Indiana State Department of Health

Environmental Public Health Division
100 N. Senate Ave., N855
Indianapolis, IN 46204

Homeowner Guidance on Cleaning Up After Residential Sanitary Sewer Backups

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 washable 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* ***garden 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 soil* or *temporarily fenced off* to **prevent accidental contact** with the lime and any remaining contamination.
- After a day or two, *mix the lime in with a rake* and use a sprinkler or *hose to water the lime* and any remaining residues into the soil. *Let the area dry* in the sun if possible *before allowing access*.

Excavated soils may be remediated onsite by treatment with garden lime and should be turned over frequently to provide oxygen to the naturally occurring microbes in the soil that degrade the organic material. If onsite treatment is not possible, or if it can't be

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accomplished without creating a nuisance condition, contaminated soils and other materials removed from the impacted area may be disposed of at any sanitary 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. Materials that were exposed to the wastewater that cannot be thoroughly steam cleaned or disinfected should be disposed of. Discarded items should be sealed in heavy plastic garbage bags before disposal.

- The first step is to *put on protective clothing* as noted previously. 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.
- All potentially contaminated food items, cosmetics, stuffed animals, and baby toys should be discarded.
- Do not use whole house air conditioners or furnace blowers if the air ducts were impacted by standing wastewater.
- The contents of the damaged area should be sorted to separate salvageable furnishings from unusable debris.
- Contaminated *mattresses*, *pillows*, foam rubber items, *upholstered couches and chairs*, *books*, and most paper products *should generally be discarded* because they soak up contamination and are *difficult to disinfect*. If the furnishings are of particular value, a cost estimate from a professional cleaner can help determine if they are worth saving.
- Your 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.
- Soiled clothing and small throw rugs should be thoroughly washed in warm or hot water, with bleach if possible.
- Hire a professional cleaning company to steam clean and disinfect salvageable furnishings.
- Larger rugs and those with foam backing may have to be discarded, as may wall to wall carpeting.
- 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.
- After getting wet, wall to wall carpeting usually will not return to its former size and has to be thrown away.
- Moisture absorbing products can be purchased in home repair/lumber stores and should be placed in enclosed areas where air can't move through. This may include small closets, confined spaces, and difficult to access areas.

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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.
- Fresh air should always be provided by opening windows and doors and using fans to circulate air both during and after the use of disinfecting, cleaning, and sanitizing products.
- Disinfectants and sanitizers often contain toxic substances, so be sure to read and follow all 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.
- *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

Microorganisms can penetrate deep into soaked porous materials such as wood, insulation and drywall and continue to damage these materials long after the overflow event is over. Even after everything has dried out, microorganisms can later be released into the air and trigger allergic reactions when inhaled.

- **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*.
- *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 may have to be completely removed in order to take out any wet insulation or extensive contamination behind it. Once disinfected and dried out, the paneling can often be nailed back into place.
- Wastewater won't damage concrete like it will wood or wallboard, but it will still soak in to some extent.
- Concrete walls and floors should be washed thoroughly and allowed to dry out.

For more information, please contact:
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This document is intended to provide basic guidance on the appropriate cleanup of household sewage backups only.

Reports of sanitary sewer overflow events should be reported to the Indiana Department of Environmental Management by the property owner using State Form 48373 - Bypass/Overflow Incident Report and file the form at wwreports@idem.IN.gov

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