

DIVISION 55

REGULATIONS PERTAINING TO THE USE OF RECLAIMED WATER (TREATED EFFLUENT) FROM SEWAGE TREATMENT PLANTS

340-055-0005

Purpose

The purpose of these rules is to protect the environment and public health in Oregon by prescribing the methods, procedures and restrictions required for the use for beneficial purposes of reclaimed waters.

Stat. Auth.: ORS 468.020, 468.705 & 468.710

Stats. Implemented: ORS 468B.015 & 468B.020

Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0007

Policy

It is the policy of the Environmental Quality Commission to encourage the use of reclaimed waters for beneficial purposes using methods that assure that the health of Oregonians and the environment of the state are protected. Proper use of reclaimed waters for beneficial purposes enhances water quality by reducing discharges of treated effluents to surface waters and by conserving stream flows through reduced demand for withdrawals for out-of-stream use.

Stat. Auth.: ORS 468.020, 468.705 & 468.710

Stats. Implemented: ORS 468B.015

Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0010

Definitions

(1) "Sewage" means water-carried human wastes, including kitchen, bath and laundry waste from residences, buildings, industrial and commercial establishments, or other places, together with such groundwater infiltration, surface waters, or industrial wastewater as may be present.

(2) "Industrial Wastewater" means any liquid, gaseous, radioactive, or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade, or business, or from the development or recovery of any natural resources.

(3) "Sewage Treatment System" means any facility or equipment used to alter the quality of sewage by physical, chemical or biological means or a combination thereof such that the tendency of said wastewater to cause any degradation in water quality or other environmental conditions is reduced.

(4) "Sewage Treatment System Owner" is any person who owns a sewage treatment system that provides reclaimed water for use.

(5) "Person" means the United States and agencies thereof, any state, any individual, public or private corporation, political subdivision, governmental agency, municipality, copartnership, association, firm, trust estate, or any other legal entity whatever.

(6) "NPDES Permit" means a waste discharge permit as defined in Oregon Administrative Rules Chapter 340, Division 45.

(7) "WPCF Permit" means a Water Pollution Control Facilities permit as defined in OAR Chapter 340, Division 45.

(8) "Reclaimed Water" means treated effluent from a sewage treatment system which, as a result of treatment, is suitable for a direct beneficial purpose or a controlled use that could not otherwise occur.

(9) "User" means any person who uses reclaimed water.

(10) "Oxidized Wastewater" means treated sewage in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

(11) "Biological Treatment" means methods of sewage treatment in which bacterial or biochemical action is promoted as a means of producing an oxidized wastewater.

(12) "Clarification" means the removal by gravity of settleable solids remaining in the effluent after the biological treatment or after flocculation as part of the coagulation process.

(13) "Coagulation" means a treatment process applied to oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated by the addition of suitable floc-forming chemicals or by an equally effective method.

(14) "Filtration" means a treatment process applied to oxidized, coagulated, clarified wastewater which has been passed through natural undisturbed soils or filter media, such as sand or diatomaceous earth, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of 2 turbidity units and does not exceed 5 turbidity units more than 5 percent of the time during any 24-hour period.

(15) "Disinfection" means a treatment process in which the pathogenic organisms have been destroyed or reduced to very low levels by chemical, physical or biological means. Disinfection is deemed to have occurred when total coliform and (where appropriate) turbidity limitations have been continuously met for the specific uses cited in Table 1.

(16) "Beneficial Purposes" means a purpose where the resource values of the reclaimed waters, such as but not limited to its nutrient or moisture value, are utilized for enhanced productivity or water conservation by the user.

(17) "Restricted Impoundment" means a body of reclaimed water in which recreation is limited to fishing, boating, and other non-body-contact water recreation activities. Restricted impoundments constructed and operated pursuant to these rules shall be considered part of a sewage treatment system and not waters of the state for water quality purposes.

(18) "Nonrestricted Impoundment" means a body of reclaimed water in which no limitations are imposed on body-contact water recreation activities. Nonrestricted impoundments constructed and operated pursuant to these rules shall be considered part of a sewage treatment system and not waters of the state for water quality purposes.

(19) "Landscape Impoundment" is a body of reclaimed water which is used for aesthetic enjoyment or which otherwise serves a function not intended to include public contact through such activities as boating, fishing, or body-contact recreation. Landscape impoundments constructed and operated pursuant to these rules shall be considered part of a sewage treatment system and not waters of the state for water quality purposes.

(20) "Potable Water Supply System" means a water supply system used to provide water for human consumption.

(21) "Controlled Use" means a use of reclaimed water for which the sewage treatment plant owner, either directly or through a written contract, has reasonable knowledge of the use and fate of the reclaimed water and is able to discontinue the use of the reclaimed water if it is determined that the requirements of the rules and the permit authorizing use of reclaimed water are not being met.

(22) "Processed Food Crops" means those crops which undergo thermoprocessing sufficient to kill spores of *Clostridium botulinum*. Washing, pickling, fermenting, milling or chemical treatments are not sufficient.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the Department of Environmental Quality.]

Stat. Auth.: ORS 468.020, 468.705 & 468.710

Stats. Implemented: ORS 468B.005, 468B.030 & 468B.050

Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0013

Exemptions

Reclaimed water used at the treatment plant site where it is generated shall be exempt from these rules provided:

(1) The reclaimed water that is used is disinfected, oxidized wastewater; and

(2) Reclaimed water that is used for landscape irrigation shall be confined to the treatment plant site. No spray or drift shall be allowed off the treatment plant site. The treatment plant site shall not include property that is not contiguous to the parcel of land upon which the treatment plant is located.

Stat. Auth.: ORS 468.020, 468.705 & 468.710

Stats. Implemented: ORS 468B.050

Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0015

General Requirements for Use of Reclaimed Water

(1) No sewage treatment system owner shall release any reclaimed water for use unless so authorized by a WPCF or NPDES permit issued by the Department. Any application for a WPCF or NPDES permit that proposes to use reclaimed water shall provide sufficient information as necessary to evaluate and determine compliance with this Division.

(2) Except for use of reclaimed water already authorized by permit by the Department, no sewage treatment system owner shall release any reclaimed water for use until a reclaimed water use plan meeting the requirements of OAR 340-055-0025 has been approved in writing by the Department. Before approving any plan, the Department shall submit the proposed plan to the Health Division for comment. For uses of reclaimed water already permitted, but for which no reclaimed water use plan has been approved, the sewage treatment system owner shall submit a reclaimed water use plan to the Department when requested in writing by the Department.

(3) Where the rules of this Division require limitations and conditions that are different or more stringent than conditions in existing permits, the existing permit limitations and conditions shall control until such time as the Department chooses to change the permit limitations and conditions through permit modification or renewal. When the Department does choose to change existing permit limitations and conditions to conform to these rules, the permittee shall be given a reasonable compliance schedule for achieving more stringent requirements. The compliance schedule shall be inserted in the permit at the time the permit is renewed or modified.

(4) Reclaimed water from sewage treatment systems used for agricultural and nonagricultural uses listed in **Table 1** of this Division shall comply with the associated effluent quality limitations and the treatment, monitoring and other requirements for that use that are stated in **Table 1**:

(a) Where **Table 1**, for specified uses, requires that reclaimed water receive biological, coagulation, clarification, filtration treatment plus disinfection, the Department will consider treatment processes that do not utilize coagulation provided that equivalent effluent quality to that achieved with coagulation can be demonstrated. The Department shall consult with the Oregon Health Division when considering alternative treatment processes allowed for under this section;

(b) The Department may include additional permit effluent limitations and/or other permit conditions other than those required by **Table 1** if it determines or has reason to believe that the reclaimed water may contain physical or chemical contaminants that would impose potential hazards to public health or the environment or cause detrimental effects on an allowed use;

(c) In cases where chlorine or chlorine compounds are used as the disinfecting agent, the Department may specify in the permit a minimum chlorine residual concentration to be met after a minimum contact time. In cases where other disinfecting agents are used, the Department may require other additional monitoring requirements that will assure adequate disinfection. The Department may consult with the Health Division before allowing disinfection agents other than chlorine or chlorine compounds;

(d)(A) The Department may reduce the buffer distances required in **Table 1** if it determines that alternative controls as specified in the permit will adequately protect public health and the environment. Alternative controls may be, but are not limited to, valves that are activated by wind speed or direction, low trajectory sprinklers or remoteness of the site to incompatible uses;

(B) Buffers for uses in **Table 1** for Level I effluent shall be specified in the permit and shall be based on a determination that aerosols will be adequately controlled so as to protect public health;

(C) The Department may consult with the Health Division before establishing buffer distances other than those specifically cited in **Table 1**.

(5) Reclaimed water from sewage treatment systems shall be considered adequately treated and disinfected if, at the end of the treatment process, the bacterial and turbidity limitations for the use of reclaimed water as specified in **Table 1** are met. The sampling point for monitoring compliance with water quality limitations shall be specified in the permit.

(6) By permit, reclaimed water for a use not specified in **Table 1** may be authorized. In considering such authorization, the Department may request information and shall impose such effluent limitations as deemed necessary to assure protection of public health and the environment. Before the Department shall authorize uses of reclaimed water under this section of the rule, written concurrence from the Oregon Health Division shall be obtained.

(7) A person using reclaimed water from a sewage treatment system may provide additional treatment for a more restrictive reuse as allowed under **Table 1** of this Division. Under such conditions, the sewage treatment system owner providing the additional treatment is subject to the same requirements as other sewage treatment system owners releasing wastewater for reuse and its owner shall have a WPCF or NPDES permit issued by the Department.

(8) The Department may consider the effects of blending reclaimed water with other waters if proposed by the owner of a sewage treatment system. In cases where blending of reclaimed water is provided, the sewage treatment system owner shall submit to the Department, at a minimum, a plan of operation, a description of any additional treatment process, blending volumes, and a range of final quality at the point of use. Reclaimed water receiving less than secondary treatment and disinfection shall not be blended for uses requiring a higher level of treatment and disinfection.

(9) The sewage treatment system owner shall be solely responsible and liable to the Department for meeting the requirements of these rules and the sewage treatment system owner's permit for any and all water that passes through the owner's treatment plant. Any reclaimed water released for use on property not under the direct control of the sewage treatment system owner shall be allowed only if there is a legally enforceable contract between the treatment plant owner and the user. The contract shall set forth as a minimum:

(a) The quality and maximum quantity of wastewater to be released for use by the sewage treatment system;

(b) The specific use(s) for which the reclaimed water will be used by the user;

(c) The maximum quantity of reclaimed water that shall be used on an annual basis;

(d) A condition that the direct release of any reclaimed water to surface waters of the State of Oregon shall be prohibited;

(e) A statement specifying the parties in the contract responsible for compliance with these rules and the sewage treatment system permit;

(f) A provision allowing the sewage treatment system owner to cease providing reclaimed water if the Department or the owner determine that the requirements of this Division are not being met;

(g) A condition that requires the user of reclaimed water to report to the sewage treatment plant owner any and all violations of the terms of these rules or the contract.

(10) In cases where reclaimed water is transferred from one user to another, each succession of ownership of the reclaimed water shall be governed by a legally enforceable contract on file with the owner of the sewage treatment system and which notifies the succeeding reclaimed water user of the requirements of this Division and the permit for the sewage treatment system. The contract shall also require the succeeding user to so contract with any additional succeeding reclaimed water users.

(11) The use of reclaimed water from a sewage treatment system for direct human consumption, regardless of the level of treatment, is prohibited unless, after public hearing and with the written concurrence of the Oregon Health Division, it is so authorized by the Environmental Quality Commission.

(12) The monitoring requirements specified in any permit that authorizes use of reclaimed water shall, at a minimum, meet the requirements listed in **Table 1** of this Division. Effluent and other data required by a permit authorizing use of reclaimed water from sewage treatment plants shall be submitted to the Department each month.

(13) A permit authorizing use of reclaimed water from sewage treatment plants shall require reporting of noncompliance with this Division and the sewage treatment system owner's permit within 24 hours of when the permittee becomes aware of an incident of noncompliance. If the permittee becomes aware of the incident of noncompliance when the Department is not open, the incident shall be reported to Oregon Emergency Response System (Telephone Number 1-800-452-3011).

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the Department of Environmental Quality.]

Stat. Auth.: ORS Ch. 468.020, 468.705 & 468.710

Stats. Implemented: ORS 468B.030 & 468B.050

Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0020

Groundwater Protection Requirements

No reclaimed water shall be authorized for use unless all requirements for groundwater protection established in OAR Chapter 340, Division 40 are satisfied. OAR Chapter 340, Division 40 shall be considered satisfied by the Department if the sewage treatment system owner demonstrates that reclaimed water will not be used in a manner or applied at rates that cause contaminants to be leached into the groundwater in quantities that will adversely affect groundwater quality.

Stat. Auth.: ORS Ch. 468.020, 468.705 & 468.710

Stats. Implemented: ORS 468B.150 & 468B.190

Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0025

Reclaimed Water Use Plan

Reclaimed water use plans shall demonstrate how the sewage treatment system owner will comply with these rules and shall meet the following minimum requirements:

(1) The plan shall contain a description of the design of the proposed reclamation system and shall clearly indicate the means for compliance with these regulations.

(2) No reclaimed water use plan submittal shall be deemed complete for review by the Department unless the submittal includes three complete copies of the proposed plan.

Stat. Auth.: ORS Ch. 468.020, 468.705 & 468.710

Stats. Implemented: ORS 468B.030 & 468B.050

Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

340-055-0030

Other Requirements for Use of Reclaimed Water

(1) No bypassing shall be allowed of untreated or inadequately treated water from the sewage treatment system or from any intermediate unit processes to the point of use.

(2) Alarm devices shall be provided as necessary to provide warning of loss of power and/or failure of process equipment essential to the proper operation of the sewage treatment system and to compliance with this Division.

(3) Unless otherwise approved in writing by the Department, sewage treatment systems providing reclaimed water for use shall have standby power facilities of sufficient capacity to fully operate all essential treatment processes. The Department may grant an exception to this section only if the sewage treatment system owner demonstrates that power failure will not result in inadequately treated water being released for use and will not result in any violation of an NPDES or WPCF permit limit or condition or Oregon Administrative Rule.

(4) Sewage treatment systems that provide reclaimed water for use shall contain sufficient level of redundant treatment facilities and monitoring equipment to effectively prevent inadequately treated water from being used or discharged to public waters.

(5) Unless otherwise approved in writing by the Department, all piping, valves, and other portions of the reclaimed water use system shall be constructed and marked in a manner to prevent cross-connection with potable water systems. Unless otherwise approved in writing by the Department, construction and marking shall be consistent with sections (2), (3), (4), and (5) of the **Final Draft of the "Guidelines for Distribution of Nonpotable Water" of the California-Nevada Section of the American Water Works Association**, as revised **September 14, 1983**. The Department may allow exceptions for existing systems in rural areas where it can be demonstrated that both private and public domestic water systems are more than 100 feet from any component of the system using reclaimed water.

(6) There shall be no connection between any potable water supply system and the distribution system carrying reclaimed water unless the connection is through either an unrestricted air gap at least twice as wide as the diameter of the potable water discharge, or a reduced pressure principle back flow preventor (RPP) which is tested and serviced professionally at least once per year.

(7) Every NPDES or WPCF permit that authorizes use of reclaimed water shall include a requirement that the sewage treatment system operator submit at least an annual report to the Department describing the effectiveness of the system to comply with the approved reclaimed water use plan, the rules of this Division, and permit limits and conditions.

(8) No reclaimed water shall be made available to a person proposing to use reclaimed water unless that person certifies in writing that they have read and understand the provisions in these rules. This written certification shall be kept on file by the sewage treatment system owner and be made available to the Department for inspection upon request.

(9) Compliance with these rules shall not create a water right under ORS Chapters 536, 537, 539 or 540.
[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the Department of Environmental

Quality.]

Stat. Auth.: ORS Ch. 468.020, 468.705 & 468.710
Stats. Implemented: ORS 468B.030 & 468B.050
Hist.: DEQ 32-1990, f. & cert. ef. 8-15-90

OREGON ADMINISTRATIVE RULES
CHAPTER 340, DIVISION 55 — DEPARTMENT OF ENVIRONMENTAL QUALITY

TABLE 1
(OAR 340-55-015)

TREATMENT AND MONITORING REQUIREMENTS
FOR USE OF RECLAIMED WATER*

NOTE: This table specifies the allowable beneficial purposes for various levels of quality of reclaimed water. If reclaimed water is to be applied to a specific beneficial purpose, all requirements — except advisory notices, but including footnotes, listed for that level of reclaimed water and use must be met.

<u>CATEGORY</u>	<u>Level I</u>	<u>Level II</u>	<u>Level III</u>	<u>Level IV</u>
Biological Treatment	X	X	X	X
Disinfection		X	X	X
Clarification				X
Coagulation				X
Filtration				X
Total Coliform (organisms/100 ml):				
Two Consecutive Samples	N/L	240	N/L	N/L
7-Day Median	N/L	23	2.2	2.2
Maximum	N/L	N/L	23	23
Sampling Frequency	N/R	1 per week	3 per week	1 per day
Turbidity (NTU):				
24-Hour Mean	N/L	N/L	N/L	2
5% of Time During a 24-Hour Period	N/L	N/L	N/L	5
Sampling Frequency				Hourly
GENERAL				
Public Access	Prevented (fences gates, locks)	Controlled (signs, rural or nonpublic lands)	Controlled (signs, rural or nonpublic lands)	No direct public contact irrigation cycle
(Numbers in the Table Refer to Footnotes)				
Buffers for Irrigation:	Surface: 10 ft. Spray: site specific	Surface: 10 ft. Spray: 70 ft.	10 ft.	None required
Agricultural:				
Food Crops	N/A	N/A	N/A	Unrestricted
Processed Food Crops	N/A	1	1	Unrestricted
Orchards and Vineyards	N/A	2	2	Unrestricted
Fodder, Fiber, and Seed Crops not for Human Ingestion	3	1	1	Unrestricted
Pasture for Animals	N/A	4	4	Unrestricted
Sod	N/A	1	1	Unrestricted
Ornamental Nursery Stock	N/A	1	1	Unrestricted
Christmas Trees	N/A	1	1	Unrestricted
Firewood	N/A	1	1	Unrestricted
Commercial Timber	3	1	1	Unrestricted
Parks, Playgrounds, Schoolyards, Golf Courses with Contiguous Residences	N/A	N/A	N/A	5, 6
Golf Courses without Contiguous Residences	N/A	5, 7	5, 7	5, 6
Cemeteries, Highway Medians, Land- scapes without Frequent Public Access	N/A	5, 7	5, 7	5, 6
Industrial or Commercial Use	N/A	9, 10, 11, 12	9, 10, 11, 12	9, 10, 12
Construction Use	N/A	9, 10, 11, 12, 13	9, 10, 11 12, 13	9, 10, 12, 13
Impoundments:				
Unrestricted	N/A	N/A	N/A	8, 10
Restricted	N/A	N/A	8, 10, 14	8, 10
Landscape Impoundments	N/A	8, 10, 14	8, 10, 14	8, 10

OREGON ADMINISTRATIVE RULES
CHAPTER 340, DIVISION 55 — DEPARTMENT OF ENVIRONMENTAL QUALITY

*** DEFINITIONS:**

Surface:	Surface irrigation where application of reclaimed water is by means other than spraying such that contact between the edible portion of any food crop and reclaimed water is prevented.
Spray:	Spray irrigation where application of reclaimed water to crops is by spraying it from orifices in piping.
Processed	
Food Crops:	Those which undergo thermoprocessing sufficient to kill spores of <i>Clostridium botulinum</i> . Washing, pickling, fermenting, milling or chemical treatments are not sufficient.
N/A:	This level of reclaimed water not allowed for this use.
N/L:	No limit
X:	Required treatment for this treatment level.
N/R:	Not required.

FOOTNOTES:

- 1 Advisory Notice Only: The Oregon State Health Division recommends that there should be no irrigation of this level of effluent for 3 days prior to harvesting.
- 2 Surface irrigation where edible portion of crop does not contact the ground, and fruit or nuts shall not be harvested off the ground.
- 3 The Department may permit spraying if it can be demonstrated that public health and the environment will be adequately protected from aerosols. Advisory Notice Only: The Oregon State Health Division recommends that there should be no irrigation of this level of effluent for 30 days prior to harvesting.
- 4 Surface or spray irrigation: No animals shall be on the pasture during irrigation.
- 5 Signs shall be posted around the perimeter of the facility's perimeter and other locations indicating that reclaimed water is used for irrigation and is not safe for drinking, and in the case of effluent quality Levels II and III for body contact (e.g., for Level IV, ATTENTION: RECLAIMED WATER USED FOR IRRIGATION — DO NOT DRINK · ATENCION: RECLAMADO DESPERDICIO DE AGUA USADO PARA LA IRRIGACION. NO BEBA EL AGUA; for Levels II and III, ATTENTION: RECLAIMED WATER USED FOR IRRIGATION — AVOID CONTACT — DO NOT DRINK · ATENCION: RECLAMADO DESPERDICIO DE AGUA USADO PARA LA IRRIGACION — EVITE EL CONTACTO — NO BEBA EL AGUA).
- 6 Reclaimed water shall be applied in a manner so that it is not sprayed onto areas where food is prepared or served or onto drinking fountains.
- 7 Reclaimed water shall be applied in a manner so that it is not sprayed within 100 feet from areas where food is prepared or served or where drinking fountains are located.
- 8 Signs shall be posted around the perimeter and other locations indicating that reclaimed water is used and is not safe for drinking, and in the case of effluent quality Levels II and III for body contact (e.g., for Level IV, ATTENTION: RECLAIMED WATER — DO NOT DRINK · ATENCION: RECLAMADO DESPERDICIO DE AGUA — NO BEBA EL AGUA; for Levels II and III, ATTENTION: RECLAIMED WATER — AVOID CONTACT — DO NOT DRINK · ATENCION: RECLAMADO DESPERDICIO DE AGUA — EVITE EL CONTACTO — NO BEBA EL AGUA).
- 9 The Department may impose more stringent limits on the use of reclaimed water if it believes it is necessary to protect public health and the environment.
- 10 There shall be no disposal of reclaimed waters into surface or groundwaters without authorization by an NPDES or WPCF permit.
- 11 Use of reclaimed water in evaporative cooling systems shall be approved only if the user can demonstrate that aerosols will not present a hazard to public health.
- 12 Members of the public and employed personnel at the site of the use or reclaimed water shall be notified that the water is reclaimed water. Provisions for how this notification will be provided shall be specified in the reclaimed water use plan.
- 13 Unless decontaminated in a manner approved in writing by the Oregon Health Division, tanker trucks or trailers that transport and/or use reclaimed water shall not be used to transport potable water intended for use as domestic water. A tanker truck or trailer used to transport and/or use reclaimed water shall have the words "NONPOTABLE WATER" written in 6-inch high letters on each side and the rear of the truck. The words "NONPOTABLE WATER" shall not be removed until decontamination as approved by the Health Division has occurred.
- 14 Aerators or decorative fixtures which may generate aerosols shall not be used unless approved in writing by the Department. Approval will be considered if it can be demonstrated that aerosols will be confined to the area of the impoundment or a restricted area around the impoundment.

ADVISORY NOTICE ONLY:

The Oregon State Health Division recommends that persons who must handle irrigation or other equipment for reclaimed wastewater or who are exposed to reclaimed water should be fully advised of any hazards associated with such exposure and should be provided with necessary protective clothing.