

Oregon Health Services - Drinking Water Program

Drinking Water Hauling Guidelines

June, 2008

INTRODUCTION

Hauling water for drinking purposes is not regulated in the State of Oregon. The mission of the Drinking Water Program is to *assure all Oregonians safe drinking water*. The Program is solely responsible for administering both state and federal drinking water regulations, with the philosophy *to emphasize prevention activities*, which promote voluntary compliance with drinking water standards over the use of formal enforcement. These guidelines have been developed by the Drinking Water Program to help provide the "hauler" an effective means to ensure the delivery of safe drinking water.

SOURCE OF WATER

The Drinking Water Program recommends utilizing a public water system for the water supply source. The hauler should complete the following steps before utilizing the public water system:

- 1... **Contact the Drinking Water Program** at (971) 673-0405, or through their website at <http://www.oregon.gov/DHS/ph/dwp/index.shtml> and request a Compliance Status Report for the water system be sent to you. This report will indicate if the water system is current with drinking water monitoring requirements. This report will also help demonstrate to the customer that the water you're hauling is "safe" and comes from a reliable source.
- 2... **Contact the public water system** that is going to serve as your source of supply for the following reasons:
 - A... Generally, they already have a location in their distribution system set-up for supplying tanks with water.
 - B... They may require payment for the water to off-set their operating costs.
 - C... They may operate a wastewater treatment facility. If you use their wastewater collection system to dispose of an emulsifying detergent used to clean your tank, or high levels of chlorinated water used for disinfection, you may affect their treatment process.

EQUIPMENT PREPARATION

Tanks used for hauling drinking water should be of an acceptable type. The Drinking Water Program recommends using tanks previously used for ONLY hauling water or food grade materials.

The Drinking Water Program **STRONGLY** recommends **NOT** using tanks that have previously hauled **ANY FUELS** because lead and other materials in the fuels can be "absorbed" into the tank over time and leach back out into the water during transport. To use fuel tanks, they would need to be steam cleaned for a minimum of 90 minutes. Also, lead and volatile organic chemical (VOC) analysis of water that has been "standing" inside the fuel tank for a period of 24 hours would need to be completed. The results from the analysis would need to be below maximum contaminant levels (MCLs) established in the Drinking Water Program regulations.

All tanks should be visually inspected, scrubbed, flushed, and disinfected before hauling water to customers as follows:

- 1... All equipment should be visually inspected to ensure its integrity.
- 2a.. **TANKS PREVIOUSLY USED FOR HAULING WATER** should be scrubbed, flushed, and disinfected with chlorine as follows:
 - A... To ensure that water hauling equipment is adequately disinfected, all rust and sediment from the tank should be scrubbed with water containing 200 parts per million (ppm) chlorine. Chlorine bleach can be used for the scrubbing solution as follows:

200 ppm chlorine = 2.5 ounces (1/3 cup) of chlorine bleach for every 5 gallons of water used in the solution.

All hoses, pumps, and other equipment which will be in contact with the water should be disinfected in the same manner. After the tank and equipment has been scrubbed, everything should be rinsed.
 - B... After scrubbing and rinsing the tank, fill it with water containing 50 ppm chlorine for disinfection purposes. The chlorinated water should stand in the tank until you're ready to begin hauling (minimum period of 30 minutes). Chlorine bleach can be used as follows:

50 ppm chlorine = 2 quarts of chlorine bleach for every 500 gallons of water used to fill the tank.

All hoses, pumps, and other equipment which will be in contact with the water should be disinfected in the same manner.
 - C... When you are ready to begin hauling water, the chlorinated water should be drained and rinsed from the tank.
- 2b.. **TANKS USED PREVIOUSLY FOR HAULING FOOD GRADE MATERIALS** should be scrubbed, flushed, and disinfected with an emulsifying detergent and chlorine as follows:
 - A... Scrub and flush the tank and equipment with warm water.
 - B... clean with the injection of an approved (written on the manufacturer's label) emulsifying detergent until the tank and equipment are clean:
 - a... Use the amount specified on the manufacturer's label.

- b... Maintain a minimum temperature of 140 degrees.
 - c... Change the location of the nozzle to continuously keep the interior wet from top to bottom until the tank is clean.
 - C... Rinse the tank thoroughly using warm water.
 - D... Fill the tank for disinfection purposes with water containing 50 ppm chlorine (described in part 2aB) until ready for hauling (minimum period of 30 minutes). All hoses, pumps, and other equipment which will be in contact with the water should be disinfected in the same manner.
 - E... When you are ready to begin hauling water, the chlorinated water should be drained and rinsed from the tank.
- Note: The food industry has facilities for cleaning and disinfecting tanks used in hauling food grade materials. You may want to contact these facilities to make arrangements for cleaning and disinfecting your tank and equipment.
- Note: Aluminum tanks, and tanks having plastic or other types of organic coatings, may be affected by heat or alkaline materials. When these types of tanks are to be cleaned using emulsifying detergents, the manufacturer of these tanks should be contacted and their recommendations followed.

TRANSPORTATION

After everything has been inspected, scrubbed, flushed, and disinfected, your equipment should be adequately prepared for hauling water. To ensure the water being transporting is safe for drinking purposes, it should carry a "free" chlorine residual of 1 ppm before transporting. The chlorine serves to disinfect organisms which may be present in the water and can cause illness. These organisms may be introduced into the water through the handling of equipment. The following steps should be followed to make sure the water is adequately disinfected:

- 1... You should have a chlorine test kit available that is able to measure "free" chlorine residuals. These test kits are available at swimming pool and spa supply stores. The Drinking Water Program recommends using a "DPD" test kit that can measure a free chlorine residual between 0.2 milligrams per liter (mg/L) and 3.0 mg/L.

Note: One milligram per liter (mg/L) is equal to one part per million (ppm).

- 2... A majority of public water systems chlorinate their water for disinfection purposes; therefore, you should measure their water for a free chlorine residual before filling your tank. If the measured residual is between 0.5 ppm and 1.0 ppm, you have adequate disinfection for hauling. Be sure to record the date, time, and measured free chlorine residual.

- 3... If the source of water does not have a chlorine residual measured between 0.5 ppm and 1.0 ppm, disinfect the water at 1 ppm by adding chlorine bleach while filling the tank as follows:
- 1 ppm chlorine = 2.5 ounces (1/3 cup) of chlorine bleach for every 1000 gallons of water used to fill the tank.
- Once the tank is filled, check the free chlorine residual. Be sure to record the date, time, and measured free chlorine residual.
- 4... Your tank should be filled through an air gap to prevent possible backflow conditions from occurring. Once the tank is filled, it should be covered and "tightly" sealed.
- 5... All hoses utilized in the operation should be stored off the ground at all times. The hoses should be capped at both ends when they are not being used.
- 6... Haul the drinking water to the customer's location. The following steps should be followed after arriving:
- A... Measure the free chlorine residual upon arrival. Be sure to record the date, time, and measured free chlorine residual.
- B... Inspect the customer's receiving tank(s) with the customer before filling. The customer should have cleaned, disinfected, etc., the receiving tank(s) before your arrival. Comments regarding the condition of the receiving tank(s) should be documented in your records.
- 6... C... The customer's receiving tank(s) should be filled through an air gap to prevent possible backflow conditions from occurring.

REPEAT HAULING

If you haul drinking water on a day-to-day basis, you do not need to scrub, flush, and disinfect your tank and equipment between each haul. For each trip, you should repeat the guidelines described in the TRANSPORTATION section.

If you have stopped hauling drinking water for a period of several days, and have not hauled anything else, you should disinfect your tank and equipment with water containing 50 ppm chlorine before hauling again. Disinfecting with 50 ppm chlorine is described in Part 2aB of the EQUIPMENT PREPARATION section. After disinfecting the tank and equipment, you should repeat the guidelines described in the TRANSPORTATION section for day-to-day operation.

If you have stopped hauling drinking water, and have since hauled food grade materials in your tank, you should repeat everything described in the guidelines.

RECORD KEEPING

Record keeping should be done at all times. By keeping records, liability issues surrounding "disease" outbreaks at your customer's location are greatly reduced. You will also be able to provide the customer with pertinent information regarding the "safety" of the water being hauled. Records should include the following information:

- 1... Public water system utilized for the source of water. The Program's Compliance Status Report has this information and is suitable for record keeping.
- 2... Name and address (location) of customer.
- 3... Date, time, and free chlorine residual after filling the tank with water for hauling.
- 4... Date, time, and free chlorine residual after arriving at the destination.
- 5... Notes regarding the receiving tank and any other significant items.

Attached to the guidelines is a form that can be used for keeping records. Make additional copies of this form for your use.

OAR 333-150 Food Sanitation Rules

Effective Date: January 1, 2002

Revised March 2008

5-3 MOBILE WATER TANK AND MOBILE FOOD ESTABLISHMENT WATER TANK

Subparts 5-301 Materials

5-302 Design and Construction

5-303 Numbers and Capacities

5-304 Operation and Maintenance

5-305 Water System Requirements

5-301.11 Approved.

Materials, that are used in the construction of a mobile water tank, mobile food establishment water tank, and appurtenances shall be:

- (A) Safe;
- (B) Durable, corrosion-resistant, and nonabsorbent; and
- (C) Finished to have a smooth, easily cleanable surface.

5-302.11 Enclosed System, Sloped to Drain.

A mobile water tank shall be:

- (A) Enclosed from the filling inlet to the discharge outlet; and
- (B) Sloped to an outlet that allows complete drainage of the tank.

5-302.12 Inspection and Cleaning Port, Protected and Secured.

If a water tank is designed with an access port for inspection and cleaning, the opening shall be in the top of the tank and:

- (A) Flanged upward at least 13 mm (one-half inch); and
- (B) Equipped with a port cover assembly that is:
 - (1) Provided with a gasket and a device for securing the cover in place, and
 - (2) Flanged to overlap the opening and sloped to drain.

5-302.13 "V" Type Threads, Use Limitation.

A fitting with "V" type threads on a water tank inlet or outlet shall be allowed only when a hose is permanently attached.

5-302.14 Tank Vent, Protected.

If provided, a water tank vent shall terminate in a downward direction and shall be covered with:

- (A) 16 mesh to 25.4 mm (16 mesh to 1 inch) screen or equivalent when the vent is in a protected area; or
- (B) A protective filter when the vent is in an area that is not protected from windblown dirt and debris.

5-302.15 Inlet and Outlet, Sloped to Drain.

- (A) A water tank and its inlet and outlet shall be sloped to drain.
- (B) A water tank inlet shall be positioned so that it is protected from contaminants such as waste discharge, road dust, oil, or grease.

5-302.16 Hose, Construction and Identification.

A food grade hose shall be used for conveying drinking water from a water tank and shall be:

- (A) Safe;
- (B) Durable, corrosion-resistant, and nonabsorbent;
- (C) Resistant to pitting, chipping, crazing, scratching, scoring, distortion, and decomposition;
- (D) Finished with a smooth interior surface; and
- (E) Clearly and durably identified as to its use if not permanently attached.

59

5-303.11 Filter, Compressed Air.

A filter that does not pass oil or oil vapors shall be installed in the air supply line between the compressor and drinking water system when compressed air is used to pressurize the water tank system.

5-303.12 Protective Cover or Device.

A cap and keeper chain, closed cabinet, closed storage tube, or other approved protective cover or device shall be provided for a water inlet, outlet, and hose.

5-303.13 Mobile Food Establishment Tank Inlet.

A mobile food establishment's water tank inlet shall be:

- (A) 19.1 mm (three-fourths inch) in inner diameter or less; and
- (B) Provided with a hose connection of a size or type that will prevent its use for any other service.

5-304.11 System Flushing and Disinfection. *

A water tank, pump, and hoses shall be flushed and sanitized before being placed in service after construction, repair, modification, and periods of nonuse.

5-304.12 Using a Pump and Hoses, Backflow Prevention.

A person shall operate a water tank, pump, and hoses so that backflow and other contamination of the water supply are prevented.

5-304.13 Protecting Inlet, Outlet, and Hose Fitting.

If not in use, a water tank and hose inlet and outlet fitting shall be protected using a cover or device as specified under § 5-303.12.

5-304.14 Tank, Pump, and Hoses, Dedication.

(A) Except as specified in ¶ (B) of this section, a water tank, pump, and hoses used for conveying drinking water shall be used for no other purpose.

(B) Water tanks, pumps, and hoses approved for liquid foods may be used for conveying drinking water if they are cleaned and sanitized before they are used to convey water.

5-305.11 Water System Requirements.*

(A) A Class IV mobile food unit must have a potable water system under pressure. The system must be of sufficient capacity to furnish enough hot and cold water for food preparation, warewashing, and handwashing, and the requirements of these rules. This supply must consist of a minimum of five gallons of water for handwashing and 30 gallons of water for warewashing.

(B) Class II and III mobile food units must have a water supply that provides sufficient water for food preparation, handwashing, warewashing or any other requirements as set forth in these rules. If warewashing is conducted on the unit, a minimum of 30 gallons of water must be dedicated for this purpose. A minimum of five gallons of water must be provided for handwashing.

(C) Except relating to handwashing as provided for in subparagraph 5-203.11(D)(2), all mobile food units must be designed with integral potable and waste water tanks on board the unit. A mobile unit may connect to water and sewer if it is available at the operating location, however, the tanks must remain on the unit at all times. N