



Personal Protection and Handling of Portable Toilets

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INTRODUCTION

This document serves to notify Forest Service personnel of the considerations and potential occupational exposure concerns with portable toilet systems for use at fire fighting spike camps. The document outlines:

- ◆ the hazards of dealing with potentially infectious materials,
- ◆ the recommended personal protective clothing,
- ◆ the protocol for dealing with spills, and
- ◆ various manufacturers of personal protective clothing and portable toilets which are appropriate for helicopter transport and backcountry use.



Figure 1. Portable toilets located at a fire camp.

BACKGROUND

Remote fire fighting camps (spike camps) are often established for field personnel involved with the fire fighting detail. The need to provide sound human waste management techniques is imperative to safeguard the health of field personnel as well as for the protection of the local environment.¹ Field personnel are often misinformed about the hazards, precautions and

available protective wear when handling the portable toilets.

The contents of a portable toilet is recognized as "domestic septage" as outlined in 40 CFR 503.9 (f) general definitions. With proper handling, the contents of the toilets can be safely handled by the field personnel and conveniently released to local wastewater authorities with little or no risk of infectious exposure.



The contents of the toilet vaults can be deposited into municipal wastewater treatment facilities. A septic pump truck can remove the contents of the toilet vaults. Federal, state, local and private wastewater facilities can process the sewage. Prior contact with wastewater facility personnel would be required.

HAZARDS

The Forest Service Bloodborne Pathogens Program protects Forest Service employees from occupational exposure to bloodborne pathogens. These pathogens include hepatitis B virus (HBV) and Human Immunodeficiency Virus (HIV). While these pathogens do not normally exist in human urine and feces, bloodborne pathogens may exist in situations where it is difficult or impossible to differentiate between body fluids.² Therefore, field personnel involved with the operation and maintenance of backcountry portable toilet facilities should be familiar with the guidelines of the Program.

Under these guidelines, all Forest Service employees in job classifications where the tasks and procedures of the job place them at risk of occupational exposure to



these materials shall be enrolled in the Forest Service Bloodborne Pathogens Program.³ The following guidelines from the Forest Service Handbook pertain to Forest Service personnel who meet these criteria.

Employees who believe they are occupationally exposed because of their job classification may request a job hazard analysis.

Employees who are occupationally exposed shall complete bloodborne pathogens training covering such topics as an explanation of bloodborne pathogens, modes of transmission, exposure control plans and the handling and disposal of personal protective clothing.

Employees must be provided with the necessary precautions, engineering and work practice controls to eliminate or minimize exposure to the greatest extent as reasonably possible.

Employees shall be provided with personal protective clothing and equipment at no expense. This is specialized clothing and equipment used by the employee to protect against the hazard. General work clothes not intended to function as protection against a hazard are not considered to be personal

protective clothing. This clothing and equipment shall be readily available at the work site and disposed of at no cost to the employee.

All employees shall observe Universal Precautions when potentially infectious materials are present. Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, certain body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens. These Universal Precautions includes sterile gloves, masks, and other personal protective clothing and equipment that is deemed necessary for the task.

Employees must be provided with handwashing facilities or alternative handwashing means (appropriate antiseptic hand cleanser and towels) that are readily available.

Employees must wash hands immediately or as soon as feasible after removing protective equipment.

Employees must refrain from eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses in areas where they may be exposed to the potentially infectious materials.



*Figure 2.
Wash with soap and water after
removing personal protective
equipment and before eating.*

Employees shall perform all tasks and procedures involving potentially infectious materials in such a manner as to minimize splashing and spraying.

Employees shall have access to a written exposure control plan.

Employees shall notify their immediate supervisor of any exposure or contact of any potentially infectious materials that results from the performance of their duties.

Hepatitis B vaccination series and post-exposure evaluation are available to all occasionally exposed employees. All laboratory tests shall be conducted at no cost to the employee.

PERSONAL PROTECTIVE EQUIPMENT (PE)

Personal protective clothing and equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through or to reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used. The personal protective clothing and equipment should be made of plastic and be disposable to facilitate ease of handling and disposal. This equipment includes, but is not limited to the following items:

Gloves

If an employee is expected to have hand contact with potentially infectious materials or contaminated surfaces, the employee must wear gloves. Disposable (single use) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised. Disposable gloves shall not be washed or decontaminated for re-use. If the employee is allergic to standard gloves, the employer must provide hypoallergenic gloves or similar alternatives. If the task has the potential to damage the gloves, either a second pair of disposable gloves should be worn or a more durable pair of utility gloves may be worn over the existing pair of disposable gloves. Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded when their ability to function as a barrier is compromised.



*Figure 3. Wearing disposable gloves provides protection,
and is recommended even under a leather glove.*

Gowns, Aprons and Other Protective Body Clothing

Gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.

Masks, Eye Protection and Face Shields

Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

Footwear and Caps

Disposable footwear and caps may be necessary if extensive exposure is expected.

Employees must remove personal protective clothing and equipment before leaving the work area or when the PE becomes contaminated. If a garment is penetrated, workers must remove it immediately or as soon as feasible. Used protective clothing and equipment must be placed in designated containers for storage, decontamination, or disposal.

Containers used to store the used personal protective clothing and equipment must be closable and suitable to contain the contents and prevent leakage of fluids. The containers must be labeled or color-coded to ensure that employees are aware of the potential hazards. Such containers must be closed before removal to prevent the contents from spilling. If the outside of a container becomes contaminated, it must be placed within a second suitable container. Regulated waste must be disposed of in accordance with applicable state and local laws.

Contaminated laundry should be bagged or placed in containers at the location where it is used, but not sorted or rinsed there. Laundry must be transported within the establishment or to outside laundries in labeled or color-coded bags. If the laundry facility uses Universal Precautions for handling all soiled laundry, then alternate labeling or color-coding that can be recognized by the employees may be used. If laundry is wet and it might soak through the laundry bags, then workers must use bags that prevent leakage to transport it.

SPILLS

If an employee's skin or mucous membranes come into contact with the potentially infectious materials, the employee is to wash with soap and water and/or flush eyes with water as soon as feasible.

When provision of handwashing facilities is not feasible, the employer shall provide either an appropriate antiseptic hand cleaner in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleaners or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

Domestic septage is not considered a hazardous material because it is not toxic and not explosive. A spill of any size is a violation of the Clean Water Act as a discharge without a permit. The spill must be reported to the State EPA office and to the local public health authority.⁴ Water pollution response would then be directed by State environmental enforcement authorities.

For ground spills, immediate action should be taken to contain the spill. If possible, the spill should be contained using a commercially available universal sorbent material such as shredded polypropylene microfibers which pick up aqueous and

non-aqueous liquids. These absorbing devices, known as spill dikes, pillows, pads and blankets are available in a wide variety of shapes and sizes. If these products are not available, then a berm should be constructed to contain the spill using dirt or other readily available material.

MANUFACTURERS

The following is a list of manufacturers of portable toilets and PE which could be transported as a sling load under a helicopter.

Superior Fiberglass, Inc.
4098 South 300 West Street
Salt Lake City, Utah 84107
801-266-6921

Manufactures the Port-a-Head Model 103, a portable unit which is self contained with a one piece cylinder-shaped structure with a door and a 30 gallon removable tank. Both are made of fiberglass reinforced polyester. The structure is fitted with lifting eye bolts for helicopter transport.

Cost
Structure: \$620.00
Holding Tank: \$220.00
Structure Dimensions
Height: 85.25''
Width: 38.25''
Depth: 44'' (seat level)
Holding Tank Dimensions
Height: 16''
Width: 30''

PolyJohn Enterprises Corp.
2500 Graspar Avenue
Whiting, Indiana 46394-2175
800-292-1305

PolyJohn manufactures a removable tank to be used in PolyJohn® portable restrooms. The tank is a one-piece 31 gallon capacity polyethylene container. The unit includes a lid which must be secured with straps during transport. The tank features a toilet seat and lid and handles on all sides of the tank that function as locking devices for transport. A shelter would have to be fabricated around the tank for privacy.

Cost
\$82.00 ea.
Empty weight
20 lbs.
Dimensions
Height: 20''
Width: 19.5''
Depth: 22''

S.O.S. Survival Products

15705 Strathern Street,
Unit 11
Van Nuys, CA 91406
800-479-7998
818-909-0131
Manufactures a privacy shelter made of heavy duty blue polyethylene with a full zipper entrance.

Cost
\$28.50
Dimensions
Height: 6'
Width: 3'
Depth: 3'

The following manufacturer sells assorted PE and spill containment items:

Lab Safety Supply, Inc.
P.O. Box 1368
Jonesville, WI 53547
800-356-0783

Spill Dike
Diameter: 5''
Length: 20'
Total Absorbing Capacity:
10 gal.
Cost: \$52.10 ea.

Bulk Quantity Spill Dikes
Quantity: 20 5' x 12' dikes
Absorbing capacity:
121.1 gal.
Cost: \$495.60

Disposable Latex Gloves
Cost: \$8.80 (Powdered, box of 100, sizes S,M,L)
Cost: \$13.45
(Powder-Free, box of 100, sizes S,M,L)

Tyvek Gown:
Cost: \$4.30

Tyvec Apron:
Cost: \$23.20 (Package of 25)

Tyvek Pants:
Cost: \$2.20

Tyvek Shirt:
Cost: \$2.55

Tyvek FC Boot Covers:
Cost: \$30.65
(Package of 25 pair)

Tyvek QC Coverall with elastic cuffs
Cost: \$6.60 (Men's S,M,L,XL)

Tyvec Caps

Cost: \$37.40 (Package of 100)

Laboratory Face Shields:

Cost: \$14.00

Infectious Waste and Linen Bags

Cost: \$88.15 (Package of 250, 30 gal.)

Body Fluids Barrier Kit that includes two pair latex gloves, one combination face and eye shield, two towelettes and one biohazard disposal bag with tie is available from:

General Services Administration (GSA)

501 W. Felix Street WHS 4DK 1
Ft. Worth, TX 76115
(817) 334-5215

Item No. 6515-01-376-7247

Cost: \$18.33

Additional PE supplies can be purchased from:

Burney Products Corp.

314-T Scholes St.
Brooklyn, NY 11206
800-989-1492
718-821-9200

Pro-Tect Medical Products, Inc.

4206 Park Glen Rd.
St. Louis Park, MN 55416
800-797-7715

¹ FSH 6709.11 Health & Safety Code Handbook

² 29 CFR Part 1910.1030 (1) Occupational Exposure to Bloodborne Pathogens, Final Rule, 12/6/91.

³ Interim Directive 6709.12-96-1 of the Forest Service Handbook.

⁴ Bastian, Bob. Office of Wastewater Management, Federal EPA, personal communication, 6/6/96.

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