INTRODUCTION

The purpose of this guidance is to establish minimum safety practices to prevent hazardous exposure to personnel and ensure compliance with regulatory requirements.

GENERAL WORK PROCEDURES

Eastern Washington University (EWU) plumbing networks require maintenance, alternatives and repair. These networks may contain refrigerants acid solutions, chlorine, raw sewage, chemically treated heating ventilation and air conditioning (HVAC) discharge and water.

Safe Work Practice

- Identify contents and direction and volume of flow.
- Measures should be taken immediately to isolate a repair area from flow in both directions and repairs should be initiated.
- Identify type of pipe and insulation prior to cutting or grinding.
- Precaution should be taken to prevent accidental releases of gasses or liquids from the system.
- Identify the known, or determine the potential hazard associated with drain line contents. (Caustic, hazardous, etc.) If this cannot be determined then assume the worse until proven otherwise. Contact Environmental Health and Safety (EH&S) for assistance. Where possible flush the system before disassembling.
- Training in hazardous recognition and handling. Training in proper use of personnel protection.
- Proper personal protection must be utilized at all times where applicable. This will include gloves, eye protection, mouth protection (splash guard) and ear protection. (Note: persons that have holes in their ear drums are susceptible to liquids penetrating the inner ear. Some liquids (chemicals) can damage the inner ear leading to permanent hearing loss).
- All sludge collected from the under sink traps located in the Science Building, and select areas of Cheney Hall, Tawanka, Art, Computing and Engineering Building and all of the Surbeck shops and yards including the chemical storage building should be handled as hazardous waste until testing or other information indicates otherwise. Contact EH&S for assistance and disposal.
- Accidental releases should be contained and recovered to the greatest extent possible by qualified staff or contractor, and disposed of or reclaimed in an appropriate manner. Notify Chad Johnson (6455) and Joe Swinyard (2046) of any accidental releases. If more than a gallon of raw chemical or oil is released into the sewer system contact the City of Cheney Waste Water Department. Document actions taken. The Facility Engineer will contact the Department of Ecology as necessary.
• Verify integrity of repairs prior to putting the system back in service.
• Appropriate spill containment should be readily available at the job site and employees trained for its use.

ACID NEUTRALIZATION TANKS

Acid neutralization tanks have been commonly installed at the discharge site from many college and university laboratory buildings. In many cases, they are required by local municipalities, and in other cases, considered good practice for basic acid neutralization. Within the confines of these tanks is limestone, which can reduce the pH of small quantities of acids.

Safe Work Practice

• Acid traps/lime pits should not be included in lab drain systems unless required by local municipalities.
• If they are installed, they must be inspected periodically under a regular preventive maintenance program.
• A third-party inspection/evaluation of each tank should be conducted every 5-7 years.
• All laboratory staff must be reminded how to properly dispose of their chemicals and not to rely on these tanks as primary treatment systems.
• No sludge or fish waste should be discarded to these tanks.
• Science Building acid neutralization system, at this time, is a pass through system only. The limestone tanks shall undergo maintenance and inspection once a year. Maintenance shall include washing and agitation of the rocks in place. If for any reason pH levels indicate elevated alkali or acid levels then the electronic diversion system will need to be activated.

PATHOGENS AND PARASITES

Many pathogens and parasites are common in septic systems. Blood borne pathogens can be contracted from human waste through improper protective measures. It must be remembered that blood is commonly discharged into septic systems and sewer drain lines. The most common blood borne pathogens are HIV/AIDS, Hepatitis B Virus, and Hepatitis C Virus; however other pathogens may be present. It would be uncommon to contract HIV/Aids from septic discharge; however the Hepatitis Viruses are a real threat.

Parasites are common in many septic and sewer systems. The most common parasites that can be encountered include protozoans, roundworms, pinworms, and tapeworms. Reproductive cysts easily lodge under fingernails, along cuticles, in small cuts, and spread through ingestion. Dust derived from sewage can also spread the cysts, which can live for several days in dust and on clothing. Roundworm cysts have been found to live for decades in all types of adverse environmental conditions and are resistant to numerous chemical disinfectants. With the number of foreign exchange students on campus other uncommon parasites may be encountered in sewage. One such
parasite is a trematode parasite responsible for Schistosomiasis. In this case the trematode parasite is able to penetrate the skin to infect the host. Hookworms are another type of parasite that is able to penetrate the skin to infect the host.

**Safe Work Practice**

- Training in personal protection and pathogen protection.
- Personal protection should include thick gloves, eye protection, mouth protection (splash guard).

**PROGRAM CONTACT LIST**

- **Jim Butler**: Plumbing Shop Supervisor. 359-6561 Cell 720-9870
- **Bob Heston**: Plumbing Shop Lead. 359-6561, Cell 979-8653
- **Joe Swinyard**: Director of Facilities Maintenance, 359-2046
- **Chad Johnson**: Environmental Health and Safety, 359-6455 or Cell 290-3510
- **John Henry**: Facilities Engineer, 359-4205
- **Rozell Plant Operations**, 359-6460
- **City of Cheney Waste Water** 498-9293 or after hours  
  Don Mangis 879-1993  
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