



Tropical Storm Irene flood sediment and soil clean-up information

Sept. 9, 2011

This guidance applies to private and public yards, grounds and properties. This includes school grounds, playing fields and playgrounds.

In general, sediment and soil deposited by flood waters *may* be contaminated if there was disruption of septic systems, sewage disposal systems, water treatment systems, agricultural animal waste or fertilizers, dislodged industrial chemicals including agricultural chemicals, or spilled fuel oil, gasoline or diesel fuel. *Contamination is not likely unless there was a local source disrupted in the flooding.*

Contamination can be identified by sight or smell. If you see or smell evidence of oil, chemical or other contamination, keep people and pets away from the area until the contamination has been removed.

The most likely health threats are injuries due to physical hazards and gastrointestinal illness from bacterial contamination.

Sunlight, soil activity and rain help destroy any bacteria that may be in flood sediment, so it is usually safe to use areas with deposited sediment a couple of weeks after flood water has receded. Several sun and rain cycles destroy and remove bacteria.

Clean-up Recommendations

Wear an N-95 respirator (also called an N-95 mask) during all clean-up activities when inhalable particles are generated, such as mold, sand, silt, dry dirt or mud, dust or any other particles not otherwise specified. If inhaled, particles alone can cause upper airway and lung irritation and can make asthma and other lung diseases worsen.

Most hardware stores sell N-95 respirators. They are also available at no cost from Health Department district offices as part of the flood response.

To remove non-contaminated mud, dry dirt, or dust from indoor areas (home, building):

- Wear an N-95 respirator.
- Spray dry dirt or dust with water (soapy water if possible) to help prevent particles from getting in the air.
- Small amounts of mud, dry dirt or dust can be spread on the ground.
- Do not dump flood sediment in rivers, streams or other bodies of water.

To control non-contaminated mud, dry dirt, or dust from outdoor areas (yard, field)¹:

- Plant new grass.
- Water to flush organisms out of the upper soil layers.
- Spray dry dirt or dust with water (soapy water if possible) to help prevent particles from getting in the air.
- Consider depositing new soil on top of affected area or covering the affected ground with asphalt, brick, stone, cement, or other solid paving material.

To remove sediment that you suspect is contaminated from indoor or outdoor areas:

- Call an environmental clean-up company:
http://www.anr.state.vt.us/dec/wastediv/spills/pubs/Cleanup_Contractors.pdf
- Or call an environmental consultant:
<http://www.anr.state.vt.us/dec/wastediv/sms/pubs/consult.lst.pdf>
- Dial 2-1-1 to report fuel oil, gasoline, or diesel spills or other chemical spills. Do not touch contaminated sediment.

- **If you must clean sediment that you suspect is contaminated** with septic, sewage, animal waste, industrial or agricultural chemicals:
 - Wear an N-95 respirator, rubber or plastic non-permeable gloves, goggles, pants and a long-sleeved shirt, and rubber-soled leather or non-permeable work boots/shoes. If clothes become soiled, remove and discard them. Remove any soiled clothes before entering clean environments to prevent contamination. Additional protective gear may be necessary for worker safety, especially in confined spaces.
 - Ventilate the area if indoors by opening windows and using fans.
 - Spray dry dirt or dust with water (soapy water if possible) to prevent particles from getting into the air.
 - Dispose of contaminated material in a properly certified facility. Contact your local solid waste official for more information, or go to:
<http://www.anr.state.vt.us/dec/wastediv/solid/swmdlist.htm>
 - Remove sand from sandboxes, and soil, mulch or wood chips around playgrounds or areas where young children are likely to play. Depending on the extent and type of contamination, consider removing contaminated sediment from fields or large outdoor areas.¹ If you need further consultation, call the Health Department at 1-800-439-8550.
 - Do not dump flood sediment in rivers, streams, or other bodies of water.
 - Hydrated lime (also known as calcium hydroxide) may be applied to help disinfect small areas of septic or animal waste or sewage. Lime is caustic, so you must follow instructions, wear rubber boots, gloves, goggles, and other protective clothing, and take steps to keep people and animals from being exposed.

- **Seek medical advice** for symptoms such as: shortness of breath, chest pain, headaches, skin rashes, dizziness, nausea, vomiting, diarrhea, fever, excitability, weakness or extreme fatigue. If the skin is broken with a puncture wound, a tetanus booster with Tdap vaccine may be needed if it has been five years or more since the last tetanus shot. **If you need immediate emergency medical services**, dial 9-1-1.

For more information, go to the Health Department's website at www.healthvermont.gov

¹ Env. Health Services Branch, NCEH, CDC. *Guidance on Microbial Contamination in Previously Flooded Outdoor Areas*; 2011. Available from:
http://www.cdc.gov/nceh/ehs/Docs/Guidance_Contamination_of_Flooded_Areas.pdf