

OREGON OCCUPATIONAL SAFETY AND HEALTH DIVISION
DEPARTMENT OF CONSUMER AND BUSINESS SERVICES

PROGRAM DIRECTIVE

Program Directive: A-237

Issued: April 10, 2000

Revised: April 15, 2019

- Subject:** Evaluation of compliance with workplace water quality standards
- Referenced Codes:** Oregon OSHA’s administrative rules that require water used for drinking and washing in workplaces to be potable.
- Division 4/J Work Environment:
[OAR 437-004-1105 \(3\)\(a\) Sanitation](#)
[OAR 437-004-1110 \(5\) &\(7\) Field Sanitation for Hand Labor Work](#)
[OAR 437-004-1120 \(7\) Agricultural Labor Housing and Related Facilities](#)
- Division 2/J General Environmental Controls, [1910.141 Sanitation \(b\)\(1\)\(i\)](#)
- Division 3/D Occupational Health and Environmental Controls,
[1926.51 Sanitation \(a\)\(1\)](#)
- Division 7/C Planning, First Aid and Work Conditions,
[OAR 437-007-0245 \(3\) Field Sanitation For Reforestation Activities](#)
- Purpose:** This directive establishes field procedures for Oregon OSHA staff who evaluate employers’ compliance with these rule requirements. The [Drinking Water Services of the Oregon Health Authority](#) (OHA-DWS) sets state standards for safe public drinking water sources such as public water systems. Our rules reference these standards as a benchmark for all sources of water used in workplaces and labor housing, including public and private water systems, and private wells.
- Background:** Oregon OSHA has rules requiring safe water to be provided in all workplaces including those in agriculture, general industry, construction and forest activities. Although agricultural field sanitation and labor housing are the predominant areas of concern, this directive provides instructions for consistent and uniform assessment of all workplace water quality standards.
- Scope:** This directive applies to all Oregon OSHA.

Appendices to this PD:

- A: Proper Sampling Techniques
- B: Summary of Citation Guidelines for Workplace Water Quality Issues
- C: Sample Hazard Letter
- D: Oregon OSHA Contracts with Water Sampling Labs
- E: Links to Additional Information

Action: The following definitions, procedures and citation guidance will be used to evaluate compliance with the requirements for potable water in workplaces:

A. Definition

1. **Potable water** is defined in OAR Chapter 333, Division 61, Public Water Systems, of the Oregon Health Authority Drinking Water Services (OHA-DWS.) at OAR 333-61-020 (164) as “safe drinking water” meaning “water which has sufficiently low concentrations of microbiological, inorganic chemical, organic chemical, radiological, or physical substances so that individuals drinking such water at normal levels of consumption, will not be exposed to disease organisms or other substances that may produce harmful physiological effects.” Whether from public or private sources, workplace water meeting this standard is considered potable for the purposes of the OSHA standards.
2. **Public water system** means a system for the provision to the public of piped water for human consumption, if the system has four or more service connections or supplies water to a public or commercial establishment which operates a total of at least 60 days per year, and is used by 10 or more individuals per day. A public water system is either a “community water system,” a “transient non-community water system,” a “non-transient non-community water system” or a “State Regulated water system.” [OAR 333-061-0020(153)]

B. Procedures for evaluating potable water in workplaces

Water used in workplaces may be obtained from public water systems, private water systems, individual wells, or other sources.

1. **Public water systems**
Public water systems are required to be maintained and tested regularly by a local water district or water system owner. In those cases, compliance-related sampling of the water supply is not necessary unless specific circumstances indicate some defect is

present. Examples include poorly maintained system components, evidence of cross connections, potential for backflow, or reports of illness related to waterborne-contamination among employees or housing occupants. If indicated, check the public water system's OHA-DWS compliance history by looking up the by name or ID# at yourwater.oregon.gov. If a potential problem is identified, a report can be made to the regulating agency identified for the system on [this website](#) or to OHA-DWS at 971-673-0405.

2. Private water supplies

Where private water systems, wells or springs provide the drinking and washing water for employees or for labor housing occupants, compliance officers will use the following guidelines to determine if sampling for compliance is appropriate:

If the source is a well, document any deficient conditions or sanitary defects of the wellhead, such as:

- Does it terminate below soil grade?
- Does it have unprotected openings or lack a proper seal?
- Does surface water drain towards the wellhead?
- Was the wellhead improperly sited or constructed?

For instance:

- Is it at least 100 feet from any drain field or sewage disposal?
- Are any other sources of contamination apparent?

This documentation will help to support any alleged violations where contamination has been confirmed through water sampling. If there is concern about the condition of a private water supply, consult with your manager to determine if a referral to the local health department is appropriate.

Determine the pattern of use of the well as a separate issue from seasonal occupancy of the site. If a well is used only during a specific season, water lines should be disinfected, flushed thoroughly, and tested prior to use to ensure that the water is safe. Operators of labor housing used seasonally must ensure their water supply is potable through bacteriological analysis prior to opening the housing. For housing occupied year-round, annual water sampling may be indicated based on deficiencies in the observed conditions such as those listed in (B)(2) above.

3. Conduct water sampling on a well or spring if indicated, carefully following the protocols described in appendices at the end of this PD.

The sample must be analyzed using a certified water testing laboratory and method. The methods test for both total coliform and *E. coli* bacteria, and results can be read in 18 to 24 hours. Water samples must be analyzed within 30 hours of being drawn to obtain reliable results.

Make note of whether or not the water being sampled has been chlorinated. Compliance officers will not measure chlorine levels in chlorinated water systems or supplies.

Oregon OSHA staff must follow the guidelines outlined in the appendices at the end of this PD. Sample bottles are typically obtained directly from the state-certified water testing lab. Samples will be submitted directly to the laboratory for bacteriological analysis.

4. **To raise awareness** about the potential hazards of arsenic and nitrates in drinking water, Oregon OSHA will routinely sample well or spring-supplied water for these contaminants when on an inspection at agricultural labor housing facilities or in the field. See the appendices at the end of this PD for typical sampling techniques. While this testing is not required by the rules, we will share information obtained from our testing with the employer along with current recommendations from the Oregon Health Authority's Public Health Drinking Water Services (see Appendix C for an example hazard letter).

C. Procedures for evaluating transportable water containers

Any of the following practices or conditions related to transportable water containers are considered to be unsanitary and unsafe and are prohibited:

1. Using common drinking cups or dipping utensils.
2. Using containers made of permeable or toxic materials that could contaminate the water.
3. Containers are *not* washed with soap and water and sanitized at least every seven days.

If you want to document unsanitary or unsafe water conditions, and water sampling is indicated, collect one water sample directly from the transportable container without flushing the spigot. This will preserve limited water resources and reflect field-use conditions of the water supply. (To support an alleged violation of drinking water sanitation standards, the source of that water must also be evaluated, and sampled, to determine if it is a source of contamination.) Have the samples analyzed as indicated in section (B)(3), above.

An unsanitary container should be immediately cleaned and disinfected by the employer, if possible. Cleaning and disinfecting containers includes washing with soap and water and rinsing with an appropriate sanitizing agent at least once every seven days. Dusty or dirty workplaces or poor personal hygiene practices by people providing or using the water container, or the practice of filling containers using hoses that are left on the ground are examples of conditions that may make more frequent or more thorough sanitation procedures necessary. Sampling results from the source water supply would determine if it also contributes to the water quality problem.

Oregon OSHA will not conduct sampling on individual-sized, commercially-available, bottled water if provided by an employer for employees to drink. The employer's responsibility is to provide enough potable drinking water considering the environmental conditions encountered by workers. For example, hot or humid weather conditions would generally require employees to have more water available to drink to avoid heat-related illness. Also, if work is conducted away from areas where plumbed, potable water is available and water will be required for hand washing or other required decontamination, sufficient potable water must also be provided by the employer for those purposes.

D. Citation guidelines

(See guidelines in *Appendix B*.) This directive relies on the presence or absence of coliforms rather than the number of colony-forming units per milliliter (CFU/ml). If requested, the water lab will typically notify the compliance officer submitting the water sample of test results if the presence of coliforms is found. When positive results are reported, follow the steps outlined below:

1. Where a water supply is in use, human consumption is possible, and a positive result for total coliforms is made, but clean and sanitary conditions were documented, cite the applicable standard as "*de minimis*." For example, transportable water containers maintained as indicated in section (C) above would fall in this category, as long as the source has been sampled and no *E. coli* is found.

Where a positive result for total coliforms is made, but conditions that were *not* clean and sanitary were documented, cite the applicable standard as "other-than-serious."

The Oregon Health Authority's Drinking Water Services advises that neither water boiling nor a referral to the local health department is required where only total coliforms are present. Compliance officers can use professional discretion in deciding

whether or not the specific circumstances necessitate contacting the local health department.

2. Where a water supply is in use, human consumption is possible, and a positive result for Total Coliforms and *E. coli* is made, cite the applicable standard as “Serious.” The water supply should be removed from service immediately. (OHA-DWS recommends not shutting off a water supply completely, because there is additional risk of contamination from cross connection.) The water supply will require chlorination or another type of effective treatment to remove contamination. An alternative water supply may be needed while the well is treated.

Consider alternatives such as the provision of bottled water, when assessing the need for a red-tag on a water supply. A referral to the local health department is required.

OHA Drinking Water Services contracts with Oregon’s counties to perform much of the program work at the local level. These counties are responsible for all water systems with groundwater sources serving 3,300 people or less. For drinking water issues concerning these systems, call the [local county health department](#) for assistance. Compliance officers should follow up with the local health department to determine if any additional actions are required by the employer or housing provider to ensure the safety of the affected employees or occupants

Training: Oregon OSHA will ensure that all safety and health compliance officers who conduct inspections where compliance with water quality standards are evaluated receive training, including instructions from this directive and other appropriate directives.

History: Issued 4-10-2000 Revised 4-18-2003, 7-3-2006, 8-15-2011, 6-17-2016, 12-3-2018 and 4-15-2019

APPENDIX A

Proper Sampling Techniques

Oregon OSHA will follow these recommended sampling procedures for the collection of water samples for bacteriological testing *except for* the measuring and recording residual chlorine levels items (see steps #4 and #8f below.) Proper sampling techniques are extremely important in obtaining accurate water quality information. Carefully follow these steps when taking a sample:

1. **Select the sampling point.** The sampling point must be a faucet from which water is commonly taken for public use.
 - a. The sampling point should be a non-swivel faucet.
 - b. Remove any aerator or screen and flush.
 - c. It should not be a faucet that leaks, permitting water to run over the outside of the faucet. Leaking faucets can promote bacterial growth.
 - d. If an outside faucet must be used, disconnect any hoses or other attachments and be sure to flush the line thoroughly (see Step 4).
 - e. Do not use fire hydrants as sampling points. Do not dip the bottle in reservoirs, spring boxes or storage tanks in order to collect the sample.

If you have any questions about proper sampling points, please contact your certified laboratory, county health department, or the Oregon Health Authority's Drinking Water Services Division.

2. **Use only sample bottles provided by the lab specifically for bacteriological sampling.** Coliform bacteria tests require specially prepared sample bottles. These bottles should not be rinsed before sampling. A chemical placed in the bottles by the lab is necessary for correct test results. (If possible, obtain extra bottles from the laboratory that will perform the test, to be kept on hand. Observe any expiration dates.)
3. **Don't open the sample bottle until the moment of filling.** This helps prevent contamination of the sterile sample bottle.
4. **Flush the line.** Run the water through the faucet for three to five minutes before opening the bottle to take the sample. If your water system is chlorinated, measure the free chlorine residual before collecting the sample and record the residual on the lab form.
5. **Uncap the sample bottle.** As you do this, hold the bottle near the base and be sure not to put your fingers inside the sample bottle or on the inside of the lid. Do not set the lid down while taking the sample. Any of these things can contaminate the sample.

6. **Reduce the water flow to a steady stream and gently fill the bottle, leaving an air space of at least one-half inch at the top.** Remember: don't rinse the bottle before filling it. And be careful not to splash out the chemical already in the bottle.
7. **Replace the cap immediately.** Be sure that it's tight so it can't leak. If you drop the lid or think you have contaminated the sample, do not use it. Use another bottle and collect a new sample.
8. **Label the sample bottle.** Completely fill out the form provided by the lab. The information accompanying the sample must include:
 - a. Public Water System identification number (if applicable)
 - b. Date and time water sample taken
 - c. Location sampled
 - d. Name of person collecting sample
 - e. The sample type: "routine," "repeat," or "special"
 - i. **Routine:** Samples collected on a regular basis to monitor for contamination.
 - ii. **Repeat:** Samples collected following a present (positive) routine sample. Usually four repeat samples must be collected. This figure is based on system size.
 - iii. It is important to include the date of the initial positive routine sample for which the repeat samples were taken. A space is provided for this in the middle section of most forms.
 - iv. **Special:** Samples collected for other reasons. Examples are a sample collected after repairs to the system and before it is placed back into operation, or a sample collected at a well head prior to disinfection.
 - f. Free chlorine residual, if your system is chlorinated. The residual should be measured at the time of sample collection.
9. **Package the sample for delivery to the lab.** Be sure to include the lab form. The samples should be kept cool at all times. If mailing, use the container provided by the lab.
10. **Mail or deliver the sample to the lab immediately.** The lab cannot accept samples older than 30 hours. The water quality of the sample has changed too much by then to give correct results.

APPENDIX B

Summary of Citation Guidelines for Workplace Water Quality Issues

Source	Total Coliforms	E. coli	Sanitary Conditions	Arsenic & Nitrates	Severity	Possible Abatement Methods
Water Supply (includes public water systems or private sources such as a well or spring.)	yes	no	yes#	test	<i>De minimus</i>	<p>Water supply with E. coli present cannot be used until treatment & clearance sampling is completed.</p> <p>If E. coli is present, instruct employer or housing provider to use an alternate water source/supply.</p> <p>If a public water supply is contaminated, notify local health department of findings.</p> <p>If Arsenic or Nitrates are present issue a hazard letter.</p>
	yes	no	no	test	Other-than-Serious (OTS)	
	yes	yes	no	test	Serious	
Transportable Containers*	yes	no	yes#	test	<i>De minimus</i>	<p>Source water must be sampled concurrently to ensure its safety.</p> <p>Commercially bottled water is one possible alternative source.</p> <p>If Arsenic or Nitrates are present issue a hazard letter.</p>
	yes	no	no	test	OTS	
	yes	yes	no	test	OTS	

NOTES:

Total Coliform indicates a pathway may exist for contamination of the water.

E. coli indicates actual contamination of the water from a fecal or enteric source.

Sanitary conditions are documented, or sanitation procedures are being followed routinely.

* Sanitation of transportable containers includes washing with soap and water and rinsing with an appropriate sanitizing agent at least once every seven days. More frequent or more thorough sanitation may be necessary when workplace conditions cause portable containers to become unsanitary.

APPENDIX C
Sample Hazard Letter

This letter must be adapted to the specific circumstances noted in each inspection. The letter below is an example of the type of letter that may be appropriate in some circumstances. Recognize and encourage the employer's efforts to implement solutions to this hazard, if appropriate. Tailor the recommended controls outlined below to the specific needs of the employer. Italicized and bracketed text is for Oregon OSHA compliance use only and should not be included in the letter.

Dear Employer:

An inspection of your workplace and an evaluation of the well or spring-supplied water used at [*your agricultural labor housing facilities or in the field*] for arsenic or nitrates at [*location*] on [*date*] disclosed the following results:

[Describe any elevated arsenic or nitrate level identified during sampling].

Please find the following link to the Oregon Health Authority's Drinking Water Program that discusses the levels of concern [for [arsenic](#) or [nitrates](#)] and the methods they recommend to mitigate the hazard.

Long-term consumption of water with arsenic above the drinking water standard may increase the risk of health problems of the skin, circulatory system, nervous system, lungs, and bladder. These health problems include some forms of cancer.

In the interest of workplace safety and health, I urge you take the necessary steps to reduce or eliminate your workers' exposure to these contaminants in your workplace water supply.

Sincerely,

Oregon OSHA Administrator

APPENDIX D

Oregon OSHA Contracts with Water Sampling Labs

As of 3/26/2019

Alexin Analytical Laboratories (PO 50-593)

13035 SW Pacific Hwy
Tigard, OR 97223
503-639-9311
Fax: 503-684-1588

Analytical Laboratory and Consultants, Inc. (PO 50-466)

361 West Fifth Avenue
Eugene, OR 97401
541-485-8404
Fax: 541-484-5995

City of The Dalles Water Quality Laboratory (Contract 70G000223)

6780 Reservoir Road
The Dalles, OR 97058
541-298-2248
Fax: 541-298-2129
No nitrate or arsenic testing. E. Coli and Total Coliforms only

Neilson Research (PO 50-227)

245 South Grape St.
Medford, OR 97501-3123
541-770-5678
Fax: 541-770-2901

Table Rock Analytical Laboratory (PO 50-595)

419 SW 5th St.
Pendleton, OR 97801
541-276-0385

Umpqua Research Company (PO 50-350)

738 SE Glenwood Drive
Bend, OR 97701
541-312-9454

Waterlab (PO 50-229)

2603 12th St SE
Salem, OR 97302
503-363-0473
Fax: 503-363-8900

APPENDIX E

Links to Additional Information

Drinking Water Services

<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater>

Systems

[Start-up Tips for Seasonal Systems: Disinfection Details](#)

Includes:

[System without storage tank](#)

[Systems with a storage tank or spring box](#)

[Safety precautions](#)

[Start-up Tips for Seasonal Systems: To-do List](#)

[Shutdown Tips for Seasonal Systems](#)

Wells

[Domestic Well Safety Program](#)

Includes:

One page contaminant factsheets for

 [Total Coliform Bacteria](#)

 [Nitrate](#)

 [Arsenic](#)

[Water Well Owner's Handbook. A guide to water wells in Oregon.](#)

[OSU Extension Publication: Twelve Simple Things You Can Do to Protect Your Well Water](#)

Well Log records: http://apps.wrd.state.or.us/apps/gw/well_log