

**TITLE 252. DEPARTMENT OF ENVIRONMENTAL QUALITY
CHAPTER 631. PUBLIC WATER SUPPLY OPERATION**

SUBCHAPTER 1. INTRODUCTION

252:631-1-1. Purpose

(a) This chapter sets the operation standards for Public Water Supply systems so they may provide safe drinking water. This Chapter is analogous to the federal PWS program. Other rules may govern Public Water Supply system operations, such as the Discharge Regulations (OAC 252:606), ~~Laboratory Certification OAC (252:300)~~, Laboratory Accreditation (OAC 252:301), Minor Public Water Supply Systems (OAC 252:624), Public Water Supply Construction Standards (OAC 252:626) and Operator Certification (OAC 252:710). This Chapter implements the "Oklahoma Water Supply Systems Act" at Title 27A, § 2-6-301 and following.

(b) This chapter applies to any person or entity, including any federal facility, that operates a Public Water Supply system in Oklahoma, except for minor public water supply systems, which are regulated in OAC 252:624.

252:631-1-2. Definitions

In addition to terms defined in Title 27A of the Oklahoma Statutes, the following words or terms, when used in this Chapter, shall have the following meaning unless the context clearly indicates otherwise:

"**Accredited laboratory**" means a laboratory accredited through the DEQ laboratory accreditation program.

"**AWWA**" means the American Water Works Association.

"**Direct Integrity Test**" means a physical test applied to a membrane unit in order to identify and isolate integrity breaches.

"**DEQ**" means the Oklahoma Department of Environmental Quality.

"**Disinfection**" means a process that inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

"**EPA**" means the Environmental Protection Agency.

"**Groundwater under the direct influence of surface water**" means any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia Lamblia* or *Cryptosporidium*, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH that closely correlate to climatological or surface water conditions.

"**Indirect Integrity Monitoring**" means monitoring some aspect of membrane filtrate water quality that is indicative of the removal of particulate matter.

"**Laboratory checks**" means chemical, radiochemical, physical, bacteriological, and microbiological tests made in a laboratory approved by the DEQ, on water samples submitted to confirm the quality of the water.

"**Maximum contaminant level (MCL)**" means the maximum permissible level of a contaminant in a Public Water Supply system that has been determined to be necessary to safeguard the public health as specified in these regulations. ~~MCL are the same as primary drinking water standards.~~

"**Maximum residual disinfectant level (MRDL)**" means the level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. ~~Compliance with the MRDL will be determined using the disinfectant concentration measured at the time Total Coliform Rule (TCR) samples are~~

collected.

"**OAC**" means Oklahoma Administrative Code.

"**Operating records and reports**" means the daily record of data connected with the operation of the system compiled in a monthly report.

"**OWRB**" means the Oklahoma Water Resources Board.

"**Point of connection (POC)**" means the point at which a consecutive system receives water from the wholesale system. This is not the same as a "point of entry."

"**Point of entry (POE)**" means the point at which a source or combination of sources enters the distribution system.

"**Primary Drinking Water Standards**" means ~~the same as the MCL~~ maximum levels of contaminants as listed in 40 CFR Part 141 which are limited in drinking water in order to protect public health.

"**Protected groundwater free of sanitary defects**" means a ground water source that is properly designed and permitted, practices full-time chlorination, and is properly operated and maintained as evidenced by no critical deficiencies on inspections.

"**Public Water Supply (PWS) system**" means a system, ~~whether publicly or privately owned, which supplies water under pressure for the provision to the public of water for human consumption~~ through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least sixty days per year, whether receiving payment for same or not. Multi-family dwellings, which are constructed, inspected, and maintained under State Health Department-approved plumbing code, purchase water from a permitted water system, do not provide treatment, and do not resell water, are not classified as a Public Water Supply system. The following are the categories of Public Water Supply systems:

(A) "**Community water system**" means any PWS system ~~that~~ which serves at least ~~fifteen (15)~~ service connections used by year-round residents or regularly serves at least ~~twenty five (25)~~ year-round residents.

(B) "**Non-community water system**" means any PWS system ~~that~~ which serves an average of at least ~~twenty five (25)~~ individuals at least ~~sixty (60)~~ days per year but is neither a community water system nor a non-transient non-community water system.

(C) "**Non-transient non-community (NTNC) water system**" means any PWS system that is not a community water system and that regularly serves at least ~~twenty five (25)~~ of the same persons over ~~six 6~~ months per year.

(D) "**Minor water system**" means ~~any other PWS~~ a water system not included in (A), (B), or (C) of this definition. ~~These water systems may be state licensed facilities or non-licensed facilities and are regulated in OAC 252:624.~~

"**Residual disinfectant concentration**" means the concentration of disinfectant measured in milligrams per liter (mg/l) in a representative sample of water.

"**Secondary standard**" means a non-mandatory guideline that has been determined to be desirable to provide acceptable drinking water.

"**Slow sand filtration**" means a process involving passage of raw water through a bed of sand at low velocity (generally less than 50 gallons/sq.ft./day) resulting in substantial particulate removal by physical and biological mechanisms.

"**Source**" means any lake, stream, spring or groundwater supply that is used as treated or untreated water for a PWS system.

"**Total coliform positive sample**" means a sample in which one or more coliform organisms are found.

"**Treatment technique**" means the practice of a PWS system to properly remove pathogens

and total organic carbon.

"Turbidity" means the amount of suspended material in water as measured by Nephelometric Turbidity Units (NTU).

"Water Treatment" means the act of removing contaminants from source water or adjusting water quality by the addition of chemicals, filtration, and other processes, thereby making the water safe for human consumption.

252:631-1-3. Adoption of U.S. EPA regulations by reference

The provisions of Parts 141, "National Primary Drinking Water Regulations," and 143, "National Secondary Drinking Water Regulations," of Title 40 of the Code of Federal Regulations (CFR) as published on July 1, 2014⁵, and the requirements contained therein are, unless otherwise specified, adopted and incorporated by reference.

SUBCHAPTER 3. OPERATIONS

252:631-3-1. PWS criteria

(a) All systems must properly operate, in accordance with a Operations and Maintenance manual as required by OAC 252:626-3-7. All systems must maintain each unit to provide treatment of the water in accordance with the DEQ approved plans and specifications, in accordance with the purpose for which the units were designed and according to the terms of their permits. Permits may contain more stringent provisions than contained in the rules to meet the requirements of the provisions of 40 CFR adopted by reference in this chapter. Employees must be trained in the proper operation and maintenance of the system.

(b) Public water supply systems must comply with all applicable Primary Drinking Water Standards in 40 CFR Part 141, which includes, but is not limited to, the following:

- (1) Microbiological standards in 40 CFR Section 141.63 and Subparts S and Y;
- (2) Inorganic chemicals standards in 40 CFR Section 141.62;
- (3) Organic chemical standards in 40 CFR Section 141.61;
- (4) Disinfectant byproduct standards in 40 CFR Section 141.64;
- (5) Radiochemical standards in 40 CFR Section 141.66;
- (6) ~~Turbidity~~ Filtration, disinfection and enhanced treatment standards in 40 CFR Sections 141.73, 141.173, ~~and 141.550-553~~ and Subparts T and W; ~~and~~
- (7) Residual disinfectant level standards in 40 CFR Section 141.65; ~~and~~
- (8) Lead, copper, and corrosivity standards in 40 CFR Part 141, Subpart I.

(c) Public water supply systems must comply with all applicable monitoring and analytical requirements in 40 CFR Part 141, which includes, but is not limited to, the following:

- (1) ~~Coliform~~ Microbiological requirements in 40 CFR Section ~~141.21~~ 141, Subparts S and Y;
- (2) Turbidity requirements in 40 CFR Section 141.22;
- (3) Inorganic chemicals requirements in 40 CFR Section 141.23;
- (4) Organic chemical requirements in 40 CFR Section 141.24;
- (5) Radiochemical requirements in 40 CFR Section 141.25 and Section 141.26;
- (6) Lead and copper requirements in 40 CFR Section 141, Subpart I;
- (7) Sodium requirements in 40 CFR Section 141.41;
- (8) Corrosivity requirements in 40 CFR Section 141.42;
- (9) Filtration, and disinfectant disinfection, and enhanced treatment requirements in 40 CFR Sections 141.74, 141.174, and ~~141.560-141.562~~ Subparts T and W; and
- (10) Disinfectant residuals and disinfectant by-product requirements in 40 CFR, Part 141,

Subparts C, H, ~~and L~~, U and V.

(d) Systems, which operate on an intermittent or seasonal basis, shall submit bacteriological samples on two consecutive days prior to placing the system into operation. The system can be placed into operation only after the samples are shown to be safe.

252:631-3-2. Laboratory accreditation

~~Compliance analyses for coliform, inorganics, organics, radioactivity and corrosivity contaminants must be performed in a laboratory accredited by the DEQ. An accredited lab must transmit the analyses to the DEQ in an electronic form acceptable to the DEQ, no later than the first ten (10) days following the month in which the result is received or the first ten (10) days following the end of the required monitoring period. Testing required for compliance with turbidity treatment technique, disinfectant residual, temperature and pH requirements may be performed by a laboratory operator certified by the DEQ. Process control tests may be performed by a laboratory operator certified by the DEQ.~~

(a) **Analytical testing.** Compliance samples for microbiological, inorganic, organic and radioactive contaminants as well as corrosivity must be analyzed by a laboratory accredited by the DEQ. Testing required for compliance with alkalinity, calcium, conductivity, disinfectant residual, orthophosphate, pH, silica, temperature and turbidity may be performed by a laboratory operator certified by the DEQ.

(b) **Laboratory reporting requirements.** An accredited laboratory must transmit analytical results to DEQ as follows:

(1) **Electronic reporting.** Analytical results must be transmitted to DEQ in an electronic format acceptable to DEQ no later than 10 days after the month or required monitoring period in which the sample was collected.

(2) **Emergency notification.** All *E. coli* positive sample results, and all follow up samples for *E. coli* positive sample results, must be reported to designated DEQ personnel immediately by phone and electronically in a format acceptable to DEQ.

252:631-3-4. Validation of data

Notwithstanding other provisions of this Chapter, samples that are not properly collected or submitted, not collected by trained and authorized personnel, not analyzed in an accredited laboratory, or samples that do not represent the distribution system must not be used to determine compliance with these regulations. ~~Total coliform positive samples, which are due to improper analysis, domestic or other non-distribution plumbing problems, or due to circumstances or conditions that do not reflect water quality in the distribution system must not be counted toward meeting minimum monitoring requirements. The DEQ must document the determination that there are circumstances or conditions that do not reflect water quality in the distribution system. A sample that produces a turbid culture in the absence of gas production, produces a turbid culture in the absence of an acid reaction, exhibits confluent growth, or produces colonies too numerous to count must be invalidated and replaced with another sample within twenty four (24) hours of notification by the state.~~

252:631-3-10. Process control tests

Control tests must be performed in accordance with procedures approved by the DEQ.

(1) Surface water, groundwater under the direct influence of surface water, and springs.

(A) Systems that use coagulation, settling, softening or filtration must do the following chemical control tests on the filtered water twice a day, record the results on a report form provided or approved by the DEQ, and submit the form to the DEQ Water Quality Division each month, with

a copy to the local DEQ representative:

- (i) Alkalinity - Phenolphthalein (P);
 - (ii) Alkalinity - Total;
 - (iii) Hardness (where softening is used);
 - (iv) pH value; and
 - (v) Stability to calcium carbonate (once per day);
- (B) Perform jar tests as needed to determine the optimum coagulant dosages for plant control and operation to meet turbidity requirements.

(C) Turbidity and residual disinfection samples must be collected and analyzed in accordance with 40 CFR Part 141, Subparts H, ~~and P, T and W~~.

(D) Systems that use membrane filtration shall perform direct integrity testing and indirect integrity monitoring in accordance with 40 CFR Part 141.719(b)(3) and (4).

(2) **Groundwater supplies.** The following tests are required for public water supply systems utilizing groundwater as a source. Test results must be listed as indicated on the appropriate forms and submitted to DEQ:

(A) For all public water supply systems that practice chlorination, the chlorine residual shall be tested and recorded once daily at the POE;

(B) For community and NTNC public water supply systems:

- (i) Static level and pumping level of each well must be determined quarterly;
- (ii) Alkalinity, pH, and stability must be determined at least monthly for community systems and at least quarterly for non-transient non-community water systems;
- (iii) Where ion-exchange softening is provided, determine the hardness of the finished water once a day; and

(iv) Where nanofiltration, reverse osmosis or electro dialysis is provided, perform the following chemical control tests on the treated water once a day:

- (I) Alkalinity – Phenolphthalein (P),
- (II) Alkalinity – Total,
- (III) Hardness,
- (IV) pH value, and

(3) **Purchase water systems.** Purchase water systems that are required to maintain a disinfection residual shall monitor the disinfectant residual in the distribution system as follows:

(A) Those serving a population of 1,500 or less shall monitor the disinfectant residual at representative locations in the distribution system at least once every seven days;

(B) Those serving a population of 1,501 to 20,000 shall monitor the disinfectant residual at representative locations in the distribution system at least three times a week on non-consecutive days; or

(C) Those serving a population of greater than 20,000 shall monitor the disinfectant residual at representative locations in the distribution system at least five times a week.

(4) **Special tests.**

(A) Systems that remove iron or manganese must test the raw and finished water weekly for those metals.

(B) Systems that treat or blend for the reduction in concentration of regulated contaminants must monitor the raw and finished water for those contaminants daily in addition to collecting compliance samples.

(C) Threshold odor and other tests may be required by the DEQ based on local conditions.

(D) Systems that treat or blend for the reduction in concentration of nitrates must test the raw and finished water at least once a day for nitrates.

(E) Systems that apply phosphate chemicals in the treatment process must test the finished water

at least once a day for phosphates.

(5) **Fluoridation.** Where fluoridation is practiced, the system must:

(A) analyze the water twice a day for fluoride content, both before and after fluoridation;

(B) forward a copy of the analytical report (ODH form No. 561/DEQ form No. 631-001) to the DEQ monthly and keep a copy at the plant (ODH also requires a copy); and

(C) submit a sample of treated water to the DEQ State Environmental Laboratory, or to a DEQ-accredited laboratory, for analysis of fluoride content every month.

(6) **Sampling disinfectants in distribution system.** The following control tests shall be performed in the distribution system for all systems that disinfect. Sampling points shall be changed regularly so the system is sampled completely at least once each week or in accordance with a sampling plan approved by DEQ.

(A) **Chlorine.** Systems that use chlorine shall test for free chlorine and total chlorine residual twice a day in the distribution system.

(B) **Chloramines.** Systems that use chloramines shall test for total chlorine residual twice a day in the distribution system. See 252:631-3-3(d) for the requirements for Heterotrophic Plate Counts.

(C) **Other disinfectants.** Systems that use ozone or chlorine dioxide shall perform process control tests in accordance with 40 CFR Section 141.132.