

TITLE 179 PUBLIC WATER SYSTEMS

CHAPTER 21 OPERATION AND MAINTENANCE OF TRANSIENT NON-COMMUNITY  
PUBLIC WATER SYSTEMS

21-001 SCOPE AND AUTHORITY: These regulations establish minimum requirements for the operation and maintenance of existing transient non-community (TNC) public water systems. The authority is found in Neb. Rev. Stat. §§ 71-5301 to 71-5313.

21-002 COMPLIANCE DATE: These regulations are effective for the purpose of compliance beginning May 1, 2004. Until that date, operation and maintenance requirements for public water systems are found in 179 NAC 2-008.

21-003 DEFINITIONS

Department means the Department of Health and Human Services Regulation and Licensure.

Director means the Director of Regulation and Licensure or his/her authorized representative.

Encroachment means a potential source of contamination located less than a specified minimum horizontal separation distance from a public water supply source or any other likely hazards to the safety of the drinking water quality, pressure, or economies delivered by the system. Examples applicable to transient water systems include but are not limited to those potential sources of contamination and minimum horizontal separation distances identified in 178 NAC 12-003.01B.

21-004 GENERAL OPERATING REQUIREMENTS: All transient public water systems must:

1. Be operated and supervised by competent personnel possessing a minimum Grade V certificate of competency issued by the Director.
2. Assure an adequate supply of safe drinking water on a continuous basis during periods of operation.
3. Notify the Director of any situation with the water system which presents or may present an imminent and substantial hazard to health;
4. Maintain an emergency contact list that includes a list of individuals who may be called for help in times of disaster, their titles and their phone numbers. This list must be updated annually with a copy sent to the Department.

5. Ensure that there are no unprotected physical connections between the public water system and any pipes, pumps, hydrants, tanks, steam condensate returns, engine jackets, heat exchangers, or other system components whereby potentially unsafe water or contaminating materials may be discharged or drawn into the public water system unless first approved by the public water system and then by the Director.

21-005 GENERAL MAINTENANCE: All transient public water systems must adopt and carry out a preventive maintenance program incorporating the following elements:

1. Secure all water system facilities in a manner that protects the supply from contamination and prevents unauthorized entry and vandalism.
2. Inspection, servicing, replacement, and record keeping of all mechanical equipment in accordance with manufacturer's recommendations for such maintenance. An operation and maintenance manual must be maintained and updated when facility equipment changes occur. The operation and maintenance manual must include specification of equipment and recommended maintenance practices of that equipment as specified by the manufacturers.
3. Prevention of rust and corrosion by application of paint, protective coatings, or cathodic protection or other treatment capable of prolonging the useful life of the system.
4. Take all available action as necessary to protect the system and its components from encroachments which are likely hazards to the safety of the drinking water quality, or which could have a substantial impact on the system pressure or economies delivered by the system. Such action includes the adoption of ordinances, regulations, contracts, or other enforceable instruments necessary to ensure adequate protection from encroachments.

21-006 WELLS AND PUMPING FACILITIES: All transient public water systems must:

1. Maintain a sanitary seal on each wellhead.
2. Seal cracks and crevices to prevent entry of vermin, flooding, or other contaminants.
3. Maintain well casing vents, and where applicable, air release/vacuum relief valves, in a down-turned position and screened with corrosion resistant materials which have openings no larger than 24 mesh.

21-007 DISTRIBUTION SYSTEMS: All transient public water systems must operate to maintain a minimum positive pressure of 20 psi throughout the distribution system except under extraordinary conditions such as unusual peak fire flow demand or major distribution system breaks.

21-008 POTABLE WATER STORAGE FACILITIES: All transient public water systems must:

1. Inspect, and clean if necessary, water storage facilities equipped for accessibility, no less than once every five years.

2. Secure the storage facility by use of locks on access manholes and hatches, and take other necessary precautions to prevent trespassing, vandalism, and sabotage.
3. Where applicable, provide and maintain corrosion resistant screen of an effective mesh size on water storage structure vents. Screen mesh size must be proper for the vent design. Replace when necessary with in-kind screen.
4. Where applicable, maintain water tightness as designed, of walls, floor, and roof to prevent the entrance of nonpotable water, birds, and other contaminant sources.
5. Where applicable, provide and maintain a corrosion resistant screen of effective mesh size and/or a self-closing flap valve installed near or at the termination of all overflow lines on water storage structures. Screen mesh size and flap valves must be proper for the overflow line design. Replace when necessary with in-kind screen and/or flap valve. The termination point of the overflow lines must be maintained so that overflow discharge does not create, or contribute to, an erosion problem.

**21-009 TREATMENT:** Transient public water systems that use ion exchange softeners are not subject to the following requirements. All other transient public water systems that use a process for removal of a primary or secondary contaminant, or apply chemicals for the purpose of conditioning, continuous disinfection, or adjustment of drinking water must do the following:

1. Maintain and record accurate measurement of chemical use no less often than five days per week.
2. Provide an ammonia solution for use in detecting chlorine leaks when gas chlorination is used,.
3. Store chemicals in accordance with manufacturer's recommendations for chemical compatibility.
4. Maintain color coding in accordance with the following color scheme, or utilize other identification to easily differentiate between pipes.

**Water Lines**

Raw	Olive Green
Settled or Clarified	Aqua
Finished or Potable	Dark Blue

**Chemical Lines**

Alum or Primary Coagulant	Orange
Ammonia	White
Carbon Slurry	Black
Caustic	Yellow with green band
Chlorine (gas and solution)	Yellow
Fluoride	Light blue with red band
Lime Slurry	Light green
Ozone	Yellow with orange band
Phosphate Compounds	Light green with red band

Polymers or Coagulant Aids	Orange with green band
Potassium Permanganate	Violet
Soda Ash	Light green with orange band
Sulfuric Acid	Yellow with red band
Sulfur Dioxide	Light green with yellow band

**Waste Lines**

Backwash Waste	Light brown
Sludge	Dark brown
Sewer (sanitary or other)	Dark gray

**Other**

Compressed Air	Dark green
Gas	Red
Other Lines	Light gray

5. Where applicable, maintain operational records and filtration log used in conjunction with treatment processes used for removal or inactivation of regulated contaminants for a minimum of five years.
6. If disinfecting, provide approved methodology equipment for accurate measurement of disinfectant residual.
7. When treating to remove or inactivate regulated contaminants, provide proper test equipment to determine process control changes.
8. For systems that are required to disinfect on a continuous basis and have treatment facilities that are not staffed 24 hours per day, the system must provide a means by which a disinfectant is applied accurately on a continuous basis. This does not apply to systems under an Administrative Order that require chlorination for only six months.
9. Record accurate measurement of gallons of water pumped per minute (gpm) and the total time pumped or total gallons pumped of each treatment plant not less than once per week.
10. Provide functional operational controls for each filter used in conjunction with treatment processes consisting of removal of regulated contaminants.

**21-010 RECORDS**

1. All transient public water systems must maintain the following records where applicable, for a minimum of five years:
  - a. Written public health-oriented customer complaints related to water quality, quantity, pressure and system integrity.
  - b. Water main repair and replacement records, including results of special samples collected for microbiological water quality analysis, and disinfection method associated with repair and replacement.

EFFECTIVE DATE  
MARCH 22, 2004

NEBRASKA HEALTH AND HUMAN SERVICES  
REGULATION AND LICENSURE

179 NAC 21

- c. Chemical use, where applicable.
  - d. Records of process control test results, test equipment quality assurance, and quality control.
2. Where applicable, all transient public water systems must maintain records pertaining to cleaning, inspection, repair, and protective coatings on water storage facilities for a minimum of 10 years.