



COLORADO

Department of Public
Health & Environment



Disaster Recovery Guide

Preserving public health and safety

A guide for local public health departments from the

Colorado Department of
Public Health and Environment

www.colorado.gov/cdphe

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Colorado Department of Public Health and Environment

Larry Wolk, MD, MPH
Executive Director and Chief Medical Officer

Karin McGowan
Deputy Director and Interim Director of the
Office of Emergency Preparedness and Response

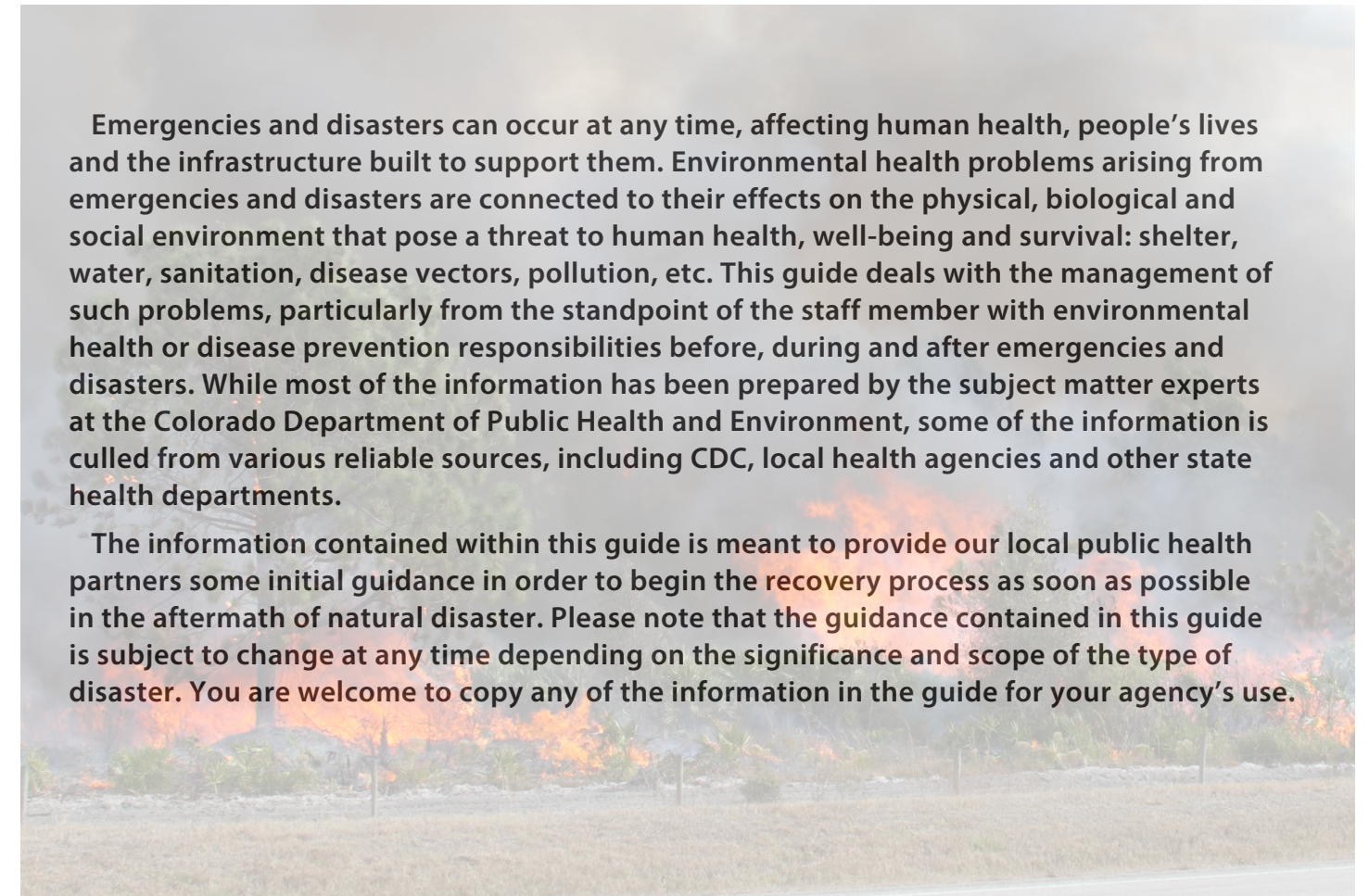
4300 Cherry Creek Drive South
Denver, CO 80220
303-692-2030

www.colorado.gov/cohealth

INTRODUCTION

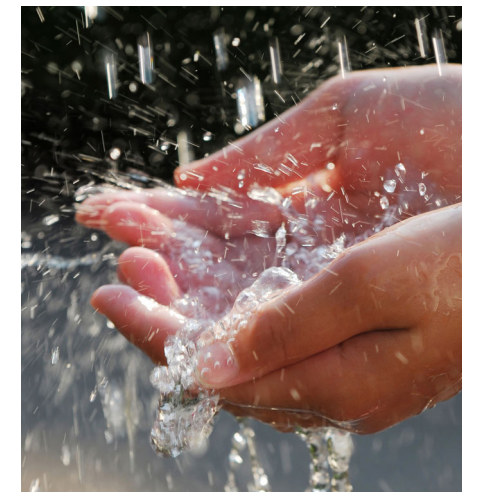
Emergencies and disasters can occur at any time, affecting human health, people’s lives and the infrastructure built to support them. Environmental health problems arising from emergencies and disasters are connected to their effects on the physical, biological and social environment that pose a threat to human health, well-being and survival: shelter, water, sanitation, disease vectors, pollution, etc. This guide deals with the management of such problems, particularly from the standpoint of the staff member with environmental health or disease prevention responsibilities before, during and after emergencies and disasters. While most of the information has been prepared by the subject matter experts at the Colorado Department of Public Health and Environment, some of the information is culled from various reliable sources, including CDC, local health agencies and other state health departments.

The information contained within this guide is meant to provide our local public health partners some initial guidance in order to begin the recovery process as soon as possible in the aftermath of natural disaster. Please note that the guidance contained in this guide is subject to change at any time depending on the significance and scope of the type of disaster. You are welcome to copy any of the information in the guide for your agency’s use.



Effective handwashing

1. Use soap and clear, warm running water.
2. Wash all surfaces:
 - Between fingers
 - Under fingernails
 - Back of hands
 - Wrists
3. Scrub hands for at least 20 seconds; use a nail brush.
4. Rinse well and dry hands with a clean paper towel.



Hand sanitizers may be useful when soap and water are not available.

FOOD SAFETY

Sanitation and hygiene are the keys to preventing foodborne illness, especially after a natural disaster.

- Basic hygiene is very important after an emergency event.
- Always wash hands with soap and clean water before eating and after toilet use, and after cleanup activities or handling items contaminated by floodwater, debris or sewage.
- Hand sanitizers can be used in addition to hand washing, but not in place of washing. Hand sanitizers may be helpful in situations where hand washing facilities are not accessible or readily available.
- If clean water is not available, use water that has been boiled or disinfected properly.
- Floodwaters may contain fecal matter from sewage systems, agricultural and industrial waste and septic tanks. If you have open cuts or sores exposed to floodwater, keep them as clean as possible by washing with soap and disinfected or boiled water. Apply antibiotic ointment to reduce the risk of infection.
- Do not allow children to play in floodwaters or to have contact with toys or household items that are contaminated by floodwaters.
- Natural disasters may disrupt sanitary systems. If floodwaters cover your septic tank and leach field, do not use flush toilets attached to the system. A break in a sewer or septic system can cause additional structural damage and expose the household to disease-causing organisms.

Food Safety Tips: loss of electrical power

Always keep meat, poultry, fish, dairy and eggs refrigerated at or below 41°F, and keep frozen food frozen.

If you lose power, keep the refrigerator and freezer doors closed as much as possible to maintain the cold temperature. Most refrigerators will keep food safely cold for about 4 hours if unopened. A full freezer will hold the temperature for approximately 48 hours if the door remains closed. For a freezer that is half full, keeping the door closed can maintain the temperature for 24 hours.

- ☐ If you need to open and close your refrigerator and power is going to be out for a prolonged period of time, use dry ice or block ice to keep your refrigerator as cold as possible. Fifty pounds of dry ice should maintain an 18-cubic-foot full freezer for two days.
- ⊗ Discard perishable food that has been held at temperatures above 41°F for more than 4 hours.
- ⊗ Discard any food that has an unusual odor, color or texture.
- ⊗ Discard food in your refrigerator and freezer that looks suspicious, such as the presence of liquid or refrozen meat juices, soft or melted and refrozen ice cream or unusual odors.
- ⊗ Never taste food to determine its safety.
- ⊗ Food unfit for human consumption also is unfit for pets.
- ⊗ **If in doubt, throw it out.**



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FOOD SAFETY

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Food Safety Tips: exposure to fire and smoke

Fire and smoke create insoluble tars, plastics and their by-products that may be suspended in the smoke for an extended period of time. All of these make food products unsalvageable.

Food exposed to fire can be compromised by four factors: heat, smoke, firefighting chemicals and power outages affecting refrigeration.

- 1. Heat:** Food in cans or jars may appear to be fine, but if they have been close to the heat of a fire, they may not be edible. Heat from a fire can activate food spoilage from bacteria. If the heat is severe, the cans or jars can split or rupture, resulting in unsafe food.
 - ⊗ Discard foods in cans or jars, as extreme heat can re-cook canned goods and adversely affect the contents.
- 2. Smoke fumes:** Toxic fumes, which may be released from burning materials, are one of the most dangerous elements of a fire. The fumes can be hazardous, and they also can permeate packaging and contaminate food.
 - ⊗ Discard all meats, oil products such as butter and produce.
 - ⊗ Discard food stored in permeable packaging with friction-type closures and food packed in cardboard, cellophane or plastic wrap.
 - ⊗ Discard raw foods stored outside the refrigerator.
 - ⊗ Discard refrigerated or frozen food if it has an off-flavor or odor when prepared. Food stored in the refrigerator or freezer can become contaminated by fumes, as the seals are not necessarily airtight.

3. Firefighting chemicals: Chemicals used to fight fires contain toxic materials that can contaminate food and cookware. While some of the chemicals may be listed as non-toxic to humans, they can be harmful if swallowed. These chemicals cannot be washed off food.

- Canned goods and cookware exposed to chemicals can be decontaminated if they have not been subjected to severe heat.
 - Wash with soap and hot water. After washing, dip in chlorine bleach for 2 minutes, in a solution as directed on the bottle's label. Rinse and let air dry.
 - ⊗ Discard all foods that have been exposed to chemicals.
 - ⊗ Food stored at room temperature, such as fruit and vegetables.
 - ⊗ Food stored in permeable containers, like cardboard and screw-topped jars and bottles.
- 4. Loss of refrigeration** (*see section opposite*)
- ⊗ Discard perishable food that has been held at temperatures above 41°F for more than 4 hours.
 - ⊗ Discard any food that has an unusual odor, color or texture.
 - ⊗ Discard food in your refrigerator and freezer that looks suspicious, such as the presence of liquid or refrozen meat juices, soft or melted and refrozen ice cream or unusual odors.
 - ⊗ Never taste food to determine its safety.
 - ⊗ Food unfit for human consumption also is unfit for pets.
 - ⊗ **If in doubt, throw it out.**



For additional information, please contact the Colorado Department of Public Health and Environment's Division of Environmental Health and Sustainability at 303-692-3645.

HOME SAFETY

Prevent Infestations

As you start cleaning up, you will likely produce a great deal of garbage and trash. Local authorities will tell you where and when collection will occur. Garbage invites insects and rodents. Rodents, in particular, enter the house looking for food because their homes and food sources are disrupted. Contact landfills directly to determine which garbage and trash they will accept. See www.cdphe.state.co.us/hm/flist.pdf for a list of Colorado landfills.

- ⊗ Store garbage in watertight, rodent/insect-proof containers with tight-fitting covers. Use plastic liners if available.

Prevent Mosquito-Borne Illness

Heavy rains and flooding can lead to an increase in mosquitoes that may be infected with West Nile virus or other diseases. Use mosquito protection and follow these precautions:

- ⊗ Wear clothing that covers most of your skin.
- ⊗ Avoid being outdoors when mosquitoes are most active. For many species, this is during the dusk and dawn hours.
- ⊗ Use repellents containing DEET (N,N-diethyl-m-toluamide), picaridin or OLE (oil of lemon eucalyptus). Use strictly according to label instructions.
- ⊗ Do not allow children to apply insect repellents. Avoid applying repellents to the hands of young children.
- ⊗ Eliminate breeding sites. Remove standing water around the house and yard. Remove old tires and turn over or remove empty containers that gather rain.

Using Gasoline-Powered Generators or Pressure Washers

Carbon monoxide (CO) poisoning from engine exhaust is a common and serious danger that can result in death when gasoline-powered generators or pressure washers are used.

- ⊗ Never use generators, pressure washers or other gasoline-powered tools indoors or in a garage, carport or basement. These tools produce large amounts of CO that can build up to dangerous levels in minutes.
- ⊗ Keep your generator or pressure washer engine outdoors and well away from windows, doors and intakes.
- ⊗ Get to fresh air right away and seek prompt medical care if you suspect CO poisoning and are feeling dizzy, light-headed or nauseous.
- ⊗ Generators can cause severe electrical hazards and may cause electrocution or fire if used improperly.
- ⊗ Most portable generators are designed to work with a few appliances or pieces of electrical equipment that may be plugged directly into the generator without the use of a generator transfer switch.

Portable generators, while useful, are not recommended if you are operating sensitive equipment or have numerous large appliances or business machines. Always use the right electric power cord for the electrical equipment.

- ⊗ The cord should be a heavy-duty, outdoor-rated extension cord sized for the total electrical load (voltage and amps) needed.
- ⊗ To prevent excessive heat buildup and degradation of the power cord, select a cord that exceeds the total expected load.
- ⊗ Ensure the cord has three prongs and no splits, cuts or holes in the external insulation covering.
- ⊗ An overloaded or damaged power cord can cause electrocution or potentially start a fire.

To report a community public health emergency or hazardous substance spill event, call the 24-hour Incident & Emergency Reporting Line at **1-877-518-5608**.

Using chlorine bleach for disinfecting or sanitizing

Household bleach, or sodium hypochlorite, contains from 6 to 8.25 percent chlorine.

Use only regular, unscented household bleach. The amount of bleach to add to water depends on the percent chlorine it contains. It is important to follow the directions on the manufacturer label as brands vary.

BEHAVIORAL HEALTH SERVICES

Behavioral Health

Behavioral health missions utilize trained behavioral health response assets to engage survivors and decrease stress reactions and promote adaptive functioning. These actions allow survivors to more effectively address immediate response and recovery needs and comply with response and recovery procedures. Consider the following missions during response and recovery activities.

Disaster Assistance Center Support

- Behavioral health personnel at Assistance Centers informally engage survivors to identify needs, provide appropriate support, and referrals.
- They provide recommendations to survivors and Assistance Center management that assist residents to decrease stress levels that may be inhibiting healthy functioning.

Resource recommendation: Provide a minimum of two to six behavioral health personnel for six, 10-hour shifts.

Community/Town Meeting Support

- Behavioral health personnel at community/town meetings assist residents by helping them reduce stress levels and identifying individuals exhibiting limited functioning because of stress exposure.
- Behavioral health personnel engage informally with survivors and provide appropriate support and referrals to enhance individual functioning by meeting needs and promoting effective compliance with emergency response/recovery procedures.

Resource recommendation: Provide one behavioral health responder to 100 community members, with a minimum of two behavioral health responders to implement a “buddy” system.

Shelter Support

- Behavioral health personnel assist shelter residents by helping them reduce their stress levels. They may identify individuals exhibiting inhibited healthy functioning because of stress exposure.
- Behavioral health personnel engage survivors informally to identify needs and provide appropriate support and referrals. They provide recommendations to survivors and shelter management to enhance individual functioning and movement toward recovery.

Resource recommendation: Provide a minimum of two to six behavioral health personnel for six, 10-hour shifts.

Damage Assessment Team Support

- Behavioral health personnel assist damage assessment teams by engaging survivors to process experiences and any stress responses after damage assessors complete their assessment.
- This activity allows damage assessors to progress while supporting survivors with their needs.
- Behavioral health responders paired with damage assessment teams following the 2008 Windsor Tornado was identified as a best practice.

Resource recommendation: Pair two behavioral health responders with each damage assessment team entering the field.

Community Re-Entry Support

- During re-entry processes behavioral health responder pairs can partner with re-entry teams to provide support to residents returning to their homes.
- Behavioral health responders can assist individuals with stress-related needs and work to support individuals in identifying needs to maintain healthy functioning.
- Behavioral health responders were successfully paired with re-entry teams following the 2012 and 2013 wildfires.

Resource recommendation: Pair two behavioral health responders with each re-entry team.

Emergency Operations Center Support

- Behavioral health personnel assist Emergency Operations Center staff by informally or formally engaging response personnel to identify stress reactions. They can monitor EOCs to provide recommendations aimed at decreasing stress levels in EOCs and increasing response personnel’s capacity to maintain response operations for extended periods.
- Behavioral health personnel can provide education and other resources to assist with stress management.

Resource recommendation: Provide one to two behavioral health response personnel for six, 10-hour EOC shifts.

Resource Request Process

- To request behavioral health support for identified missions, contact the local ESF 8 (Health and Medical) or 8a (Behavioral Health) lead.
- CDPHE-OEPR behavioral health unit personnel also are available to facilitate effective resource coordination. Contact information for state staff is online www.colorado.gov/cdphe/disaster-behavioral-health.

FOOD SAFETY AND FLOOD CLEANUP

Flooding presents some unique challenges for cleaning up after the damage is done. To protect public health and ensure safety, promote caution and share this information about food safety.

If floodwaters entered the building, STOP all food operations that affect stored or prepared food, utensils, equipment, food preparation areas, water service, dishwashing services, handwashing areas or any other activity related to food preparation or services.



Damaged Food Products

- ⊗ Discard all food and packaging materials that have been submerged in floodwaters unless the food is sealed in a commercially sealed can that has not been damaged. **If in doubt, throw it out!**
- ⊗ Discard all refrigerated and frozen foods (e.g., meat, poultry, shell eggs, egg products and milk) that have been immersed in floodwaters.
- ⊗ Discard all food in damaged cans. A can is considered damaged if it is swelling, leaking, punctured or fractured; if it has extensive deep rusting; or was crushed or dented severely enough to prevent normal stacking or opening with a manual, wheel-type can opener.
- ⊗ Discard products in containers with screw caps, snap lids, crimped caps (e.g., soda bottles), twist caps, flip tops, snap-open and similar closures that have been submerged in floodwaters.
- ⊗ Do not keep food packed in paper, cardboard, cloth, single service items or similar containers that have been damaged by water.

- ☐ Undamaged, commercially prepared foods in all-metal cans or retort pouches can be saved if the labels are removed and they are thoroughly washed, rinsed and disinfected. Relabel the containers with a marker, including the expiration date.
- ☐ Ensure disposal of food items is done according to state and local guidance provided in response to the emergency. For further guidance, see the *Food Product Salvage Evaluation Guide*, opposite.

Water Supply

- ⊗ Discontinue use of the municipal water supply until it has been verified that it is no longer a threat.
- ⊗ Facilities with wells that were flooded must disinfect the well water and test it to confirm it is safe once the floodwaters have receded.

Physical Facilities

- ☐ Thoroughly wash all interior surfaces (e.g., floors, walls and ceilings) of the facility using a hot detergent solution made from a safe water source. Rinse all surfaces so they are free of detergents and residues, and treat them with a sanitizing solution.

- ☐ Clean, repair and disinfect any structural components of the building (e.g., walls, piping, ceiling and HVAC system/ventilation systems) that were affected by floodwaters wherever possible, to avoid mold contamination. All water-damaged wallboard must be removed and destroyed. Cement and concrete walls with mold damage may be able to be reconditioned.
- ☐ Thoroughly clean exhaust systems and hoods, and free them from any debris. Consult professional service technicians as needed. Water-damaged ventilation systems that cannot be thoroughly cleaned and sanitized should be removed and replaced.
- ☐ Replace all ventilation air filters.

Decontamination and Sanitation

- ☐ Use approved chemical sanitizers (e.g., non-scented chlorine bleach at a concentration of 2400 parts per million) on equipment and structural surfaces that have been contaminated with floodwaters. Decontaminate in a manner that eliminates any harmful microorganisms, chemical residues or filth that could pose a food safety risk.
- ☐ For secondary cleaning and sanitation of food contact surfaces,

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FOOD SAFETY AND FLOOD CLEANUP

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perform an additional wash-rinse-sanitize step on all food contact surfaces and equipment using appropriate sanitizer concentrations. For chlorine, use 50 to 200 parts per million.

Pest Control

- ☐ Ensure that any rodents or pests that may have entered the facility are no longer present. Remove dead pests and sanitize all food-contact surfaces that may have come in contact with pests.
- ☐ Seal all openings into the facility to prevent any future entry of pests or rodents.

Menu

- ☐ Adjust the menu as necessary to adjust to staffing changes, food availability and equipment limitations.

Equipment - General

- ☐ Inspect all equipment to ensure it is operational and the equipment's integrity is maintained.
- ⊗ Discard all refrigerated display cases, storage cases or other refrigerator equipment if the insulation, door gaskets or hoses were damaged by flood or liquefied food items.
- ⊗ Prior to cleaning, remove contaminated products from all refrigerated display and storage cases.
- ⊗ Thoroughly wash the inside and outside of equipment with a hot detergent solution. Rinse it free of detergents and residues.
- ⊗ Give special attention to lighting, drainage areas, ventilation vents, corners, cracks and crevices, door handles and door gaskets.
- ⊗ Treat all clean surfaces with an adequate sanitizing solution (see *Sanitizing and Disinfection of Surfaces: Guidance for Use of Bleach (8.25%)* for directions).

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Sanitizing and Disinfection of Surfaces

GUIDANCE FOR USE OF BLEACH (8.25%)			
Purpose	PPM	Dilution*	Contact Time
Food contact surface sanitizer to 1 gallon water	50-200	1 teaspoon bleach	2 minutes
Post-flood disinfection	2400	1/2 cup bleach to 1 gallon water	5 minutes

All surfaces must be rinsed and food contact surfaces must be washed, rinsed and appropriately sanitized after proper disinfection.

*NOTE: Dilution

- Dilution instructions are based on EPA Registration Number 5813-100 labeled instructions for use of Clorox Regular Bleach (8.25% Sodium Hypochlorite).
- If a different type of bleach is used, the labeled instructions for sanitizing food contact surfaces and routine disinfection should be followed.
- Use only regular, unscented household bleach. Splashless and scented bleach should not be used.

Food Product Salvage Evaluation Guide

FLOOD / WATER DAMAGE		
Food Product	Action	Explanation/Instruction
Fresh fruits and vegetables	Discard	Contaminants can be absorbed by produce.
Submerged or splashed screw-top, crimped-cap, twist-cap and pop-top containers	Discard	Not cleanable under/around caps. Containers returned for deposits or recycling must be drained.
Submerged permeable food packaging (paper, cardboard, cloth, plastic)	Discard	Inadequate barrier to contaminants and water.
Submerged or splashed hermetically sealed containers (cans, pouches)	Salvage	Remove label. Wash, rinse and sanitize (50-200 PPM chlorine); dry. Relabel with all required information and codes.
Leaking, dented, rusty or bulging hermetically sealed containers (cans, pouches)	Discard	Possible presence of pathogenic bacter that can produce deadly toxins. Do not use any food products that have a foul odor or any container that spurts liquid when opening.
Alcoholic beverages (closed with cork, screw-top, twist-top, crimped cap)	Discard	Check with the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) regarding alcohol tax reimbursement (large volumes).

FOOD SAFETY AND FLOOD CLEANUP

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Equipment Startup

Water Filter Systems

- Clean and sanitize the water filter housings.
- Prior to the startup of the equipment, all filter(s) should be removed and replaced if not designed to be cleaned in place.
 - If designed to be cleaned in place, follow the sanitation procedures recommended by the water filter manufacturer and/or equipment service representative.
- Any system that is without a new water filter cartridge must not be placed back in service.

Dishmachine and Three-Compartment Sink

- Run the empty dishwasher through the wash-rinse-sanitize cycle three (3) times, in order to flush the water lines and ensure that the dishwasher is cleaned and sanitized internally before it is used to wash equipment and utensils.
- Thoroughly clean and sanitize all sinks before resuming use.
- Ensure the use of a safe water source when using the dishwasher or three-compartment sink to wash, rinse and sanitize equipment and utensils.

Ice Makers

- Run three (3) complete ice-making cycles and discard all ice made during those cycles.
- Clean and sanitize the icemaker bin.

Commercial Produce Mistlers

- Remove all produce from the bins under the misters.
- Flush water through the misters for at least 10-15 minutes.
- If removable, disconnect, clean and sanitize the misting nozzles.
- Clean and sanitize the produce bins prior to restocking.

Fountain Dispensers

- Run each beverage valve on each dispenser for at least four (4) minutes.
- Remove, clean and sanitize dispensing nozzles and associated removable parts.
- Clean and sanitize the ice bin, if present.

Frozen Beverage Dispensers

- Discard all products in the dispenser(s).
- Call for service and/or follow the equipment manufacturer's recommendations for cleaning and sanitization.

Juice Machines

- Flush water through the unit for at least five (5) minutes on first flavor.
- Flush water through any additional flavors on same unit for at least one (1) minute.
- Call for service and/or follow equipment manufacturer's recommendations for cleaning and sanitization.

Coffee Makers /Tea Brewers

- Brew and discard at least four (4) pots of hot water per unit.

Maintaining Food Temperatures

- Verify that that all open-top, refrigerated, freezer display cases, walk-in refrigerators and walk-in freezers consistently maintain cold holding temperatures (less than 41°F or in a frozen state) before any food items are placed in them.
- Ensure that the hot holding equipment can heat to the appropriate cooking temperature (greater than 135°F) for hot foods.
- Verify that all equipment used for food preparation (e.g., cooking, cooling and reheating) is functioning and properly calibrated prior to use.



Question:
Where can I find out more about retail food regulations?

Answer:
Additional information about the rules and regulations may be obtained by calling 303-692-3620, or online in the Code of Colorado Regulations, 6 CCR 1010-2.*

*NOTE:

6 CCR 1010-2 at www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=5192&fileName=6%20CCR%201010-2.

HOME SAFETY AND FLOOD CLEANUP

Handling Home Furnishings After a Flood

Some find it difficult to throw away items in a home, particularly belongings with sentimental value. However, keeping certain items soaked by sewage or floodwaters may be unhealthy.

- Materials that cannot be thoroughly cleaned, disinfected and dried within 24-48 hours should be discarded.
- In general, do not try to save moldy, porous items. Dispose of the following items if the materials have been under water or you can see or smell mold:
 - ⊗ Carpet, carpet padding and rugs
 - ⊗ Upholstered furniture, mattresses and box springs
 - ⊗ Computers, microwaves, window air conditioning units and other electronics/appliances that had fans and were housed in moldy rooms
 - ⊗ Papers and books
- Items that typically can be saved:
 - Nonporous items such as china, glass, jewelry, porcelain and metal
 - All-wood furniture with mold growth but otherwise in good condition
 - Some electronics and small appliances (depending on flooding conditions)
 - Photographs, books and valuable or important legal documents with minor levels of mold growth
 - Artwork, textiles and clothing that are not physically damaged

Cleaning Salvageable Household Contents After a Flood

Clean walls, hard-surfaced floors and many other household surfaces with soap and water. Disinfect in a chlorine bleach solution. Use only as directed on the bottle.

- Thoroughly disinfect surfaces that come in contact with food and children's play areas.
- Replace fiberboard, insulation and disposable filters in your heating/cooling system.
- Wear rubber boots and waterproof gloves during cleanup.

Cleaning Swimming Pools, Hot Tubs and Spas

- Pools, hot tubs and spas affected by floodwaters should be drained and super-chlorinated.
- Refilling with water from a public water system on a boil order is allowed as long as the pool maintains an adequate disinfection level.



WELL WATER SAFETY

If a well used for drinking water has been flooded or contaminated during repair work, it is important to thoroughly disinfect it before using the water. Property owners may want to consult with a local licensed water well driller or pump installation contractor (see www.water.state.co.us/groundwater/BOE/Pages/LicensedContractors.aspx). It does require specific equipment and experience for proper decontamination of the well.

Inspect the well and its components, including:

- Electrical wires and connectors that supply power to the well
- Above-ground PVC plastic pipes used to bring water to the house
- Well houses and special equipment such as chlorinators, filters and electronic controls
- Pressure tanks that may have been exposed to excessive heat
- Storage tanks, vents and overflow pipes

Homeowner Tips

- If the water tastes or smells earthy, smoky or burnt, it may be necessary to flush the water lines.
- If there are any doubts about the safety of the water in the well, contact the county health department or a certified lab for water testing.
- If the well or water system is contaminated, or if testing indicates that bacterial contaminants are present, disinfection of the well is recommended.
- To disinfect the well, make a chlorine solution by mixing 1 gallon of unscented, regular household bleach (6 percent chlorine solution) in 10 gallons of water. Add the solution to the well between the well casing and pump drop pipe.

- If a household water well (4-inch diameter casing) has more than 500 feet of standing water column or the casing diameter is greater than 4 inches, refer to Rule 15* of *Colorado Water Well Construction Rules* for instructions.
- Disconnect the well from its storage and distribution systems. Pump the well water to waste until the water is relatively clear.
- Stop the pump and reconnect to the storage and distribution systems. Prior to pumping, check to be sure the public wastewater system is functioning properly.
- Start the pump and open all faucets on the system. Pump until a chlorine odor can be detected at the faucets. Close all the faucets and stop the pump.
- Allow the chlorine solution to remain in the well, storage and distribution systems at least overnight, or preferably, 24 hours.
- Pump the well to waste until the odor and taste of chlorine has disappeared. Excessive amounts of contamination in the well or water supply system may require repeating the process.
- Two days after disinfection, collect a sample of water for bacteriological analysis, using only a sterile container furnished by the state or local health department's laboratory.
- Private well owners with concerns about their wells should collect samples for coliform testing. Test for volatile organic compounds (VOC) and hydrocarbons if the well head is damaged or compromised, or if the well is in a high risk area where drilling activity or hydrocarbon storage occurs.

*NOTE:
2 CCR 402-2 at www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=4344&fileName=2%20CCR%20402-2

Damaged Drinking Water Systems



Drinking water systems must follow the regulations of EPA's Safe Water Drinking Act. When the Colorado Department of Public Health and Environment learns of a water system problem, the state is required by law to evaluate the system and respond accordingly. While the local health department is not required to work with the State and the supplier, CDPHE staff will notify the local authorities and keep them updated.

By law, the water supplier must notify and distribute information to its customers, following very specific language and action steps.

Notices must contain:

- Description of the violation
- Potential health effects
- Population at risk
- Whether alternate water supplies need to be used
- Steps the supplier is taking to correct the problem
- Actions consumers should take
- When to expect resolution

Resources

- Certified safe drinking water testing laboratories: www.colorado.gov/pacific/sites/default/files/SDWMAY2015%20.pdf
- Drinking Water from Household Wells: www.colorado.gov/pacific/sites/default/files/WQ-DW-Publications-Drinking-Water-From-Household-Wells.pdf



MOLD

Excess moisture and standing water contribute to the growth of mold in homes and other buildings. When returning to a home that has been flooded or exposed to rain, be aware that mold could be present and may be a health risk to building occupants.

- **Moisture that enters buildings from leaks or flooding accelerates mold growth. Molds can cause disease, trigger allergic reactions and continue to damage materials after the storm.**
- **Remove standing water from the building. Remove wet materials promptly and ventilate; use fans and dehumidifiers if possible.**
- **If mold growth has already occurred, it is best to have a professional remove it.**
- **Individuals with known mold allergies or asthma should never clean or remove mold.**
- **Small areas of mold growth can be removed with soap and water.**

UNDERSTANDING RISKS

MOLD EXPOSURE

CDC Recommendations for Protection from Exposure to Mold in Flooded Buildings¹ by activity and risk factor²

NOTE: EVERYONE SHOULD AVOID UNNECESSARY EXPOSURE TO MOLD. IT IS ESPECIALLY IMPORTANT FOR ANYONE AT HIGH RISK FOR INFECTION AND ANYONE WITH A DISEASE CAUSED BY IMMUNE SENSITIZATION TO MOLD AND MOLD CONSTITUENTS.

RISK FACTOR	LIMITED	MINIMAL	MODERATE	ELEVATED	HIGH
<i>level of activity during exposure</i>					
<i>type of risk factor</i>	Observing from outside (disturbs no dust or mold)	Inspecting or assessing damage (disturbs little dust or mold)	Recovering moldy belongings (disturbs some dust or mold)	Sweeping, light cleaning, removing mold (disturbs much dust or mold)	Using power tools, cleaning, demolishing (disturbs all dust and mold)
No risk factors	No special precautions needed	No special precautions needed	Respiratory, gloves and dermal (skin) protection	Respiratory, gloves, dermal (skin) and eye protection	Respiratory, gloves, dermal (skin) and eye protection

PEOPLE AT HIGH RISK FOR INFECTION OR COLONIZATION

Profound immunosuppression ⁵	Avoid exposure	Avoid exposure	Avoid exposure	Avoid exposure	Avoid exposure
Immunosuppression ⁶	Respiratory protection	Respiratory, gloves, dermal and eye protection	Avoid exposure	Avoid exposure	Avoid exposure
Obstructive or cavitory lung disease ⁷	Respiratory protection	Respiratory protection	Respiratory, gloves and dermal (skin) protection	Respiratory, gloves, dermal (skin) and eye protection	Avoid exposure

PEOPLE WHO HAVE DISEASES WITH IMMUNE SENSITIZATION⁸

Allergic rhinoconjunctivitis exacerbated by moldy materials	Respiratory protection	Respiratory protection	Respiratory, gloves, dermal (skin) and eye protection	Respiratory, gloves, dermal (skin) and eye protection	Avoid exposure
Asthma exacerbated by moldy materials	Respiratory protection	Respiratory protection	Respiratory, gloves, dermal (skin) and eye protection	Avoid exposure	Avoid exposure
Hypersensitivity pneumonitis caused by moldy materials	Respiratory protection	Respiratory protection	Respiratory, gloves and dermal (skin) protection	Avoid exposure	Avoid exposure

PEOPLE WITH UNKNOWN RISK⁹

Younger than 12 years ¹⁰	Avoid exposure	Avoid exposure	Avoid exposure	Avoid exposure	Avoid exposure
Pregnant	Respiratory protection	Respiratory protection	Respiratory, gloves, dermal (skin) and eye protection	Avoid exposure	Avoid exposure
Older than 65 years	Respiratory protection	Respiratory protection	Respiratory, gloves and dermal (skin) protection	Avoid exposure	Avoid exposure



NOTES from CDC Recommendations for Protection (opposite)

1. Significant mold contamination is assumed if the building's interior was saturated with water for more than 48 hours, extensive water damage is present, extensive mold growth is visible, or "mildew" odors are clearly stronger than before the flooding.
2. A visible dust cloud suggests high potential for exposure. However, activities can be associated with high fungal exposure even without visible dust. Consider more protective interventions for activities of longer duration or greater frequency.
3. Recommended respiratory protection for residents is a respirator at least as protective as an N-95 filtering face piece. Respirator protection for workers in isolated areas of mold contamination (100 square feet or less) or small isolated areas of heating, ventilation, and air conditioning (HVAC) systems (10 square feet or less) where mold is disturbed is a respirator at least as protective as an N-95 filtering face piece. For working in areas of extensive contamination (greater than 100 contiguous square feet) or HVAC systems with large areas of contamination (greater than 10 square feet) and significant mold-containing dust, full face-piece respirators with N100, R100, P100 particulate filters (or for powered air-purifying respirators – HEPA filters) are recommended.
4. Occlusive eye protection (safety goggles, not regular eyeglasses); see discussion of personal protective equipment (PPE) in Chapter 4 of CDC's report, *Mold: Prevention Strategies and Possible Health Effects in the Aftermath of Hurricanes Katrina and Rita* available at <http://stacks.cdc.gov/view/cdc/10790>.
5. Transplant recipients, including organ or hematopoietic stem cell recipients within 6 months of transplant or during periods of substantial immunosuppression; neutropenia (neutrophil count < 500/μL) due to any cause (including neoplasm, cancer chemotherapy); CD4+ lymphopenia (lymphocyte count < 200/μL) due to any cause, including HIV infection. Affected individuals should consult with their physicians before entering the affected area.
6. Includes immunosuppressant drug therapy, such as cancer chemotherapy, corticosteroid, or other immunosuppressive drug therapy; and diseases impairing host defense such as leukemia or lymphoma. Affected individuals should consult with their physicians before entering the affected area. Duration and frequency of exposures should be minimal.
7. Such diseases include chronic obstructive pulmonary disease, asthma not exacerbated by mold, cystic fibrosis, and cavitory tuberculosis. Risk of airway colonization and subsequent diseases following mold exposure is unknown. Recommendations are based on best professional judgment.
8. The optimal treatment for allergic rhinitis, allergic asthma, or hypersensitivity pneumonitis is avoidance of the sensitizing agent. If symptoms occur despite the recommended preventive measures, avoidance of exposure is indicated. In many cases, allergic etiology of rhinitis or asthma needs to be inferred from clinical information, since the available diagnostic reagents for documenting IgE-sensitization to fungi are mostly unstandardized. Similarly, the precise antigenic agent causing hypersensitivity pneumonitis is often unclear.
9. The level of risk associated with exposure activities and the potential benefit of recommended PPE are unknown for these vulnerable populations. Due caution is recommended.
10. Exposure-reducing behavior and respiratory protection are problems for this group.

DISEASE PREVENTION

Widespread outbreaks of infectious disease after disasters are not common in the United States. Rare and deadly exotic diseases, such as cholera or typhoid, do not suddenly occur after disasters in areas where such diseases do not naturally occur. Unless a disease is brought into a disaster area from elsewhere, outbreaks that occur almost always are from diseases that were already in the disaster-affected area before the disaster struck.

Responding agencies and health care providers should report any cluster or outbreak of illnesses to the local public health agency or CDPHE at 303-692-2700 immediately. Depending on the type of disaster and the recovery situation, public health agencies may contact hospital emergency departments and shelters, if applicable, in affected areas to monitor for increases in illnesses.

Wounds

- Wounds in contact with soil, sand, sewage and debris can become infected with bacteria.
- Puncture wounds can carry bits of clothing and dirt into the wounds and result in infection.
- Crush injuries are more likely to become infected than wounds from cuts.
- Prompt first aid can help heal small wounds and prevent infection.
- Seek medical attention as soon as possible if:
 - There is a foreign object embedded in the wound such as soil, wood or metal.
 - The wound is at special risk of infection such as an animal bite, puncture by a dirty object, abdominal wound, large wounds, wounds on the hands or feet, etc.. Antibiotic prophylaxis may be indicated if the wound has a high risk of becoming infected.
 - The wound is deep or severe.
 - A previous wound shows signs of becoming infected such as increased pain, heat, swelling, redness, pus, draining or fever.
- Care for minor wounds:
 - Wash your hands thoroughly with soap and clean water.
 - Avoid touching the wound with your fingers while treating it. If possible, use disposable latex gloves.
 - Remove obstructive jewelry and clothing from the injured area.

- Apply direct pressure to any bleeding wound to control bleeding.
- Clean the wound after bleeding has stopped.
- Examine wounds for dirt and foreign objects.
- Gently flood the wound with clean water, then gently clean around the wound with soap and water. Use bottled water if there are concerns about tap water being contaminated.
- Pat the wound dry and apply an adhesive bandage or dry clean cloth.
- Provide pain relievers, if possible.

For additional information, visit CDC's *Emergency Wound Management for Healthcare Professionals* website at www.emergency.cdc.gov/disasters/emergwoundhcp.asp.



Tetanus

- As cleanup and recovery efforts begin after a disaster, there is risk of injury. Tetanus is a concern for persons with both open and closed wounds.
- A tetanus vaccination is recommended for all residents returning to an area affected by a disaster who are not up-to-date on their tetanus vaccination.
- In general, a tetanus-diphtheria (Td) booster is recommended for all adults every 10 years. A tetanus-diphtheria-pertussis (Tdap) booster can replace one regular Td dose to provide pertussis protection.
- Children typically receive tetanus vaccine as part of their routine immunizations in the DTaP vaccine.
 - Children do not need a booster until they are adolescents.
 - If a child has not received routine immunizations, a health care provider should be consulted to determine what immunizations are needed and at what intervals.
- People without a clear history of receiving at least three tetanus vaccinations and who have any wound other than a clean minor wound should get tetanus immune globulin (TIG) as well as the tetanus vaccination. TIG may prevent tetanus infection.
- Tetanus in the United States most commonly is reported in people older than 50 years of age because they are less likely to be adequately vaccinated.

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DISEASE PREVENTION

CDC recommends that public health promote awareness of the dangers of carbon monoxide poisoning from the improper use of gasoline-powered generators and power washers.

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- Women over 55 years of age especially are susceptible because fewer women than men receive the recommended tetanus boosters.
- People with diabetes are at increased risk for tetanus because they may have wounds that don't heal. Reported tetanus is about three times more common in people with diabetes, and fatalities are about four times more common.
- Prompt first aid management for wounds and prevention of infection is important. Anyone with a puncture wound or a wound contaminated with sewage, soil or saliva should consult a health care professional to determine if a tetanus booster is necessary, based on individual records.
- For questions about tetanus vaccine recommendations for wound management, please contact the Colorado Immunization Section at 303-692-2650 or CDPHE_DCEED_IMMUNIZATION@state.co.us.

CDC recommendations for tetanus vaccine for wound management are at www.cdc.gov/vaccines/vpd-vac/tetanus/.

Vaccination

- Public health agencies and health care providers may consult with CDPHE (303-692-2700) about the need to change any routine vaccination recommendations or recommend additional vaccinations due to a disaster situation.

- By staying up-to-date with vaccinations, everyone is better prepared for emergencies.
 - Health care providers should ensure that recommended vaccinations are up-to-date for their patients.
 - Patients should request their vaccination history from their health care provider's office.

Animal and Insect-Related Hazards

- Avoid mosquito bites by using insect repellents that contain DEET or picaridin.
- Health care providers should consider a diagnosis of West Nile virus infection in persons presenting with compatible symptoms, depending on the season.
- Mosquito surveillance activities, such as for West Nile virus, may be indicated depending on the situation and the season. If a jurisdiction chooses to conduct mosquito surveillance after a disaster, assessments of larval density in aquatic habitats can be a good measure of how many and which mosquitoes (vector or non-vector) may emerge as adults. This allows mosquito-control experts to recommend appropriate control measures if any were deemed necessary.
- Avoid wild or stray animals.
- Avoid attracting rodents by removing potential sources of food, water and shelter, such as garbage, dirty dishes and debris.

See CDC's *Protect Yourself from Animal- and Insect-Related Hazards After a Disaster* website at www.emergency.cdc.gov/disasters/animalhazards/.

Gastrointestinal Illness

- In most disaster situations, an increase of gastrointestinal illnesses is not detected.
- The occurrence of common, short-term, self-limiting gastrointestinal illnesses such as norovirus may increase after disasters. The increase

- might occur because drinking water may be contaminated and maintaining basic hygiene may become more difficult.
- Health care providers should consider laboratory testing for gastrointestinal pathogens if a patient reports three or more days of diarrhea, any bloody diarrhea, diarrhea plus a fever or other concerns.
 - Obtain stool for bacterial pathogens (Campylobacter, Salmonella, Shigella, Shiga toxin-producing E. coli, and Vibrio) and parasites (Cryptosporidium and Giardia).
 - Ensure the laboratory will test for all the pathogens listed. For example, 'ova and parasite' testing often does not include Cryptosporidium testing.
- People who are ill with gastrointestinal symptoms should stay home from work, child care or school until at least 24 hours after diarrhea and/or vomiting have resolved.
- People who are ill with gastrointestinal symptoms should not prepare food for others until at least 24 hours after diarrhea and/or vomiting have resolved.

Respiratory illness

- In most disaster situations, an increase of respiratory illnesses is not detected.
- The occurrence of common, short-term, self-limiting respiratory illnesses such as the common cold may increase after natural disasters. The increase usually occurs because maintaining basic hygiene has become more difficult.
- Health care providers should notify the local public health agency immediately if they find clusters of influenza-like illness or more severe respiratory illnesses such as pneumonia, Legionnaire's disease, fungal respiratory infections, etc.

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DISEASE PREVENTION

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Sewage Exposure and Disease Risks

- Raw sewage can contain bacteria, viruses and parasites.
- The risk of illness depends on the type of exposure and the duration of exposure to the sewage.
- The most common mode of infection is through oral contact with sewage, often by touching the mouth with a hand.
- Skin contact poses a health threat if someone has an open wound.
- The risk of exposure when a person has contact with sewage can be significantly reduced by effective and immediate cleanup, and by taking appropriate safety precautions.
- ⊗ Assume anything touched by sewage is contaminated.
- ⊗ Avoid sewage-contaminated water.
- ⊗ Follow boil-water advisories, if issued by public health when there could be sewage or other contamination of the water supply.
- ⊗ Do not eat or drink in areas near sewage.
- ⊗ People in contact with sewage, sewage-contaminated water or any item that is contaminated with sewage should wash their hands well with soap and clean water, especially before eating or touching the mouth or face. Hand sanitizers can be used in addition to hand washing, but **not** in place of washing. Hand sanitizers may be helpful in situations where hand washing facilities are not accessibly or readily available.
- ⊗ Immediately clean any wound that comes into contact with sewage.
- ⊗ After having contact with sewage, people should shower and change out of contaminated clothes. Launder clothes separately or discard.



Disaster Epidemiology: morbidity and mortality surveillance

- Disaster-related morbidity and mortality surveillance data needs depend on the type of disaster and associated response. These data can be used to:
 - ⊖ Inform and guide response and recovery efforts
 - ⊖ Inform education campaigns and prevention strategies
 - ⊖ Rapidly detect clusters and outbreaks of illnesses so prompt control measures can be implemented
 - ⊖ Prevent morbidity and mortality in affected communities, both short term and long term
- Depending on the season and situation, local public health agencies in or near areas affected by a disaster may wish to conduct enhanced surveillance for diseases and adverse health events among persons visiting emergency departments and those who are staying in emergency shelters.
 - ⊖ Conditions of concern include: gastrointestinal illness, fever, rash with fever, wound infections, influenza-like illness, other respiratory illnesses, meningitis, encephalitis, other acute communicable diseases (such as vaccine-preventable diseases and zoonotic or vector-borne diseases) and injuries.
- Public health agencies should consider whether morbidity and/or exposures among responders or relief workers need to be tracked.
- Public health agencies that are interested in additional tools or that wish to collect more detailed surveillance data can consult the CDC's *Public Health Assessment and Surveillance after a Disaster* website (www.bt.cdc.gov/disasters/surveillance/) for a variety of tools:
 - ⊖ CASPER: Community Assessments for Public Health Emergency Response typically are completed after a disaster to assess the affected community's needs, but also can be conducted during non-disaster periods to assess community preparedness, public health needs, etc. More information about CASPER may be found at www.cdc.gov/nceh/hsb/disaster/casper.htm.
 - ⊖ Shelter Assessment Tool: CDC's Shelter Assessment Tool can be used to assess conditions within a shelter, including crowding and food and water safety. This tool is available at www.bt.cdc.gov/shelterassessment/.

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DISEASE PREVENTION

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- ⊖ Morbidity surveillance tools: CDC has tools that can collect aggregate morbidity data as well as data on effected person's immediate needs. These tools can be used in shelters, hospitals and other acute care settings. The tools are online at www.bt.cdc.gov/disasters/surveillance/.
- The following data collection systems may be helpful, depending on the situation:
 - ⊖ Public health may find syndromic surveillance in emergency departments and/or other health care sites to be useful. Aggregate or individual data may be collected. For example, trends in pharmacy data including sales of prescriptions and over-the-counter medications, may help with health-related situational awareness.
 - ⊖ Public health may register and track those exposed to a hazard during or after a disaster, such as in a radiation or chemical incident, where exposed persons may need to be monitored over time.
 - ⊖ The Rocky Mountain Poison and Drug Center may be able to provide data on carbon monoxide poisoning or other poisoning issues related to an incident. Contact RMPDC through www.rmpdc.org or 303-739-1100.
 - ⊖ Vital statistics data can be used to track mortality. However, death certificates are not always issued in a timely manner. CDC has a mortality surveillance form that can be used by coroners, funeral homes, hospitals, medical examiners, etc. available at www.bt.cdc.gov/disasters/surveillance/ to collect data to characterize the number and cause of deaths related to a disaster. While it does not replace a death certificate, the form provides more detail, which can help guide response and education efforts.

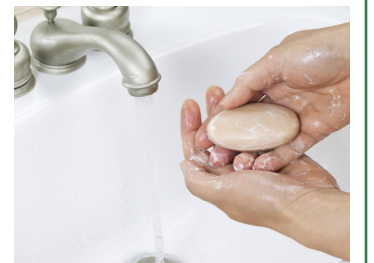
For additional information, please contact the Colorado Department of Public Health and Environment's Disease Control and Environmental Epidemiology Division at 303-692-2700. Find updates and changes to guidance at www.colorado.gov/cdphe.

Resources from CDC
Natural Disasters and Severe Weather
www.emergency.cdc.gov/disasters/

Prevent Illness and Injury After a Disaster
www.emergency.cdc.gov/disasters/illness-injury.asp

Stay safe: it just makes sense

- Avoid sewage-contaminated water. Assume anything touched by sewage is contaminated.
- Follow any boil water advisories in your community if there is any sewage or other contamination of your water supply.
- Do not eat or drink in areas near sewage.
- Wash your hands well with soap and clean water before eating or touching your mouth or face.
- Immediately wash and disinfect any wound that comes into contact with sewage.



Free public health information

The Colorado Health Emergency Line for the Public (CO HELP) is a service to keep people informed about current public health issues. CO HELP, which is operated by the hotline experts at the Rocky Mountain Poison and Drug Center, works closely with state and local public health agencies to be able to share the most accurate information with Coloradans.

A partnership of the Colorado Department of Public Health and Environment and the Rocky Mountain Poison and Drug Center



M-F 9 a.m. to 10 p.m.
S-S 9 a.m. to 5 p.m.

SEWAGE BREAKS AND BACKUPS

Sewage backups or broken sewer lines may cause odor problems, property damage and unhealthy living conditions. Untreated sewage contains disease-causing organisms such as bacteria, viruses and parasites.

Causes

- ⊗ Too much precipitation in leaky sewer pipes.
- ⊗ Inadequate system capacity, particularly in newly developed residential or commercial areas.
- ⊗ Blocked or broken pipes.
- ⊗ Improperly designed and installed sewer systems.

Prevent mold

- Drying out can take several weeks in an enclosed area such as a basement or crawl space.
- Mold growth can occur as long as humidity level remains high.
- If the damaged area is not cleaned and dried out properly, a musty odor, which can indicate mold growth, may remain long after the sewage overflow.

Use protective gear

- ⊗ Wear protective clothing such as waterproof boots, gloves, eye protection and washable or disposable clothes.
- ⊗ Wear a mask or respirator if splashes into mouth and nose are possible.

Cleaning safely

- ⊗ Never mix household cleaners and disinfectants. Some mixes can produce harmful vapors. Bleach and ammonia form toxic gases called chloramines and ammonium chloride.
- ⊗ Open windows and doors. Use fans to circulate air during and after the use of disinfecting, cleaning and sanitizing products.

Inside the home

- Ensure that the structure is safe prior to doing work in the affected area. Make sure there is no structural damage, electrical hazards or natural gas leaks.
- Thoroughly clean and disinfect damaged areas to reduce risk of disease.
- Reduce the humidity in the damaged area. Open the house and removing standing wastewater with a mop, pump, wet vac or squeegee.
- Open interior closets and cabinet doors to allow circulation.
- Use fans, dehumidifiers and window air conditioners to circulate the air. Whole house air conditioners or furnace blowers should be used **only** if air ducts were not impacted by standing wastewater.
- Use moisture-absorbing products in enclosed areas where air can't move freely.
- Sort contents of the damaged areas to separate salvageable furnishings from unusable debris.
- Hire a professional cleaning company to steam clean and disinfect salvageable furnishings.
- Dispose of materials exposed to wastewater if they cannot be steam cleaned thoroughly or disinfected.
- Discard contaminated food, cosmetics, stuffed animals and baby toys.
- Contaminated mattresses, pillows, foam rubber items, upholstered couches and chairs, books and most paper products generally should be discarded as they are difficult to disinfect.
- Get a cost estimate from a professional cleaner to help determine if furnishings are worth saving.
- Thoroughly wash soiled clothing and small throw rugs with hot water. Use bleach if possible.
- If only a portion of the carpeting is damaged, it may be adequately cleaned by a professional carpet cleaner.
- Larger rugs and those with foam backing may have to be discarded, as may wall to wall carpeting, which usually will not return to its former size. The foam padding likely will have to be replaced.
- Seal discarded items in heavy plastic garbage bags before disposal.
- Contact your trash collection company about removing furniture, appliances and bulky furnishings, or take these items directly to a landfill.



SEWAGE BREAKS AND BACKUPS

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Outside the home

- Remove plastic ground liners, surface contamination and heavily contaminated soil from the impacted area if possible.
- Treat remaining contaminated soil in place by liberally applying garden lime to reduce odor and enhance degradation of organic matter.
- Cover with clean dirt or temporarily fence off area to prevent accidental contact with lime and any remaining contamination if contaminated area is out in the open.
- Mix lime in with a rake after a day or two. Use a sprinkler or hose to water the lime and remaining residues into the soil.
- Let the area dry in sun if possible before allowing access.
- Excavated soils may be treated onsite with garden lime in the same manner.
- Turn over clean soil frequently to provide oxygen to naturally occurring microbes in soil that degrade organic material.
- If onsite treatment is not possible, or if it can't be accomplished without creating a nuisance condition, contaminated soils and other materials removed from impacted area may be disposed of at any landfill that is willing to accept them.



Minimal damage

1. Clean and disinfect thoroughly if the damage to the home is minimal and you are able to clean up the overflow promptly. Disinfectants and sanitizers often contain toxic substances, so be sure to read and follow all label instructions carefully.
 2. Thoroughly wash walls, floors, closets and other washable contents of the damaged area with soap and water.
 3. Follow washing by disinfecting with a bleach solution or a quaternary ammonia disinfectant product such as Lysol. Usually, common household cleaning products and disinfectants are effective if used correctly.
 4. Keep the bleach solution in contact with the item to be disinfected for at least one minute, then rinse it well.
 5. Wash again with a mild soap and water and rinse thoroughly again.
- If the material can't be cleaned with bleach without causing damage, try a quaternary ammonia product such as Lysol. Handle these cleaning agents with care. **Never** mix the two cleaners.

Extensive damage

- Consider removing and replacing damaged wallboard and wall insulation to avoid indoor air quality problems later. Wallboard acts like a sponge, drawing moisture up above the original water level. It becomes very fragile if it stays wet for long and will fall apart easily. Even after drying, contaminants may have seeped behind the drywall and dried inside. Mold can penetrate 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.
- Thoroughly clean, disinfect and dry wooden wall studs and sills to avoid replacing. Since the studs and sills will be covered by new wallboard and painted, they will be removed from direct human contact.
- For paneling, carefully pry the bottom of each panel away from the wall. Hold the paneling bottom away from the wall sill with a block so that the area between wall studs can drain and dry out. You may have to remove the paneling completely to take out wet insulation or extensive contamination behind it. Once disinfected and dried out, the paneling often can be nailed back into place.
- Thoroughly wash, disinfect and dry concrete walls and floors. Wastewater won't damage concrete like it will wood or wallboard, but it still soaks in to some extent.

DEBRIS CLEANUP

In response to a large scale emergency, the Colorado Department of Public Health and Environment may issue temporary guidance and regulatory relief for the management and disposal of damaged or destroyed structures, vegetation debris, vehicles, spoiled food, household chemicals, dead animals, septage and sewage.

Flooding, fires and severe storms can create debris and waste that require rapid response. Prompt cleanup and safe management of debris enables residents to move forward with their lives. It minimizes potential public health and environmental issues that may be exacerbated the longer the debris is left in place. For instance, prompt cleanup can prevent nuisance conditions, odors, disease and water contamination from runoff.

In some circumstances that require timely action, the Department may consider waiving or modifying some specific regulatory requirements on a temporary basis.

Vegetation

Vegetation debris and sediment following a destructive event may be managed by the property owner or the property owner's contractor in accordance with local (city and county) rules and ordinances.

- ❑ You may remove vegetation debris and sediment transported by storm water into ditches, natural or manmade ponds or other low lying areas to ensure they function properly.
- ❑ Vegetation and sediment that has been removed or stockpiled must be managed in accordance with local (city or county) rules and ordinances.
- ❑ Handle and store vegetation debris in a manner that prevents its release into storm drains, streams, ditches and other surface waters. Store waste in upland areas away from concentrated stormwater flows, and in a manner that prevents erosion and transport of materials.
- ❑ The Department will not enforce solid waste requirements so long as the waste material does not create a nuisance or violate the Water Quality Control Division's stormwater regulations.

Structures

After a destructive event, use care when handling and transporting debris from buildings that are either partially damaged (when salvageable building materials remain) or completely destroyed (when only ash and debris remain). If the structures are partially damaged but safe to enter, the owner or the owner's contractor may dispose of household hazardous waste (i.e., paints, car batteries, pesticides, etc.) at the county or municipal household hazardous waste facility.

- ❑ Structures should be handled in a manner that will minimize potential exposure to any hazardous materials that might be present in a damaged structure or debris from structures.
- ❑ Older structures have a greater potential to contain asbestos and lead. Some inert debris (non-leaching, or unable to dissolve in water) and sediment may be disposed of onsite. If you wish to bring debris from a damaged structure to a landfill, first contact the facility to confirm the landfill will accept the waste.

Food Waste

- ❑ Spoiled, contaminated or expired food managed by residents and businesses may be disposed at a landfill or taken to a composting operation approved to accept food waste.
- ❑ The property owner or the property owner's contractor may handle food waste disposal in accordance with local (city and county) rules and ordinances.
- ❑ The Department will not enforce solid waste requirements so long as the management does not create a nuisance, does not violate the Water Quality Control Division's stormwater regulations, and complies with the following criteria:
 - Ⓞ No food waste shall be placed in any body of water or seasonal creek or pond.
 - Ⓞ Surface water should be diverted from the pit utilizing an upgradient diversion berm or other method.
 - Ⓞ All food waste must be buried at least 150 feet down gradient from any groundwater supply source.
 - Ⓞ In no case should the bottom of the burial pit be closer than five feet to the groundwater table.
 - Ⓞ The food waste burial complies with local (city and county) rules and ordinances.

Dead Animals

During an emergency event, the Department may implement its Emergency Livestock Disposal Policy. If the owners cannot meet the requirements of the preapproved plan defined in the policy, the owners are required to submit disposal plans to the Department and the local city council or the board of county commissioners. Transport of dead animals to a landfill for final disposal is permitted if the landfill accepts them.

Household Chemicals

Household Hazardous Waste, or HHW, may be taken to a county or municipal HHW facility for recycling, including intact paint and chemicals in containers less than 5 gallons. Check with your local environmental health agency to see if a temporary HHW collection site has been established. If HHW cannot safely be removed from other flood debris or no recycling option is available, HHW can be taken to a landfill for disposal.

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DEBRIS CLEANUP

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Propane Tanks

If the property has a propane tank system, turn off the valves if they are accessible and don't appear to be damaged. Tanks, brass and copper fittings and lines can be damaged in a destructive event and can be unsafe. If fire burned the tank, the pressure relief valve probably opened and released the contents. The property owner should contact the propane supplier immediately to have the system inspected, assess the damage and make repairs prior to reuse. Emergency response personnel should be contacted if there is evidence of severe damage or the propane tanks cannot be removed from debris.

Heating Oil Tanks

For a heating oil tank system, contact the heating oil supplier for an inspection of the system before using it. During a destructive event, tanks may shift or fall from their stands and fuel lines may kink or weaken. Heat, such as from a fire, may cause tanks to warp or bulge. Non-vented tanks are more likely to bulge or show signs of stress. A destructive event can loosen or damage fittings and filters.

Vehicles

Fuel, oil, hydraulic fluid and other automotive fluids from vehicles must be removed and managed appropriately prior to recycling or disposal of the vehicle at a landfill.

Septage and Sewage

Wastewater treatment plants may be damaged rising streams that flood domestic wastewater treatment plants. It could cause the plant to release untreated and partially treated sewage, which then is carried away by floodwaters. Septic systems also may be destroyed or compromised in a destructive event. If there is sewage or septage in debris, the waste does not need to be separated. It can be disposed of at a landfill mixed with other debris.

- Ⓞ Property owners and contractors should prevent exposure when working in or around septage and sewage.
- Ⓞ Minimize or eliminate contact with the contaminated materials and do not spread the septage or sewage.

Electronic Waste

Damaged televisions, computers, DVD players and other electronic devices may be taken to an electronics recycler or collection location if the material is not contaminated by sewage, septage or other debris. The Department may issue a temporary waiver of the electronic waste landfill ban. A waiver may allow the disposal of **only** residential electronic waste at a solid waste landfill, and only if the electronic waste has been contaminated by sewage, septage or deemed unrecyclable from contamination after an emergency. Waivers, when activated under unusual circumstances, do not include electronic waste from businesses.

- Ⓞ Electronic waste from businesses must be managed as a universal waste or as a hazardous waste, depending on the materials.

White Goods and Refrigerants

The term "white goods" is used to describe major household appliances such as washers, dryers, refrigerators, freezers, hot water heaters and other larger appliances. They are favored for recycling because white goods are manufactured with a high percentage of metal.

- Ⓞ Prior to recycling or disposal at a permitted landfill, white goods containing refrigerants must have those refrigerants properly recovered and handled by an EPA-certified technician with proper equipment.
- Ⓞ The facility accepting the white goods for final disposal or recycling must keep onsite for three years documentation verifying refrigerant recovery. The refrigerants include chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs). Contact the Chlorofluorocarbons Unit at 303-692-3200 for the *Owner's Refrigerant Recovery Record* form or download the form from www.epa.gov/ozone/title6/608/recoveryform.pdf.

In Colorado, small appliance refrigerant recovery is regulated by the Colorado Department of Public Health and Environment's Air Pollution Control Division, in its Indoor Environment Program. A hotline is available to leave messages, report violations or to request assistance for either the state or federal chlorofluorocarbon programs. Call the Chlorofluorocarbon Hotline at 303-692-3200.



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DEBRIS CLEANUP

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Check the CDPHE website to ensure that you are following the most up-to-date guidance, including specific information on current incidents.

www.colorado.gov/cdphe/asbestos

Asbestos

The Colorado Department of Public Health and Environment has in-state authority to regulate asbestos under two acts, the Clean Air Act and the Resource Conservation and Recovery Act (RCRA). The Hazardous Materials and Waste Management Division and the Air Pollution Control Division share regulatory responsibility for asbestos.

Facilitating rapid recovery

When a disaster occurs – whether wildfire, tornado or flood – there is the potential for damage to or complete destruction of homes, commercial buildings and other structures. These events create an unexpected emergency situation that warrants a rapid response. Once the immediate threat has passed, including any necessary search and rescue, communities will be moving from emergency response to longer term cleanup and recovery. A prompt cleanup may enable residents to move forward with their lives while minimizing potential public health and environmental issues that may be exacerbated the longer the material is left in place.

In a situation such as disaster recovery, the Department may temporarily relax certain regulatory requirements for asbestos inspection, handling and notification that would normally apply. This temporary modification **only** applies to Colorado's asbestos regulations. It would **not** alter any federal regulatory requirements (e.g., EPA, OSHA) that also apply with respect to debris cleanup and worker safety. Please contact the appropriate federal agencies regarding the applicability of their regulations.

Coordinating recovery efforts

CDPHE and its local partners work together to help provide relief and information to affected communities. CDPHE issues guidance based on the nature and severity of an event to provide a temporary, flexible and protective approach during emergency response and recovery. Inspection and sampling of debris and a state-issued demolition permit are not required to remove scattered debris such as materials preventing rescue operations, blocking roads, waterways or otherwise impeding recovery efforts.

Procedures for asbestos removal

- If asbestos is known to be present above regulatory levels in a home, commercial building or other structure, it must be handled in accordance with Colorado Regulation No. 8, Part B (5 CCR 1001-10).*

*NOTE:

See Colorado Air Quality Control Commission Regulation No. 8, Part B at www.colorado.gov/pacific/sites/default/files/5-CCR-1001-10_1.pdf.

- For homes, commercial buildings or other structures that are completely or partially destroyed and unsafe to enter to inspect, CDPHE will consider whether the requirements for sampling and handling will be modified. If so, disposal of this debris must be made at landfills approved to accept this waste. Property owners or their contractors are required to provide written notice of the demolition of buildings partially or completely destroyed. Notification must be emailed to CDPHE's Asbestos Unit at cdphe.asbestos@state.co.us, using the official *Demolition Notification Application* form found at www.colorado.gov/pacific/sites/default/files/AP_ASB_Demolition-Permit-Application-Form.doc. Applicants need to fill in the applicable sections (site address, owner, demolition contractor information and landfill) only.
- Under some emergency situations, the notification fee may be waived, as well as the 10-working day advance notification requirement.
- A local agency, such as the county building department, environmental health department or emergency response team must designate the building as being completely or partially destroyed and unsafe. Attach a photograph illustrating the building's condition.
- For lesser damaged homes, commercial buildings or other structures where sampling and handling of potential asbestos-containing material is feasible, building owners or contractors must comply with all requirements in Regulation No. 8, Part B.

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DEBRIS CLEANUP

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Disposal of debris and ash

After a fire, the remaining ash may be relatively harmless, similar to the ash that might be found in a home fireplace. However, the remaining debris and ash from structures may contain unknown substances potentially detrimental to public health and the environment. It is important to handle debris, including ash, in a manner that reduces the risk of contact with any hazardous materials that could be in the debris.

- Soil under the area where the debris was deposited should be scraped to be sure that all contaminants have been removed from the site.
- Materials must be wetted thoroughly to reduce dust as much as possible, then packaged inside a 6-mil plastic sheeting liner.
- Place the package in an end-dump roll-off with the top of the roll-off sealed with the plastic sheeting to help secure the contents during transport.
- The roll-off can be moved to a landfill by the property owner or property owner's contractor. Call the landfill before transporting to alert the landfill that the material is coming, confirm that it will accept the waste and follow the landfill's procedures.

- No asbestos-containing materials may be recycled.
- Recycling facilities and some landfills will accept metal, concrete and other materials for recycling. Metal debris and concrete must be washed clean prior to recycling. Contact the recycling facility or landfill prior to bringing recyclable materials.
- Before recycling the material, it must be inspected by a certified asbestos building inspector and found to be free of asbestos-containing materials prior to recycling.

Asbestos inspection, abatement and disposal

- A list of asbestos consulting firms who employ Colorado-certified asbestos building inspectors, general abatement contractors and contact information for landfills that will accept asbestos-containing material is online at www.colorado.gov/cdphe/asbestos.
- For more information including emergency modifications to Regulation No. 8, Part B*, please contact the Asbestos Unit at 303-692-3100 or cdphe.asbestos@state.co.us. CDPHE's Asbestos Unit can provide recommendations on how to respond to both widespread and site-specific issues.

On-Site Disposal of Debris

The Solid Waste Act and Regulations allow any person, other than governmental entities, to dispose of their own waste on their own property provided the Department approves an engineering and operations plan that complies with the requirements for locations, restrictions, standards, design and operating rules. The design and operating requirements could be different at different locations, depending on the site setting and types of material.

The Department typically encounters three major types of disaster debris:

- 1) inert (non-leachable and/or non-reactive) materials
- 2) vegetation
- 3) non-inert (leachable and/or reactive) materials

None of these materials, if handled and disposed of appropriately, should cause an unsafe impact to people, wildlife, groundwater, surface water or air. Inert materials are the easiest to manage because they are not mobile and will not present a significant risk to human health or the environment. Inert materials include earthen materials, hardened concrete, cured asphalt, masonry, some metals and other approved materials.

Inert materials may be disposed of on your own property with the following provisions:

1. The disposal of inert waste on the property must be approved by the local government agency.
2. The inert waste may be disposed of in a basement, if present, or in a hole in the ground. The base of the hole should be at least 5 feet above groundwater.

3. The materials need to be covered with at least 2 feet of clean fill.
4. The cover needs to be sloped to achieve positive drainage and prevent ponding.
5. The cover should be revegetated to prevent erosion of the cover and surrounding materials.
6. A notice of the fill location should be placed in the property deed.

Non-inert materials may be disposed of on your own property. Contact the Department for review and approval of your engineering design and operation plan before you begin. Disposal of non-inert materials or materials that present a risk to human health, including asbestos, also require a post-closure care plan, financial assurance and an environmental covenant. All on-site disposal activities must be conducted in accordance with local (city and county) rules and ordinances.

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DEBRIS CLEANUP

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Hazardous Materials



Some containers require special handling.

Hazardous materials likely will be encountered during the cleanup phase of a disaster recovery effort. Containers and other vessels holding materials that either pose an immediate risk to cleanup crews if disturbed, or might be classified as a hazardous waste for disposal purposes, must be transported to a landfill licensed to accept the materials. These items must be safely removed, segregated, sampled and disposed of properly.

Pressurized Containers

Propane Tanks, Propane Cylinders, Gas Cylinders and Other Large Pressurized Containers

Most propane and other compressed gas-related emergencies involve small cylinders and non-bulk containers. The majority of these incidents can be handled safely and effectively by the local fire department, with some technical assistance from the local propane supplier and other gas marketers. Larger scale emergencies such as cargo tank truck rollovers, train derailments or fires involving large stationary tanks or bulk plants containing flammable materials, may require resources from a number of different agencies to resolve the problem. State and local officials coordinate information and resources among various agencies to safely and efficiently resolve the situation.

Trained first responders determine whether an incident requires aggressive leak and fire control measures designed to quickly contain or mitigate the problem, or another means of isolating the area to protect themselves and the public. Only after the incident site is stabilized and the area has been evaluated for hazards and risks should removal and recovery operations commence.

Product transfer and removal procedures vary based upon the type of container involved, container design and construction, container stress, whether an actual or potential breach, and the position and location of the container. Small containers deemed by first responders or authorized state or local officials to be in good condition, or other larger vessels in good condition due to their inherent structural strength, might be

reusable or safe for delivery to the marketer for reuse or recycling of the contents. If the situation warrants, the product contained within the pressurized vessel may be transferred and removed by propane industry responders, product specialists or container specialists who are hired as contractors by the owner or operator, while public safety responders oversee the operations and maintain overall site safety.

As a last resort, if the condition of the pressurized vessel prevents its disturbance or removal, it may become necessary to vent the gas directly into the atmosphere. This approach may be suitable for propane, for example, which dissipates quickly in open air and its dispersal can be accelerated with the use of firehoses with nozzles on fog pattern. This technique may not be suitable under certain weather conditions or for other products that pose a different hazard, such as highly toxic gases or those that might be explosive. These vessels require special handling techniques recommended by first responders in consultation with marketers and other people familiar with the hazard.

For more information regarding response actions when vessels containing propane are encountered, please consult the publication *Propane Emergencies, Third Edition* (authors Michael S. Hildebrand and Gregory G. Noll, 2007) at www.propanemarc.com/ProductDetails.asp?ProductCode=9102%2DSA%2D14 (free download).

DEBRIS CLEANUP

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Non-Pressurized Containers

55-Gallon Drums, Tote Tanks, Fuel Tanks, Cans, Buckets and Other Storage Vessels

The first concern when dealing with non-pressurized containers is to ensure protection of the first responders and the public. Extreme care is required when handling these containers. Although normally not pressurized, damage to the containers during their movement, or their placement outdoors where they are exposed to warmer temperatures, can result in pressure buildup. Pressure buildup may cause the contents to escape suddenly if caps, covers or valves are loosened.

Once determined safe for movement, the containers should be removed from the debris, segregated and eventually sampled. This is required for characterization purposes, if labels are missing, and for eventual reuse or disposal as either a solid or hazardous waste. The condition of the vessel may dictate that they be over-packed or transferred to a new container.

- ❑ If determined to be a listed or characteristic hazardous waste, as defined in 6 CCR 1007-3 Part 261 of the *Colorado Hazardous Waste Regulations* at www.colorado.gov/pacific/sites/default/files/Part-261-eff-07-15-13.pdf, the contents of the vessel must be disposed of at a permitted hazardous waste disposal facility.
- ❑ In cases where a vessel appears to be damaged to the extent that its disturbance may result in the release of its contents, efforts should be made to empty the vessel in place, putting the contents into a new container for sampling, characterization and disposal.
- ❑ During any disturbance of these containers, equipment should be on hand to control a sudden release if the containers leak or rupture as a result of physical damage to the containers.
- ❑ Any debris that is visibly contaminated from a release also should be segregated until a determination can be made as to its classification and appropriate disposal.

- ❑ Following removal of these containers of hazardous materials, the ground should be inspected for evidence of a release, as demonstrated by visible staining or odors.
- ❑ Any contaminated environmental media should be collected, containerized and disposed of along with the original contents of the vessel.
- ❑ If a release occurred, this information should immediately be reported to the Department's 24-hour Emergency Reporting Line at 1-877-518-5608. The resulting report will be routed to the appropriate agency for followup response actions, including conducting further investigations and cleanup.

Intact containers of paint and other chemicals up to 5 gallons in size known or presumed to be derived from homes may be managed as Household Hazardous Waste (HHW). The potentially hazardous materials in HHW should be transported to an approved county or municipal HHW facility for recycling, reuse or disposal. A temporary waiver, if approved, does not include similar items derived from businesses. The containers must be segregated, characterized and disposed of in accordance with their waste classification (i.e., solid or hazardous waste). (See "Household Chemicals" page 22.)

Facilities where solid and hazardous wastes may be temporarily stockpiled or stored that covered by the Department's Water Quality Control Division CDPS stormwater discharge permits and municipalities with MS4 permits must ensure practices are in accordance with the facility Stormwater Management Plan or MS4 the Colorado Department of Public Safety Stormwater Management Program, respectively.



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Emergency Livestock Disposal: Policy and Pre-Approved Design and Operations Plan

In an emergency, the Colorado Department of Public Health and Environment may authorize temporary management practices in order to protect human health and the environment. These temporary practices may include procedures for the disposal of dead animals associated with the emergency conditions. The Colorado Department of Agriculture regulates carcass disposal. If you comply with the requirements below, you will be considered to be in compliance with regulations.



Landfill and burial requirements

- ⊗ No dead animals shall be placed in any body of water or seasonal creek or pond.
- ⊗ Surface water should be diverted from the pit utilizing an upgradient diversion berm or other method.
- ⊗ All dead animals must be buried at least 150 feet down gradient from any groundwater supply source.
- ⊗ In no case should the bottom of the burial pit be closer than five feet to the groundwater table.
- ⊗ Burial sites must be located more than one mile from any the residence of any person.

Note: When burying dead livestock, it is best to add a layer of lime or quicklime below and above a carcass to accelerate the decomposition process. Overuse of lime should be avoided. If lime or quicklime is not available, burial without it is acceptable. Avoid contacting human skin with lime or quicklime, which are caustic and can cause severe burns.

Other disposal options for dead animals

- Permitted landfills that will accept them.
- Rendering plants. (Only out-of-state options exist at this time.)
- Composting. Requires approval of a separate design and operations plan.

Other best management practices

- Before burial or other disposition:
 - a. Arrange carcasses individually in rows and not on top of one another.
 - b. Locate carcasses in the shade and out of sunlight.
 - c. Keep carcasses covered with snow to keep cold.
- Avoid burial sites with fractured or cavernous bedrock, highly permeable soils or seasonal high water tables.
- Do not bury more than 10 animals together to minimize potential nuisance conditions and impacts to ground water.
- Contact your local health department or CSU Cooperative Extension Office for additional advice.

An onsite wastewater treatment system, also known as a septic system, could be adversely affected by fire, power outages, equipment failure, floods or other contamination of water supplies.

Inspecting for damage

- Damage to plastic piping above ground that may have been damaged by heat.
- Raised systems scorched or damaged by fire.
- Damage to piping where pipes enter the home or structure.
- Disturbance of the soil treatment area by large vehicles such as firefighting equipment.
- Damage to access lids/risers. Any open access to tanks or other components of the OWTS should be flagged and cordoned off so as to prevent access to the opening.
- Damage to electrical components such as control panels or junction boxes.

If the septic system is damaged, backing up or malfunctioning, discontinue use and contact the county public health or environmental health agency for guidance and instruction regarding repair and restoration of the system.



Resources from EPA

Septic Systems: What to do after a flood
water.epa.gov/drink/emereprep/flood/septicystems.cfm

Septic Smart Home
water.epa.gov/infrastructure/septic/septicsmart.cfm

Homeowner Tips for Flooded Septic Systems

1. Let it dry out

- Use as little water as possible until the system dries out.
- Don't allow wastewater to go to the septic system until the system has recovered.
 - ⊗ No baths, laundry or toilet flushing.
 - ⊗ No water with disinfectants from flood cleanup down the drain. Large quantities of disinfectant can kill the good bacteria in the septic system.
 - ⊗ Route water from roof gutters and sump pumps away from the septic system.
- Mark locations of septic tank and leachfield (drainfield) to keep traffic, even foot traffic, off the system to prevent damage and soil compaction.

2. Get help from a pro

- Turn off electric power to pumps, aeration or treatment systems.
- Have an electrical contractor or an installer trained for the system check electrical components for damage and watertightness prior to restoring power to the system.
- Pump and inspect septic tank and pump tank, if there is one. Silt, debris and other contaminants may have entered the tank.
- Inspect inlet and outlet tees or baffles for blockages caused by debris or fats and grease.

3. Wait

- ⊗ Don't pump tanks until groundwater level drops. Empty tanks, including concrete tanks, have less weight and are more buoyant. They can "porpoise" out of the ground, or move and shift.
- ⊗ Tanks pumped under high water conditions can collapse or be crushed by pressure from surrounding soil and water. If the groundwater level is part way up the side of the septic tank, it may be possible to partially pump the tank the first time.
- ⊗ Water from the soil treatment area could flow back into the tank, which would require multiple pumpings.

WASTE DISPOSAL AND RECYCLING

The following facilities may accept debris and waste materials known to contain friable asbestos. Confirm with the contact information below. Additional facilities may be added to this list at www.colorado.gov/pacific/cdphe/swfacilities.

Larimer County Landfill
5887 South Taft Hill Rd.
Fort Collins, CO 80526
Steve Harem: 970-498-5770

Republic Services Landfill, Inc.
ALLIED WASTE SYSTEMS
8480 Tower Road
Commerce City, CO 80022
Amy Hobbs: 720-490-0230
303-459-8752

Denver Arapaho Disposal Site (DADS)
WASTE MANAGEMENT OF COLORADO
3500 S. Gun Club Road
Aurora, CO 80018
Jeff Sprowls: 720-947-2114
Jason Chan: 720-876-2633
303-598-1790
Gary Baldwin: 720-977-2104
303-618-0230

Colorado Springs Landfill
WASTE MANAGEMENT OF COLORADO
13320 State Highway 94
Colorado Springs, CO 80929
Bruce Clabaugh: 303-486-6034
303-434-3776
719-382-8383

Republic Services Landfill, Inc.
ALLIED WASTE SYSTEMS
8900 Hwy 93
Golden, CO 80033
Amy Hobbs: 720-490-0230
303-459-8752

Buffalo Ridge Landfill
WASTE MANAGEMENT OF COLORADO
11655 WCR 59
Keenesburg, CO 80643
Jeff Sprowls: 720-947-2114
303-886-9693

Bill Hedberg: 1-970-686-2800, ext 23
1-970-418-8268
Gary Baldwin: 720-977-2104
303-618-0230

Southside Landfill
WASTE CONNECTIONS
5715 W. State Highway 78
Pueblo, CO 81005
Gautam Patwardham: 303-867-5506
915-274-8681

Fountain Landfill
WASTE CONNECTIONS
10,000 Squirrel Creek Rd.
Fountain, CO 80817
Ken Manzo: 719-382-9661
719-491-7944

The recycling facilities below and some landfills listed above and opposite may accept concrete and metal materials that do not contain asbestos. Use contact information below to confirm. Additional recycling facilities may be added to this list or contacted directly.

Recycled Aggregate Products
EL PASO COUNTY
1775 East Las Vegas Street
Colorado Springs, CO 80903
719 575-0785

City of Fort Collins crushing operations
LARIMER COUNTY
1380 Hoffman Mill Road
Fort Collins, CO 80524
970-482-1249

WASTE DISPOSAL AND RECYCLING

In addition to the landfills listed opposite, the following landfills may debris and waste material that do not contain friable asbestos. Confirm with the contact information below. Additional landfills may be added to this list at www.colorado.gov/pacific/cdphe/swfacilities.

Front Range Landfill
WASTE CONNECTIONS, INC.
1830 Weld County Rd. 5
Erie, CO 80516
Brian Karp: 303-673-9431
720-839-6311
Jeff Burrier: 303-673-9431
303-968-9508

North Weld Landfill
WASTE MANAGEMENT OF COLORADO
40000 Weld County Rd. 25
Ault, CO 80610
Bill Hedberg: 970-686-2800, ext 23
970-418-8268

Midway Landfill
WASTE MANAGEMENT OF COLORADO
8925 Rancho Colorado Blvd.
Fountain, CO 80817
Bruce Clabaugh: 303-486-6034
303-434-3776

Montezuma County Landfill
MONTEZUMA COUNTY
26100 Road F
Cortez, CO 81321 970-565-9858

Lake County Landfill
LAKE COUNTY
1500 County Road 6
Leadville, CO 80461
719-486-3099
Mike Irvin: 719-486-0259

Phantom Landfill
FREMONT COUNTY
County Road 67
Penrose, CO 81240
Gary Fuselier: 719-372-6671

Custer County Landfill
CUSTER COUNTY
P.O. 1488
Westcliffe, CO 81252
Rusty Christensen: 719-783-2726

The Department has a list of landfills online at www.colorado.gov/cdphe/swfacilities. Please call the landfill before transporting loads to alert the landfill that the material is coming and confirm it will accept the waste.

24/7 Emergency Environmental Issues
1-877-518-5608

SOLID WASTE RESOURCES

- Colorado Counties, Inc.: www.ccionline.org for county contact information
- State Solid Waste Program: www.colorado.gov/pacific/cdphe/solidwaste
- Solid Waste Facilities: www.colorado.gov/pacific/cdphe/swfacilities
- Solid Waste Permitters Map: www.colorado.gov/pacific/cdphe/swpermitting
- Solid Waste Inspectors Map: www.colorado.gov/pacific/cdphe/swinspection

For additional information, contact your local public health or environmental agency or the Colorado Department of Public Health and Environment's Hazardous Materials and Waste Management Division at 303-692-3300.

STAFF RESOURCES

Emergency Preparedness and Response

Lyle Moore, Resiliency Officer
Colorado Department of Public Health and Environment
303-692-2669
Lyle.Moore@state.co.us

Greg Stasinos, Deputy Director
Colorado Department of Public Health and Environment
303-692-3023
Greg.Stasinos@state.co.us

Garry DeJong, Interim Response Branch Manager
Colorado Department of Public Health and Environment
303-692-2730
Garry.DeJong@state.co.us

Agriculture

Nick Striegel
Colorado Department of Agriculture
303-239-4162
Nick.Striegel@state.co.us

Air Pollution Control -- Asbestos

Laura Shumpert, Supervisor
Colorado Department of Public Health and Environment
303-692-3102
Laura.Shumpert@state.co.us

Behavioral Health

Curt Drennen, Manager
Colorado Department of Public Health and Environment
303-691-4941 / 303-915-8115
Curt.Drennen@state.co.us

Amy Voth Siebert
Colorado Department of Public Health and Environment
303-692-2686 / 720-666-5298
Aimee.VothSiebert@state.co.us

Keith Schemper
Colorado Department of Public Health and Environment
303-692-2643 / 303-945-1204
Keith.Schemper@state.co.us

Construction, MS4 (Stormwater) and Pretreatment

Nathan Moore, Unit Manager
Colorado Department of Public Health and Environment
303-692-3555
Nathan.Moore@state.co.us

Disease Control and Environmental Epidemiology

Colorado Department of Public Health and Environment
303-692-2700
www.colorado.gov/cdphe/dceed

Drinking Water

David Dani, Coaching & Training Lead, Local Assistance Unit
Colorado Department of Public Health and Environment
303-692-3605
David.Dani@state.co.us

Tyson Ingels, Lead Drinking Water Engineer
Colorado Department of Public Health and Environment
303-692-3002
Tyson.Ingels@state.co.us

Environmental Agriculture Program

Sean Scott, Deputy Director, Environmental Health and Sustainability
Colorado Department of Public Health and Environment
303-692-3422
Sean.Scott@state.co.us

Environmental Health and Sustainability

Jeff Lawrence, Director
Colorado Department of Public Health and Environment
303-692-3639
Jeff.Lawrence@state.co.us

Hazardous Materials and Waste Management

Colorado Department of Public Health and Environment
303-692-3320 or Comments.HMWMD@state.co.us
www.colorado.gov/cdphe/hm

Solid Waste and Materials Management

Charles Johnson, Program Manager
Colorado Department of Public Health and Environment
303-692-3348
CharlesG.Johnson@state.co.us

Solid Waste Permitting

Ed Smith, Unit Leader
Colorado Department of Public Health and Environment
303-692-3386
EdwardH.Smith@state.co.us

Wastewater

David Kurz, Lead Wastewater Engineer
Colorado Department of Public Health and Environment
303-692-3552
David.Kurz@state.co.us

RESOURCES

CDC: Disasters

www.emergency.cdc.gov/disasters/
www.emergency.cdc.gov/es/disasters/ (Español)

National Center for Healthy Housing

Creating A Healthy Home: A Field Guide for Clean-up of Flooded Homes

www.nchh.org/Portals/0/Contents/Flood-CleanupGuide_screen_.pdf

CDC: Mold

www.emergency.cdc.gov/disasters/mold/

EPA: Mold

www.epa.gov/mold

FEMA

www.ready.gov
www.fema.gov

American Red Cross

www.redcross.org