Colorado Department of Public Health and Environment

Guidance on Cleaning Up After Sanitary Sewer Overflows

Sanitary sewer overflows can be caused by too much precipitation infiltrating leaky sewer pipes, inadequate system capacity to handle newly-developed residential or commercial areas, blocked or broken pipes, or improperly designed and installed sewer systems.

Sewage backups not only present unpleasant odor problems, they may cause property damage and present unhealthy living conditions. Untreated sewage contains disease-causing organisms such as bacteria, viruses and parasites. Contact with contaminated water can cause skin infections and rashes, and if ingested accidentally via improperly cleaned hands or food preparation surfaces, these contaminants can cause nausea, abdominal pain, vomiting and diarrhea. Respiratory infections and allergic reactions may also result from inhaling associated airborne microorganisms.

The drying out process can take several weeks in an enclosed area such as a basement or crawl space, and growth of microorganisms will continue as long as the humidity remains high. If the damaged area is not cleaned and dried out properly, a musty odor, signifying the continued growth of microorganisms, can remain long after the sewage overflow.

Contaminated materials outside the home:

If there is a broken sewer line outside the home or in a crawl space under the home, the first step is to put on protective clothing such as waterproof boots, gloves, eye protection and clothes that are either water resistant or disposable. A dust mask should be worn when cleaning to avoid breathing airborne microorganisms.

Plastic ground liners, surface contamination, and heavily contaminated soil should be removed from the impacted area if possible. The remaining contaminated soil should be treated in place with a liberal application of slaked lime to reduce odor and enhance degradation of the organic matter. If the contaminated area is in the open, it should either be covered with clean dirt or temporarily fenced off to prevent accidental contact with the lime and any remaining contamination.

Excavated soils may be remediated onsite by treatment with slaked lime and tilled frequently to provide oxygen to the naturally occurring microbes in the soil that degrade the organic material. If onsite treatment is not feasible, or if it can't be accomplished without creating a nuisance condition, contaminated soils and other materials removed from the impacted area may be disposed at any landfill willing to accept them.

Contaminated materials in the home:

When sewers back up into homes, the damaged area must be thoroughly cleaned and disinfected to reduce the risk of disease. Again, the first step is to put on protective clothing as noted above. The humidity in the damaged area should be lowered by opening up the house and removing standing wastewater with a mop, wet vac, or squeegee. Interior closets and cabinet doors should be opened to allow circulation. Fans, dehumidifiers, and window air conditioners can be used to circulate the air, but whole house air conditioners or furnace blowers should be used only if the air ducts were not impacted by standing wastewater. Desiccants (materials that absorb moisture) can be placed in enclosed areas where air can't move through.

The contents of the damaged area should then be sorted to separate salvageable furnishings from unusable debris. Materials that were exposed to the wastewater and cannot be thoroughly steam cleaned or disinfected should be disposed. All potentially contaminated food items, cosmetics, stuffed animals, and baby toys should be discarded. Contaminated mattresses, pillows, foam rubber items, upholstered couches and chairs, books, and most paper products should generally be discarded because they soak up contamination. If the furnishings are of particular value, a cost estimate from a professional cleaner can help determine if they are worth saving.

Soiled clothing and small throw rugs should be thoroughly washed in warm or hot water, with bleach if possible. Larger rugs and those with foam backing may have to be discarded, as may wall to wall carpeting. After getting wet, wall to wall carpeting usually will not return to its former size and has to be thrown away. If only a portion of the carpeting is damaged, it may be adequately cleaned by a professional carpet cleaner. The foam padding will likely have to be replaced, however.

Discarded items should be sealed in heavy plastic garbage bags and disposed. The local trash collection company should be contacted about removing furniture and bulky furnishings, or these items can be taken directly to a landfill by the homeowner.

Minimal Damage

If there is minimal damage to the home and the overflow can be cleaned up promptly, then the damaged area may simply need to be cleaned and disinfected. This involves thoroughly washing and disinfecting the walls, floors, closets, and other washable contents of the damaged area. In most cases, common household cleaning products and disinfectants will do the job if used correctly. Disinfectants and sanitizers often contain toxic substances, so be sure to read and follow label instructions carefully. Be careful about mixing household cleaners and disinfectants together, since some can produce harmful vapors. For example, mixing bleach and ammonia forms the toxic gases chloramine and ammonium chloride. Fresh air should always be provided when using any cleaning compounds by opening windows and doors, using fans to circulate air both during and after the use of disinfecting, cleaning, and sanitizing products.

A mixture of one-quarter cup chlorine bleach in 1 gallon of water is an effective and readily available cleaning solution. This solution should be kept in contact with the item to be cleaned for at least one minute. After an item is cleaned in such a manner, it should be rinsed well, and gone over again with mild soap and water and thoroughly rinsed again. Since most fabrics can't be cleaned with bleach without fading, they may instead be cleaned with a quaternary ammonia product such as Lysol.

Extensive Damage

If damage was extensive or the overflow could not be cleaned up promptly, removal and replacement of damaged wallboard and wall insulation should be considered to avoid indoor air quality problems later. Wallboard acts like a sponge, drawing moisture up above water level. It becomes very fragile if it stays wet for long and will fall apart when bumped. Even if the area is dried out, contaminants may have gotten up behind the drywall and dried inside. Microorganisms can penetrate deep into soaked porous materials such as wood and drywall and continue to damage these materials long after the overflow event is over. Even after everything has dried out, these microorganisms can later be released into the air and trigger allergic reactions when inhaled.

Wooden wall studs and sills probably won't need to be replaced if they are thoroughly cleaned, disinfected and allowed to dry properly. Since the studs and sills will be covered by new wallboard and painted, they will be removed from direct human contact.

If the walls are paneled, the bottom of each panel should be carefully pried away from the wall. A block or something similar should be used to hold the paneling bottom away from the wall sill so that the area between wall studs can drain and dry out. The paneling can be nailed back into shape after it and the studs dry out. The paneling may have to be completely removed in order to take out any wet insulation behind it, however.

Wastewater won't damage concrete like it will wood or wallboard. Concrete walls or floors should be washed thoroughly and allowed to dry out.

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