NWCG POTABLE WATER TANK SPECIFICATION
March 2007

Equipment Requirements

Potable water tanks shall be:

(a) Used exclusively for drinking water. Do not use containers for any non-food products. The potable water system, including filling hose and lines, pumps, tanks, and distributing pipes, shall be separate and distinct from other water systems. Do not use containers that have ever been previously used for gray water, toxic or bio-hazardous substances. (Reference: Code of Federal Regulations, Title 21, Section 129.40)

(b) Clearly and conspicuously labeled with the words “POTABLE” or “FOR DRINKING WATER USE ONLY” on both sides of the tank in lettering at least 4 inches in height. The capacity of the tank (in gallons) displayed on both sides of the tank or on both cab doors in lettering at least 2 inches in height. Name and address of Contractor shall appear on both sides of the tank or on both truck cab doors in lettering at least 2 inches in height. A seal or sticker provided by the State or local authority shall be affixed to the upper left quarter of the rear of the tank or other location if specified by the issuing agency and shall be visible at all times indicating that the tank has been inspected, certified and found to be in compliance with State requirements. If stickers are not provided by a State, a copy of the certificate or label shall be kept in the transport vehicle at all times. An annual inspection and certification of the tank by the local health authority is required. In addition, the carrier shall meet all laws and regulations for hauling on public roads. If the tank is part of the transport vehicle, then both the tank and vehicle shall meet State requirements, and the appropriate inspection and certification will be maintained for the vehicle.
If the State does not do certification, then the hiring agency will be responsible for inspecting and ensuring the tank meets the requirements.

(c) 200 gallons capacity or greater and be made of non-toxic, non-corrodible/non absorbent materials or coated with non-toxic coatings National Safety Foundation (NSF) International Standard 61 that can be adequately cleaned and sanitized. Examples are stainless steel, food contact plastics (polyethylene), and food contact epoxy coatings. Surfaces that come in contact with water shall be smooth, without pits, dents, or crimps that may hold contaminating matter and welds shall be of non-corrosive material.

Tank Construction

Tanks shall be constructed to the following requirements at a minimum and meet all State requirements for certification compliance if the State has these established:

Openings: Hatches and other openings shall be completely covered and sealed with tight fitting coverings, permanently mounted food-grade gaskets, and security locks. Water inlets and outlets shall be equipped with threaded or clamped caps, tethered to the ports with chain or cable. Inlet and outlet caps shall be in place on all fittings except when water is being discharged or loaded.

Tank vents: Vents will be designed to prevent water contamination. Tanks shall be vented by a downward facing, or otherwise protected vent opening of a sufficient size to allow air to replace water as it is discharged. This opening shall be protected by an appropriate screen as required in the state that certifies the equipment. If a State does not certify the equipment, the screen shall be made from non-toxic, non-absorbent material at a minimum.

Drain: Each potable water tank shall provide a means of drainage, be equipped with a manhole, overflow, vent, and a device for measuring depth of water. Provision shall be made to prevent entrance into the tank of any contaminating substance. No deck or sanitary drain or pipe carrying non-potable water or liquid shall be permitted to pass through the tank. A bottom drain shall be provided to facilitate complete discharge of water during sanitation procedures.

Tank Filling Mechanisms

There shall be no backflow or cross connection between potable water systems and any other systems. Pipes and fittings conveying potable water to any fixture, apparatus, or equipment shall be installed in such a way to prevent backflow. Waste pipes from any part of the potable water system, including treatment devices, discharging to a drain, shall be suitably protected against backflow. Either of the following methods may be used:

(1) An approved backflow prevention device complying with Uniform Plumbing Codes 603.3.1, 2, 3, 4, 5 and 8 such as acceptable double check valves on the direct filling connection to the tank. No connections shall be located between the tank and the check valve.
(2) Overhead filling through a hatch opening at the top of the tank; the filling spout must not be allowed to intrude into the tank further than two diameters of the filling pipe above the highest water level that is possible when the tank is filled. If an overhead filler pipe is mounted on the vehicle, when not being used for filling, this pipe shall be capped at each end with threaded or clamped caps, and tethered to the fittings at the ends of the filler pipe.

Sanitary techniques must be observed in the water transfer operation. Care must be exercised to prevent foreign materials from entering the water. Since contamination could be present on the exterior surfaces of hoses or pipes, they must never be submerged in a receiving vessel. Adequate cleaning and sanitizing procedures shall be used on hauling vehicle(s) and associated equipment at the following times:

(1) When the equipment is placed into service, or when it has been unused and stored in a sealed condition for a period of 4 weeks, or more, or after a period of 72 hours or more of non-use.
(2) When the filled or empty tank has been exposed by open or unsealed cover caps or fittings to any condition of possible contamination of the tank or contents, including contact with dust, smoke, rain, or chemical substances.
(3) When any fault or defect becomes apparent in the seals, vents, hatch doors, welds, valves, pipes, pumps, hoses or other equipment that may contaminate the water.
(4) When bacterial analysis of the water indicates presence of coliform bacteria.

Pumps

Only water transfer pumps which can be readily disassembled to demonstrate the condition of the impeller and impeller chamber shall be used. Internal pump water contact surfaces, including seals, bearing, and lubricants must be constructed from food grade materials and must be smooth, non-porous, and corrosion resistant and use acceptable food grade lubricants.

Hoses

Hoses shall have a smooth interior surface made of food-grade standard materials or materials meeting NSF International Standard 61. Pumps, hoses, fittings, valves and similar equipment shall be made of food-grade materials or materials meeting NSF International Standard 61 and shall be kept clean, disinfected and operated or handled in a manner that prevents contamination and capped or closed when not in use. Hoses shall be marked/labeled “potable water” and the use of galvanized pipes or fittings is prohibited.

The ends of all hoses shall be provided with threaded or clamped caps. Such caps shall be in place when hoses are not in use. Hoses in storage compartments must also be capped.

Operational Requirements and Bacterial Testing

Hauled water is vulnerable to increased handling, diversity of source, and variability in hauling equipment. All hauling equipment must be clean and in good condition. In addition, all water-contact surfaces in hauling and storage facilities shall be disinfected prior to use.

All equipment surfaces intended for potable water contact, including source fill point equipment, containers, caps, tanks, hoses, valves, and fittings shall be inspected, washed, rinsed, sanitized, and replaced as often as necessary to effect and maintain sanitation of such surfaces. Procedures to be used are listed in Title 21, Code of Federal Regulations, and Part 129.80. Disinfection needs to occur before being put in service after a period of 72 hours or more of non-use or after any food product has been hauled. Follow applicable State specifications/guidelines for disinfection of tanks either where the equipment was certified or to the standards where the equipment is going to be used if crossing state boundaries. When no applicable State specifications/guidelines for disinfection of tanks exist, at a minimum, the tank shall be thoroughly cleaned and disinfected. After 24 hours contact time with the disinfecting solution, the tank shall be drained and flushed with drinking water. Written procedures for equipment cleaning and sanitizing shall be maintained by the Contractor and shall be kept with the hauling vehicle at all times. These procedures shall include the names, amounts, and contact times of cleaning and sanitizing agents to be used. The frequency of equipment cleaning and sanitizing must be tracked in a log to be kept with the vehicle at all times. A copy of the Contractor's equipment cleaning and sanitizing procedures log shall be provided to the Contracting Officer or designated Government Representative upon request.

At a minimum or when required by the local jurisdiction or State Law one microbiological test for total coliform shall be performed within 2 established business days of the time of arrival at the incident at a certified laboratory. Sampling by the contractor must be performed to industry standards and to the standards required by the designated laboratory. The sample to be tested shall be obtained at the time of arrival at the incident. Where State-specific requirements have not been established, laboratory coliform test data must show that the water contains coliforms of less than 2.2 Most Probable Numbers (MPN)/100 ml (or "absence" if the presence/absence test is used). In addition, a test shall be performed on the first water load following any of the required sanitation procedures, whenever switching to a different water source and/or at least once every 30 days during months when water hauling is performed, and/or whenever such analysis is requested by state or local health authorities or Government representative. If the presence/absence (P&A) test for the coliform analysis is used, then only negative (absence) results are acceptable. If a sample tests positive (presence), the Contractor shall take out of service, investigate the cause of the problem; take corrective actions; resample/test the water; and notify the Incident Commander or designated Government Representative at the Incident. If the test data shows that the water contains more than 2.2 MPN/100 ml, the Contractor shall immediately take out of service; investigate the cause of the problem; take corrective actions; resample/test the water; and notify the Incident Commander or designated Government Representative at the Incident. The Contractor shall not haul water until the test shows that the water contains total coliform of less than 2.2 MPN/100 ml. Copies of the results of such tests shall be submitted to the Contracting Officer at the address indicated on the agreement or contract within seven calendar days after the end of the incident assignment. Test results shall clearly identify Contractor's name, address, and contract or agreement number on the report. Original laboratory test results shall be maintained by the Contractor and kept for at least 2 years pursuant to Title 21, Code of Federal Regulations, and Part 129.80. Failure to comply with this requirement may result in the immediate cancellation or suspension of the Emergency Equipment Rental Agreement or contract for the current year. The Incident commander or designated Government Representative at the Incident with concurrence of the Contracting Officer will determine if/when the Contractor will be available for service.

Tank shall arrive empty for inspection.

Chlorine Residual: Contractors shall maintain a free chlorine residual level of 0.2 parts per million (ppm) up to 1.0 ppm at all times (1/3 cup of bleach that meets NSF standards to 1000 gallons water may achieve 1.0 ppm chlorine residual level). When residual levels drop below required levels the load shall be dumped and tank refilled.

Contractors shall have chlorine residual test kits available at all times and test for free chlorine residual levels when:

(1) Loading drinking water for transport,
(2) After adding any disinfectant, if the addition of disinfectant is necessary;
(3) When unloading; and
(4) Every 24 hours the water is in use (provide with daily use documentation).

Maintain records of activities on board the vehicle showing water source location, dates, and times of loading, unloading, chlorine residual test results, cleaning/sanitizing, and other operational items as deemed necessary. Copies of bacterial analysis test results and all agreements, contracts, licenses, etc. shall be maintained on board the vehicle at all times. Contractor will provide copies of these records to the Incident Commander or designated Government Representative.

Failure of the contractor to perform the required testing at the times specified is grounds for immediate termination of an agreement/contract.

Water Sources

The host incident unit will designate the water source.
Use only potable water from a permitted private or public (municipal or community system) drinking water supply. Filling must be accomplished using acceptable source water under pressure. Drafting of surface water is not allowed under any circumstances. The cost, if any, will be paid by the Government directly or by reimbursement to the potable water truck contractor. A copy of the billing statement from the owner of the water source to the contractor must be submitted to the Government if a contractor requests reimbursement.

Government or Contracting Agency Testing

The Government or contracting agency may, at its option, perform random testing. The contractor shall provide reasonable access to all potable water tanks and apparatuses to the Government or contracting agency.