

## 1. PURPOSE

To establish minimum performance requirements for employees who respond to spills involving raw sewage. To ensure that proper clean-up procedures and personal protective procedures are followed throughout the response effort, and to protect employees, the public, and the environment from the potentially harmful effects of chemical and/or pathogenic exposure associated with sewage spills and remediation efforts.

## 2. SCOPE

All California State University, Sacramento employees.

## 3. RESPONSIBILITY

**Environmental Health and Safety** – EH&S shall be responsible for providing the following required response training: 1) Hazardous Materials Communication and its application to sewage Spill Clean-up; 2) Confined Space Entry. EH&S shall be responsible for providing public agency notifications as required by Environmental Health and Safety Codes and/or Regulations.

**Facilities Management** – Facilities personnel are primary responders to sewage spills. Responsibilities include proper cleanup and disposal of spilled sewage and issuance of permits for spill clean-up efforts in confined spaces.

**Supervisors** – Facilities Management supervisors shall be responsible for ensuring that response personnel are trained prior to engaging in sewage spill clean-up efforts and for ensuring that sewage spill clean-up efforts are done in accordance with this Procedure.

## 4. HEALTH HAZARDS OF SEWAGE

### A. Pathogens and Disease

Numerous disease-causing agents are potentially present in raw sewage. These organisms include amoebas, protozoa, bacteria, viruses, mold spores, etc. In the U.S., most illnesses associated with raw sewage exposure produce mild to severe flu-like or cold-like symptoms. However, more serious illnesses, such as Hepatitis A, can be contracted through human contact (mouth, eyes, nose, ears) with raw sewage. With respect to HIV (AIDS) and HBV (Hepatitis B), the Division of Occupational Safety and Health (DOSH) have stated, in their Frequently Asked Questions for Bloodborne Pathogen Standard, the following:

*There is no evidence to suggest that sewage plant or wastewater workers are at increased risk for hepatitis B infection. HBV and HIV may be present in wastewater, but only in a non-viable state and in very dilute concentrations, which would not be expected to pose a risk to wastewater workers or sewage plant workers.*

Since microorganisms can cause disease by entering the body through the mouth, eyes, ears, nose, or through cuts and abrasions to the skin, care should be taken, and appropriate personal protective equipment (PPE) utilized, when the potential for direct contact with raw sewage is possible. [Click here for information on pathogens of Wastewater \(sewage\)](#)

## B. Good Hygiene

Do not touch fecal matter or raw sewage with bare hands. If you need to remove it, wear waterproof gloves and use an instrument such as tongs or a spade for picking it up.

Do not smoke, eat, drink, apply lip treatments, or chew gum while cleaning up fecal matter or raw sewage.

Reduce exposure by keeping those who are not properly protected from coming in contact with the material.

Clean everything, including clothes, tools, and footwear, that came in contact with the fecal matter or raw sewage. Use **A-33 Dry Detergent Disinfectant** to wash down contaminated surfaces and "clean-up" equipment.

Wash your hands thoroughly even if you were wearing gloves the whole time. Use plenty of soap, scrub for at least 30 seconds, and rinse thoroughly with warm water. The California Department of Health Services states: "frequent, routine hand washing is the **most important safeguard** in preventing infection by agents present in sewage."

## C. Exposure and First Aid

If you believe that raw sewage has come into direct contact with your eyes, mouth, ears, nose, or a cut, abrasion, puncture, etc. You should immediately, and thoroughly, wash the exposed area with copious amounts of soap and water. Seek the care of a CSUS authorized Occupational Physician, and upon his/her advice, begin the Hepatitis A Vaccination series, and/or antibiotics, and/or other appropriate medical treatment, as directed.

## **5. PERSONAL PROTECTIVE EQUIPMENT (PPE) & CLEAN-UP EQUIPMENT**

As appropriate, use the following equipment when cleaning up fecal matter or raw sewage spills.

- Neoprene gloves
- Face Shield
- Impervious Coveralls
- Buckets
- Wet/Dry Vacuum
- Shovels
- Mops
- Tongs
- Hudson Sprayer(s)
- Fans/blowers (as necessary)
- Confined Space Entry Equipment

See Section D. 2. Good Hygiene, for appropriate personal hygiene (cleaning-up) practices.

## 6. CLEAN-UP PROCEDURE

1. Secure area against unauthorized entry.
2. Investigate the potential for electrical hazards and deenergize electrical circuits as necessary.
3. Review Section D. 2. Good Hygiene, of this document before beginning any clean-up activities.
4. Acquire all appropriate Personal Protective Equipment (PPE) as specified in Section E. of this document.
5. Prepare **A-33 Dry Detergent Disinfectant**, in bucket(s) and/or Hudson Sprayer(s), in accordance with the manufacturer's directions.
6. Put on appropriate PPE
7. Remove all furniture, loose rugs, and so on from the area.
8. Saturated wall-to-wall carpeting (and the pad) usually cannot be adequately cleaned. They should be removed, wrapped in plastic, and taken to a transfer station or sanitary landfill. If you decide to keep the carpeting, hire a licensed carpet cleaning company to steam clean and disinfect the carpet.
9. All hard surfaces, such as linoleum, hardwood floors, concrete, wood moldings, wood, and metal furniture, etc. should be thoroughly cleaned with hot water and **A-33 Dry Detergent Disinfectant**. Let the surface air-dry.
10. Upholstered furniture, loose rugs, drapery, and so on should be professionally cleaned. Notify the cleaner of the problem.
11. Remove and replace plaster, plasterboard, and lath that have been saturated and are soft to the touch. If the surface has only been wetted, clean as you would a hard surface, but do not saturate the plaster.
12. Clean sinks, rinse basins, and/or other plumbing fixtures that have had sewage back-up, with **A-33 Dry Detergent Disinfectant**.
13. Collect and dispose of raw sewage and/or fecal matter into an active sewer system.
14. If internal to a building, increase air circulation to reduce odors and mold growth. Open all windows and doors. The use of fans and heaters should also be used to speed the drying process.
15. Following complete clean-up of the contaminated area, wash your hands thoroughly and launder clothes separately. Disinfect "clean-up" mops, brooms, shovels, tongs, brushes, etc. with **A-33 Dry Detergent Disinfectant**.

If you have any questions or concerns regarding the clean-up and disposal of fecal mater and/or raw sewage, please contact the Office of Environmental Health and Safety at extension 85252

### Response Procedure (1/31/07)

1. Isolate the area from the general public using barrier tape.
2. Protect storm drain inlets by using drain mats
3. Determine source/cause of sewer backup
4. Determine exposure level of the area around the sewer backup and to the campus storm water system.

5. Isolate campus storm water, if necessary, from exiting campus system
6. Develop a mitigation plan for removing any potential contamination in the general area of the sewer backup and for decontaminating the campus storm water system.
7. Implement mitigation plan
8. Report sewer spill overflow (sso) to State Water Resources Board (When campus becomes active in the CIWQS reporting system)

This is the general process but each incident may have additional steps required depending on the scope/breadth. I have also not included any steps regarding internal communications/notifications or any local agency requirements (i.e. public works) that you may have. Even though this is primarily a facilities issue in terms of response, there are still regulatory issues that make it important for EHS to be involved in the process.

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