noted on the tag and the words “cleaned equipment” cannot be used.
- 4.1.6 Arrange for the cleaned equipment to be removed for appropriate disposition. The owner of the contaminated equipment will maintain ownership for as long as the equipment remains on base. If cleaned equipment is to be turned-in to Logistics Support for storage or excessing, a GC-1785, *Special Material Turn-in Certification* (see Annex), must be completed and submitted to Logistics Support with the equipment. Ensure that Industrial Hygiene and Environmental Quality check the equipment, and if they agree that the contamination has been removed, sign the form certifying that it has been decontaminated. This form is to ensure that the equipment has been cleaned.
- NOTE:** Should any equipment in storage later be found to require cleaning prior to having hot work conducted on it, the owner of the equipment will be contacted and required to have the equipment cleaned.
- 4.1.7 If contaminated equipment is to be disposed of as hazardous or toxic waste (e.g., asbestos or PCBs), it shall be done in accordance with AEDC SHE Standards *E16, PCBs*; *E7, Asbestos*; or *E18, Managing Wastes Containing Chemical or Petroleum Products*.
- 4.1.8 When the oil in any equipment is sampled for PCBs and the analysis shows that the level is below the regulatory limit of 50 ppm, a copy of the analysis should accompany the completed GC-1785 when the equipment is taken to Logistics Support.

4.1.9 If contaminated equipment is to be shipped outside AEDC and is not hazardous or toxic waste, complete Form DD-1149, *Requisition and Invoice/Shipping Document*, indicating on the form how the equipment is considered harmful. Leave the tags on the equipment for the information of the consignee (see SHE Standard B3).

4.2 Environmental Quality shall:

4.2.1 Sample equipment contamination as necessary and provide guidance on PCBs, lead-based paint, or hazardous waste-contaminated equipment and interpretation of the analytical data.

4.2.2 Provide environmental guidance on proper decontamination and/or disposal of equipment considered to be toxic or hazardous waste.

4.2.3 Remove all containerized toxic and hazardous wastes generated from decontamination efforts for proper storage prior to disposal.

4.2.4 As necessary, make final decision if PCB or hazardous waste-contaminated equipment is cleaned and ready for appropriate disposition. If clean, sign Form GC-1785 certifying that the contamination has been removed.

4.3 Safety and Health Section shall:

4.3.1 Sample equipment contamination as necessary and provide guidance on lead-based paint, explosive, flammable, radioactive, bacteriological or asbestos-contaminated equipment and interpretation of the analytical data.

4.3.2 Provide guidance on the use of the GC-82 tag.

4.3.3 Provide guidance on the proper personal protective equipment (PPE) to wear during any decontamination activities. Provide personal air monitoring as needed.

4.3.4 Provide guidance for all the specific safety hazards and health concerns that may be associated with decontamination activities involving any given piece of equipment.

4.3.5 Provide guidance on proper decontamination or disposal of explosive, radioactive, bacteriological, or asbestos wastes.

4.3.6 As necessary, make final decision if lead-based paint, asbestos, radioactive, bacteriological, flammable, or explosive-contaminated equipment is cleaned and ready for appropriate disposition. If clean, sign Form GC-1785 certifying that the contamination has been removed.

4.4 Test Assets and Support Department shall:

Provide decontamination support as necessary.

4.5 Logistics and Civil Engineering Branch shall:

4.5.1 Inspect the cleaned equipment turned in for storage or excessing to see that it is properly tagged.

4.5.2 Inspect equipment, especially items that have been in storage for an extended time, to determine if it has been cleaned prior to conducting any hot work. As necessary, ask for assistance from the appropriate organization (i.e., owner of the equipment, Environmental Quality, Safety and Health Section, or the Fire Department) to help make this decision.

4.5.3 Make the appropriate disposition of the equipment (storage, salvage, or destruction). Ensure that no contaminated equipment is placed into storage or salvage.

4.5.4 For material covered by special state, federal, or Air Force regulations, ensure that all applicable shipping regulations are followed.

5.0 TRAINING REQUIREMENTS

N/A

6.0 INSPECTIONS / AUDITS

N/A

7.0 REFERENCES

AEDC SHE Standards

B3, *Control of Hazardous Areas Using Safety Signs, Tags, and Barricades*

D11, *Ionizing Radiation*

E7, *Asbestos*

E16, *Polychlorinated Biphenyls (PCBs)*

E18, *Managing Wastes Containing Chemical or Petroleum Products*

E19, *Lead and Heavy Metals*

8.0 ANNEXES

Form GC-1785, *Special Material Turn-in Certification*

9.0 SUPPLEMENT

A321-0801-XSP C2 Contaminated Equipment

Form GC-1785, Special Material Turn-In Certification

(Sample form; obtain current copy before use.)

SPECIAL MATERIAL TURN-IN CERTIFICATION			
INTENDED TURN-IN PROCESS <input type="checkbox"/> STORAGE <input type="checkbox"/> SERVICEABLE EXCESS <input type="checkbox"/> UNSERVICEABLE EXCESS			
CONDITION CODE <input type="checkbox"/> A-1 - NEW MATERIAL <input type="checkbox"/> B-4 - USED - IN GOOD CONDITION <input type="checkbox"/> F-7 REPAIRABLE (Repair cost <or = 15% item value) <input type="checkbox"/> H-X - UNSERVICEABLE (of scrap value only)			
TYPE OF MATERIAL <input type="checkbox"/> POTENTIALLY HAZMAT <input type="checkbox"/> POTENTIAL HAZARDOUS WASTE <input type="checkbox"/> ASBESTOS <input type="checkbox"/> CONTAINS CONTAMINANTS OR PREVIOUSLY CONTAINED OIL HYDRAULICS OR FUEL <input type="checkbox"/> PCBs SPECIFY CONTENT _____ <input type="checkbox"/> LEAD PAINT EXT. VOLUME _____			
STOCK CODE	PROPERTY CODE	MANUFACTURER	PART NUMBER
ITEM DESCRIPTION			
STORAGE DOCUMENT NUMBER (if identified for storage) <input type="checkbox"/> TEST MATERIAL NO. _____ <input type="checkbox"/> COURTESY STORAGE NO. _____ <input type="checkbox"/> STAGE MATERIAL NO. _____ <input type="checkbox"/> FACILITY RECONFIGURATION ITEM NO. _____			
MATERIAL OWNER/POINT OF CONTACT			
NAME	PHONE	ORGANIZATION	BADGE NUMBER
ACTION TAKEN BY MATERIAL OWNER/POC			
<input type="checkbox"/> BASED ON MY BELIEF AND KNOWLEDGE, I CERTIFY THAT THE EQUIPMENT BEING TURNED IN HAS BEEN APPROPRIATELY DRAINED AND/OR CLEANED.			
SIGNATURE	DATE	BADGE NO.	PHONE EXTENSION
DISPOSITION AUTHORIZATION/INSTRUCTIONS IAW SAFETY STD C2			
	INDUSTRIAL HYGIENE / SAFETY	ENVIRONMENTAL	
DATE			
NAME			
BADGE NO.			
APPROVED (No action required)			
SPECIAL INSTRUCTIONS			
CLEARED FOR PROCESSING			
CONDITION CODES A-1 = NEW MATERIAL B-4 = USED, IN GOOD CONDITION F-7 REPAIRABLE (Repair costs < or = 15% item value) H-X = UNSERVICEABLE (Of scrap value only)		ITEM COUNT _____ OF _____	
GC-17485, 20110103			

A321-0801-XSP C2 Contaminated Equipment Supplement

This supplement has been approved for the NFAC Site.

Review: This supplement will be reviewed and updated using the same cycle as AEDC Safety, Health, and Environmental (SHE) Standard C2 Contaminated Equipment.

References: AEDC SHE Standard C2 Contaminated Equipment
Ames Procedural Requirement APR 8800.3

Scope:

This supplement applies to the removal, decontamination, and disposition of contaminated equipment. Depending on the type of contamination, any activity such as decontamination, storage, salvage, demolition, transportation, or disposal involving contaminated equipment may require strict adherence to specific Occupational Health and Safety Administration (OSHA) and/or federal and state environmental regulations.

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Some components in the wastes generated during decontamination may constitute a toxic or hazardous waste when above certain concentrations, and therefore, have to be managed and disposed of accordingly. For specific wastes such as asbestos, lead-based paint, and polychlorinated biphenyls (PCBs) or hazardous wastes, refer to the appropriate AEDC SHE Standard. For other wastes that are non-hazardous, refer to NFAC supplement A321-0801-E18, *Managing Wastes Containing Chemical or Petroleum Products*.

This supplement applies to all personnel conducting operations, maintenance, testing and support at NFAC, NASA AMES.

NFAC Worksite Application:

Definitions:

Cleaned Equipment – Any equipment that has no free standing liquids or sludge's on the inside, no concentration of vapors that produce explosive or otherwise dangerous atmospheres, or no surface contamination for any contaminant that is above an established limit. For example, the PCB clean-up level for human contact on surfaces is less than 10 micrograms per 100 centimeters square.

Contaminated Equipment – Any equipment that contains, has been exposed to, or causes exposure to materials having toxic, corrosive, explosive, flammable, radioactive, bacteriological, or other harmful properties.

Hot Work – Any activity that could heat, vaporize or decompose a contaminate on a metal surface which, in turn, could expose a worker to harmful smoke, vapors, or gases. Examples of such an activity include welding, torch cutting, and silver soldering.

Contaminated equipment and hot work activities will treat equipment and/or components using the following Ames Procedural Requirement APR 8800.3:

- Chapter 3 Hazardous Materials Management
- Chapter 4 Hazardous Waste Management

A321-0801-XSP C2 Contaminated Equipment Supplement

Requirements/Responsibilities:

- I. NFAC Site Management shall follow this supplement.
- II. NFAC Supervisors and Test Directors shall
 1. Follow this supplement.
 2. Ensure all personnel follow this supplement.
 - a. Waste is disposed of through the Hazardous Waste Stream.
 - b. Utilize proper PPE when working with hazardous material.
 - c. Equipment/components are placed in the properly labeled containers.
- III. NFAC Safety Engineer/Management Designee shall
 1. Assist staff on disposal of hazardous material issues.
 2. Assist in arranging for sampling of equipment/components when required.
 3. Arrange with Code Q Environmental for manifest signature for items that do not go through the Ames Hazardous Waste Stream.
 4. Conduct inspections of the hazard waste processes and storage.
- IV. NFAC Staff shall
 1. Follow this supplement.
 2. Review MSDS for hazards and proper PPE.
 3. Waste is disposed of through the Hazardous Waste Stream.
 4. Utilize proper PPE when working with hazardous material.
 5. Equipment/components are placed in the properly labeled c.