State of Oregon
Department of Environmental Quality Memorandum

Date: July 28, 2011

To: Environmental Quality Commission

From: Dick Pedersen, Director

Subject: Agenda item C, Rulemaking: OAR Chapter 340, Division 053: Graywater Reuse and Disposal Systems
Aug. 25, 2011, EQC meeting

Why this is important

The proposed rules establish a new program for the permitting of graywater reuse and disposal systems and create opportunities for individuals, businesses and other organizations to reuse graywater for beneficial purposes, such as irrigation. The proposed rules establish policy that encourages graywater reuse while protecting public health, safety and welfare; public water supplies; and waters of the state.

DEQ recommendation and EQC motion

The Oregon Department of Environmental Quality recommends that the Oregon Environmental Quality Commission adopts the proposed rules for graywater reuse and disposal systems under OAR Chapter 340, Division 53, and the proposed rule revisions establishing permit fees under OAR Chapter 340, Division 045, as presented in attachments A1 and A2.

Background and need for rulemaking

The 2009 Oregon Legislature approved House Bill 2080, which legalized the use of graywater for beneficial purposes and specified that a person may not construct, install or operate a graywater reuse and disposal system without obtaining a permit from DEQ. The bill further directed EQC to adopt rules for permitting graywater reuse and disposal systems that minimize the burden of permit requirements on property owners while protecting public health, safety and welfare; public water supplies; and waters of the state.

A 2008 Alternate Method Ruling under the Oregon Plumbing Specialty Code allows the reuse of graywater for residential toilet and urinal flushing. However, a person wanting to reuse graywater outside a structure is required under DEQ's current water quality rules to obtain the same Water Pollution Control Facilities permit that is required for municipal wastewater treatment facilities. This is cost-prohibitive and effectively discourages graywater reuse.

The proposed rules will expand reuse opportunities and allow graywater to be used for purposes such as landscape irrigation and landscape ponds. Expanding graywater reuse opportunities potentially

reduces the demand on drinking water sources by allowing graywater for uses not requiring potable water, and may conserve groundwater and stream flows by reducing withdrawals. The use of graywater as an alternative source of water for nonpotable uses is supported by various groups, organizations and local governments interested in water conservation, sustainability and green construction.

Effect of rule

If adopted, the proposed rules would:

- Establish public policy to encourage the reuse of graywater for beneficial purposes, such as landscape irrigation.
- Establish general requirements for all graywater reuse and disposal systems necessary to protect public health and the environment.
- Define three types of graywater based on level of treatment and identify beneficial purposes, treatment and monitoring requirements, setbacks, access and exposure controls, and site management practices necessary to protect public health and the environment.
- Establish design and construction standards for graywater reuse and disposal systems.
- Create a three-tier permitting system that defines permitting requirements based primarily on the volume of graywater produced.
- Establish requirements for entering into agreements with local governments to act as program agents if they request to implement the program.
- Establish fees for graywater reuse and disposal system permits.

Commission authority

The commission has authority to take this action under ORS 454.610, 454.625, 468.020 and 468B.010.

Key issues

Graywater reuse and disposal system permits

The proposed rules create a three-tier permitting program. Simple residential graywater systems would require very little DEQ oversight, while more complex, innovative systems require DEQ review and approval. Residential structures generating less than 300 gallons per day of graywater used only for subsurface irrigation could be registered under a Tier 1 general permit. The owner of a system under a Tier 1 general permit would pay a small fee and be required to operate and maintain the system following best management practices. Non-residential structures, or any structure producing up to 1,200 gallons per day, could be covered under a Tier 2 general permit that requires DEQ review and approval of the system design.

Large graywater systems, or systems using disinfection, could be permitted under a Tier 3 individual permit. A graywater system using innovative treatment technologies could also be permitted under a Tier 3 individual permit.

Permit fees and general program funding

The proposed rules establish permit fees that are commensurate with the effort required to issue the permit. While DEQ projects that permit fees will not cover program costs, the impacts of unpermitted graywater systems that are poorly designed, operated or maintained could result in adverse impacts on public health or the environment.

For a Tier 1 general permit, the proposed rules establish a $50 new-permit application fee and a $40 annual fee. Persons who commented on the proposed rules stated the annual fee would be a disincentive to graywater reuse and it would encourage installation of illegal graywater systems. In response to this comment, the proposed rules allow DEQ to waive the $40 annual fee if the permittee submits an annual report on system operation and maintenance. Permit fees for a Tier 2 general permit include a $534 new-permit application fee and $50 annual fee, which are similar to those for other similar general water quality permits. The permit fee for a Tier 3 individual permit varies based on the size of the system: the new-permit fee ranges between $613 and $3,948 and the annual compliance fee ranges between $341 and $817.

Kitchen sinks and high-organic content graywater

Graywater originating from kitchen sinks can contain high concentrations of organic matter, total suspended solids, bacteria, and oil and grease. The proposed rules require this type of graywater to pass through a physical treatment process, such as a grease trap, to reduce the concentration of these contaminants. Because House Bill 2080 does not identify dishwashers or garbage disposals as sources of graywater, wastewater from these sources has been excluded from reuse under the proposed rules.

Connections to wastewater treatment systems

The proposed rules generally require connection of a graywater reuse and disposal system to a sewer system, septic tank or similar onsite wastewater treatment system; however, DEQ could permit a system without a traditional wastewater connection under a Tier 3 individual permit. DEQ has

determined a traditional wastewater disposal connection is necessary as some household wastewater cannot be reused and a wastewater connection provides a backup when graywater reuse is not possible, such as in the event of system repair, shallow groundwater conditions or saturated soils.

Graywater and onsite wastewater treatment systems

High-strength wastewater may increase the risk of an onsite wastewater treatment system failure. The proposed rules do not allow graywater to be diverted from a septic system if the resulting concentration of septic tank effluent exceeds the definition for "residential strength wastewater" given in OAR 340-071.

Groundwater protection

The proposed rules allow graywater to be released to the ground for irrigation when supplemental water is necessary to support vegetation growth. Some commenters asked DEQ to allow groundwater recharge by infiltrating graywater into the subsurface. Others expressed concern that graywater discharges could result in groundwater degradation where the groundwater is a source of drinking water. The proposed rules maintain consistency with Oregon's groundwater rules, which allow only highly treated water to be released for aquifer recharge. The proposed rules also allow DEQ to impose more stringent requirements on graywater systems located in sensitive groundwater areas.

Graywater system design flows

The proposed rules direct a person to design a graywater reuse and disposal system to treat, store or use the volume of graywater necessary for the intended beneficial purpose or purposes. Graywater volumes in excess of the design flow must be directed to a traditional wastewater disposal system. A table of graywater design flows for various establishments is included in the proposed rules that DEQ will use to determine the appropriate graywater permit for an applicant. DEQ can also mandate the use of prescriptive design flows when necessary to protect public health or the environment.

Regulatory compliance and annual reports

An owner or operator of a system under a Tier 1 general permit is encouraged to demonstrate compliance with the proposed rules by submitting an annual report, as DEQ will waive the annual permit fee. Annual reports demonstrating compliance

would be required for Tier 2 and Tier 3 permits.

Public outreach

DEQ convened a DEQ Graywater Advisory Committee to provide recommendations on the proposed rules for graywater reuse and disposal systems. The committee met monthly from December 2009 until November 2010, and presented its recommendations to the commission at the December 2010 meeting. A list of committee members and the Executive Summary from the committee's report is provided as attachment B.

DEQ received public comment on the proposed rules from Jan. 24, 2011, through 5 p.m. on March 11, 2011, and held four public hearings in Portland, Bend, Eugene and Ashland. Results of public input are provided as attachments C and D.

Next steps

If adopted, the rules become effective upon filing with the Secretary of State's Office. After filing the rules, DEQ staff will:

- Draft two general permits for Tier 1 and Tier 2 graywater reuse and disposal systems.
- Develop an Internal Management Directive to provide graywater program implementation guidance to DEQ staff.
- Make adjustments to the existing water quality permit database and accounting system, as necessary, to issue new graywater permits.
- Develop, and post to DEQ's web site, fact sheets that provide information on the graywater rules.
- Develop a graywater guide for homeowners in coordination with a Portland State University graduate student, soil and water conservation districts, local municipalities and representatives from other interested stakeholders.
- Provide outreach to external stakeholder groups and agents through meetings, workshops and conferences.
- Create an annual report template to simplify reporting for Tier 1 and Tier 2 permittees.

DEQ's existing staff will coordinate internal program implementation activities. DEQ will continue to identify and work with external partners interested in the development of educational and guidance materials that can be used for local outreach to property owners, graywater system designers and installers, and local governments.

Attachments

A. Proposed rules (redline)
   A1. OAR 340-053
   A2. OAR 340-045-0070 and -0075

B. Cover page and Executive Summary from the DEQ Graywater Advisory Committee report
C. Summary of public comment and agency responses
D. Presiding Officer reports
E. Relationship to Federal Requirements questions
F. Statement of Need and Fiscal and Economic Impact
G. Land use evaluation statement

Available upon request

1. Graywater Advisory Committee report
2. Legal notice of proposed rulemaking hearing
3. Written comments received
4. Rule Implementation Plan

Approved:

Division: _____

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DEPARTMENT OF ENVIRONMENTAL QUALITY

Division 53

Graywater Reuse and Disposal Systems

340-053-0050

Purpose and Policy

(1) Purpose. OAR 340-053-0050 to 340-053-0110 prescribes requirements for the permitting of graywater reuse and disposal systems. The purpose of this division is to protect public health, safety and welfare; public water supplies; and waters of the state.

(2) Policy. It is the policy of the Environmental Quality Commission to encourage the use of graywater for beneficial purposes not requiring potable water because it reduces demand on drinking water sources and may conserve groundwater and stream flows by reducing withdrawal.

Stat. Auth.: ORS 454.610, ORS 454.625, ORS 468.020, & ORS 468B.010
Stats. Implemented: ORS 454.610, ORS 454.615, ORS 468B.020 & ORS 468B.050
Hist.:

340-053-0060

Applicability

(1) This division of rules applies to graywater reuse and disposal systems where some or all of the graywater is diverted from discharge to a sewerage system or an onsite wastewater treatment system to beneficial purposes.

(2) This division of rules does not apply to:

(a) The discharge of graywater to an approved sewerage system or an onsite wastewater treatment system approved under OAR 340-071;

(b) The reuse of graywater for activities inside a structure such as toilet and urinal flushing, commercial car washing or laundry washing when allowed under the Oregon Specialty Plumbing Code and the resulting wastewater is discharged to an approved sewerage system or an onsite wastewater treatment system approved under OAR 340-071;

(c) The treatment or reuse of recycled water as defined in OAR 340-055-0010; or

(d) The treatment, disposal or reuse of industrial waste as defined in OAR 340-045-0010 or process wastewater as defined in OAR 340-045-0010.

Stat. Auth.: ORS 454.610, ORS 454.625, ORS 468.020, & ORS 468B.010
Stats. Implemented: ORS 454.610, ORS 454.615, ORS 468B.020 & ORS 468B.050
Hist.:

340-053-0070

Definitions

The following definitions apply to this division of rules:

(1) "Beneficial purpose or reuse" means graywater is utilized for a resource value, such as to provide moisture. Examples include, but are not limited to, the irrigation of landscape vegetation, planters, greenhouses, vegetated roofs, and living walls.

(2) "Department" means the Oregon Department of Environmental Quality.

(3) "Evapotranspiration" means the combined loss of water from a given area, and during a specified period of time, by evaporation from the soil surface and by transpiration from plants.

(4) "Graywater" has the meaning given for "gray water" in ORS 454.605.

(a) "Type 1 graywater" means graywater that contains dissolved oxygen and may have passed through primary graywater treatment, but has not passed through secondary graywater treatment.

(b) "Type 2 graywater" means graywater that is oxidized and has passed through secondary graywater treatment.

(c) "Type 3 graywater" means graywater that is oxidized and has been disinfected following secondary graywater treatment.

(5) "Graywater treatment" means the alteration of the quality of graywater by physical, chemical, or biological means or combination thereof to reduce the risk of failure of the graywater reuse and disposal system, degradation of water quality or the environment, and risk to public health.

(a) "Primary graywater treatment" means a physical process to remove a portion of the grease, floatable and settable solids from graywater.

(b) "Secondary graywater treatment" means a chemical or biological process to remove a portion of the dissolved or suspended biodegradable organic matter and other suspended solids.

(6) "Graywater reuse and disposal system" means any existing or proposed graywater collection and distribution system equipped with a diversion device that can direct graywater between beneficial reuse and disposal.

(7) "Holding tank system" has the meaning given in OAR 340-071-0100.

(8) "Irrigation" means the application of water to soil, mulch or compost usually to supplement precipitation and supply moisture for the growth of vegetation or for the production of compost.

(9) "Landscape pond" means a constructed body of water that does not normally result in public contact through activities such as boating, fishing or body-contact recreation. Typical landscape ponds include fish ponds, water gardens and golf course water ponds. Landscape ponds do not include ponds designed to capture and infiltrate stormwater.

(10) "Mulch" means a protective covering spread or left on the ground to reduce evaporation, maintain even soil temperature, prevent erosion, control weeds or enrich the soil.

(11) "Onsite wastewater treatment system" has the meaning given in OAR 340-071-0100.

(12) "Owner" means any person who alone, jointly or severally:

(a) Has legal title to the single lot, parcel, dwelling, dwelling unit or commercial facility on which a graywater reuse and disposal system is located;

(b) Has care, charge or control of any real property on which a graywater reuse and disposal system is located, as agent, executor, administrator, trustee, commercial lessee or guardian of the estate of the holder of legal title; or

(c) Is the contract purchaser of real property on which a graywater reuse and disposal system is located.

(13) "Oxidized graywater" means a treated graywater in which the organic matter is stabilized, nonputrescible, and contains dissolved oxygen.

(14) "Person" has the meaning given in ORS 468.005.

(15) "Sewerage system" has the meaning given in ORS 468B.005.

(16) "Stormwater management structure" means both public and private structural stormwater controls such as swales, infiltration basins, Underground Injection Control (UIC) systems or similar structures intended to infiltrate stormwater into the ground.

(17) "Subsurface irrigation" means the slow release of water below the surface of soil, compost or mulch for the purpose of supplying moisture.

(18) "Vegetated roof" means a system of soil and vegetation that partially or completely covers the roof of a building or man-made structure. Vegetated roofs are also known as living roofs, green roofs or ecoroofs.

(19) "Waters of the state" has the meaning given in ORS 468B.005.

(20) "WPCF permit" means a Water Pollution Control Facilities permit as defined in OAR chapter 340, division 45.

Stat. Auth.: ORS 454.610, ORS 454.625, ORS 468.020, & ORS 468B.010
Stats. Implemented: ORS 454.610, ORS 454.615, ORS 468B.020 & ORS 468B.050
Hist.:

340-053-0080

General Requirements for Graywater Reuse and Disposal Systems

(1) Responsibility to comply with rules. Any person owning or operating a graywater reuse and disposal system must ensure that the graywater is used only in accordance with the rules in this division.

(2) Permit required. A person may not construct, install or operate a graywater reuse and disposal system unless authorized by a permit issued by the department under OAR chapter 340, division 45.

(a) A person owning a property with a graywater reuse and disposal system must obtain a permit as specified under OAR 340-053-0100 to operate the system or must abandon the system as specified under OAR 340-053-0100.

(b) On the transfer of a property with a graywater reuse and disposal system, the person releasing claim to the property must notify the receiving person that a graywater reuse and disposal system is present.

(3) Beneficial purpose. A person must only use graywater for beneficial purposes as specified for the applicable levels of treatment described in OAR 340-053-0090.

(4) Prohibited use for human consumption. A person may not use graywater for drinking, personal hygiene bathing, showering, cooking, dishwashing or maintaining oral hygiene regardless of the level of treatment, unless approved in writing by the department and with written approval from the Oregon Health Authority.

(5) Connection to a wastewater disposal system. Unless authorized by the department in a permit issued under OAR 340-053-0110(2) or OAR 340-071-0162, a person may not construct, install or operate a graywater reuse and disposal system unless the system is connected to an approved sewerage system or a functioning onsite wastewater treatment system approved under OAR 340-071.

(6) Surface and stormwater discharges prohibited. A person may not allow graywater to discharge to surface waters of the state, a municipal separate storm sewer system (MS4), an industrial stormwater system or a stormwater management structure.

(7) Groundwater protection. The department will not authorize a graywater reuse and disposal system for use unless the groundwater quality protection requirements in OAR chapter 340, division 40 are met. The requirements in OAR chapter 340, division 40 are presumed to be met

if the graywater is applied in a manner and at a rate that minimizes the movement of contaminants to groundwater and does not adversely impact groundwater quality. If the use of graywater occurs in a designated groundwater management area declared under ORS 468B.180, a wellhead protection area established under OAR 340-040-0140 through 340-040-0210, or a geographic region identified in an area wide aquifer management plan established by OAR 340-040-0070, the department may require additional conditions to be met.

(8) Graywater limitations. A person must divert the following wastewaters to an approved sewerage system, a functioning onsite wastewater treatment system or holding tank system approved under OAR 340-071:

(a) Wastewater originating from kitchen sinks that has not passed through primary graywater treatment;

(b) Wastewater from dishwashers or garbage disposals or both;

(c) Wastewater resulting from the washing of soiled diapers or other similarly infectious or soiled materials; and

(d) Wastewater containing residual waste from activities such as, but not limited to, cleaning of oily rags; rinsing of paint brushes; disposal of pesticides, herbicides, or other chemicals; or disposal of waste solutions from hobbyist activities like home photo labs.

(9) Waste strength limitations. A person may not divert graywater from an onsite wastewater treatment system if the resulting septic tank effluent concentration exceeds the criteria for residential strength wastewater as defined in OAR 340-071-0100. If the resulting septic tank effluent concentration does exceed the criteria for residential strength wastewater, the owner or operator of the graywater reuse and disposal system must take appropriate measures to reduce the septic tank effluent waste strength, such as but not limited to reducing the amount of graywater diverted from the onsite wastewater treatment system.

(10) Graywater reuse and disposal system design flow. A person must design a graywater reuse and disposal system to treat, store or use the volume of graywater needed for the intended beneficial purpose or purposes. Graywater in excess of the design flow must be diverted to an approved sewerage system, or a functioning onsite wastewater treatment system or holding tank system approved under OAR 340-071. The department will use the design flows in Table 1 to determine the appropriate graywater reuse and disposal system permit and may require a person to use the graywater flow volumes in Table 1 in the design of a graywater reuse and disposal system.

(11) System design plan. The owner or operator of a graywater reuse and disposal system must have and maintain a written system design plan and must transfer it to the new owner or operator on property transfer.

(a) The system design plan must include, but is not limited to, the following information:

(A) Location of the system;

(B) Fixtures that are the source of graywater;

(C) Design flow of the graywater reuse and disposal system;

(D) Design of the distribution and reuse system;

(E) Description of any graywater treatment system used;

(F) Beneficial purposes; and

(G) Name and contact information for the person responsible for the design of the system.

(b) For graywater reuse and disposal systems producing greater than 300 gallons per day for irrigation, the system design plan must include the irrigation design, including but not limited to, pipe and valve sizes, discharge areas and rates.

(12) Operation and maintenance. The owner or operator of a graywater reuse and disposal system must operate and maintain the system in compliance with all permit conditions and applicable requirements of this division.

(13) Operation and maintenance manual.

(a) The owner or operator of a graywater reuse and disposal system must maintain a written operation and maintenance manual that includes, but is not limited to, the following:

(A) A detailed description of the graywater system, including any graywater treatment;

(B) A detailed description of any activities required to operate and maintain the system;

(C) If monitoring is required by the rules of this division, graywater monitoring procedures; and

(D) If required by the rules of this division, a description of how the public and personnel at the use area will be notified of graywater use.

(b) On the transfer of a property with a graywater reuse and disposal system, the person releasing claim to the property must ensure the operation and maintenance manual remains with the system.

(14) Reporting. When required by permit or the rules of this division, the owner or operator of a graywater reuse and disposal system must submit an annual report to the department with a certification statement that during the previous year, the system was operated in compliance with the rules of this division and the permit limits and conditions for graywater reuse. At minimum, the report must also include a description of the operation and maintenance of the system, including any required monitoring results.

(a) The annual report must be received by the department by the date specified in the permit.

(b) If the department does not receive an annual report by the date specified in the permit, the owner or operator of a graywater reuse and disposal system must pay a penalty fee equal to the annual fee specified in OAR 340-045-0070.

(15) Graywater irrigation site evaluation. A person must evaluate and ensure that a graywater irrigation site meets the irrigation site selection and management requirements specified in OAR 340-053-0090. When required by the rules of this division, a person must submit to the department for review and approval a site evaluation report including, but not limited to, the following site information:

(a) A diagram of the property receiving graywater showing:

(A) Area and slope of the graywater reuse area;

(B) Surface streams, springs or other bodies of water;

(C) Onsite wastewater treatment systems;

(D) Stormwater management structures or stormwater collection systems;

(E) Existing and proposed wells;

(F) Escarpments, cuts and fills; and

(G) Any unstable landforms;

(b) Parcel size;

(c) Soil profile descriptions, including water infiltration rates;

(d) Water table levels;

(e) Description of vegetation in the reuse area;

(f) Evapotranspiration rates for the vegetation during the period of use; and

(g) Any other observations or information relevant to the evaluation of the graywater irrigation site, including offsite features, as appropriate.

(16) Property lines crossed. A person may reuse graywater only on the property on which it was generated, unless all of the following conditions are met:

(a) Both the person generating graywater and the person reusing graywater agree to reuse graywater in accordance with the rules in this division.

(b) A written agreement exists and is being honored between the person generating graywater and the person who owns the property where graywater reuse occurs.

(c) The state's officers, agents, employees and representatives are allowed access to enter and inspect all portions of the graywater reuse and disposal system, regardless of location.

(17) Land use evaluation. A person is not required to obtain a land use compatibility statement (LUCS) signed by the local planning agency for a graywater reuse and disposal system producing less than 1,200 gallons per day if the system is connected to an approved sewerage system or an onsite wastewater treatment system approved under OAR 340-071.

(18) Additional permit limitations and conditions. The department may include additional permit limitations or conditions to protect public health or the environment.

Stat. Auth.: ORS 454.610, ORS 454.625, ORS 468.020, & ORS 468B.010
Stats. Implemented: ORS 454.610, ORS 454.615, ORS 468B.020 & ORS 468B.050
Hist.:

340-053-0090

Graywater Quality and Standards for Reuse

(1) All graywater. Unless otherwise approved by the department in writing, the following requirements apply to all types of graywater:

(a) Beneficial purposes.

(A) A person may use graywater only for the beneficial purposes described in this rule and must divert graywater not suitable for reuse or graywater exceeding the volume required for a beneficial purpose to an approved sewerage system, or a functioning onsite wastewater treatment system or holding tank system approved under OAR 340-071.

(B) A person may request an alternative beneficial purpose not specified in this rule and must demonstrate to the department's satisfaction that public health and the environment would be adequately protected. The department, in a permit issued under OAR 340-053-0110(2), will include limitations or conditions or both necessary to protect public health and the environment.

(b) Treatment. All graywater originating from kitchen sinks must pass through primary graywater treatment.

(c) Setback distances.

(A) Except as otherwise allowed under this rule, a person may not operate a graywater reuse and disposal system unless it is designed and installed to meet the minimum horizontal separation distances in Table 2.

(B) On a case-by-case basis, the department may consider and approve in a permit issued under OAR 340-053-0110(2) a setback distance other than what is required in this rule. A person requesting a reduced setback distance must demonstrate to the department's satisfaction that public health and the environment would be adequately protected.

(d) Access and exposure. The owner or operator of a graywater reuse and disposal system must take all reasonable steps to ensure that contact with graywater by humans and domestic pets is avoided.

(e) Irrigation site selection and management. The owner or operator of a graywater reuse and disposal system may not use graywater for irrigation unless the following requirements are satisfied:

(A) Irrigation sites must be located on stable geologic formations that are not subject to flooding or excessive runoff from adjacent land at the time of irrigation.

(B) Graywater must not be applied to areas with slopes exceeding 45 percent.

(C) Graywater must not be discharged to frozen or saturated soils.

(D) At the time of irrigation, the minimum separation distance between the point of graywater discharge and the groundwater must be at least four feet.

(E) Irrigation may occur only when evapotranspiration rates exceed natural precipitation.

(F) The soil and vegetation in the irrigation area must have capacity to accommodate the volume and rate of graywater applied so that discharge to surface water or groundwater does not occur.

(2) Type 1 graywater. In addition to the requirements in section 1 of this rule, the following requirements apply to the use of Type 1 graywater:

(a) Beneficial purposes. A person may use Type 1 graywater only for the following beneficial purposes and only if the rules of this division are met:

(A) Subsurface irrigation of gardens, lawns and landscape plants;

(B) Subsurface irrigation of food crops, except root crops or crops that have edible portions that contact graywater;

(C) Subsurface irrigation of vegetated roofs that do not drain to stormwater management structures; and

(D) Subsurface irrigation of compost.

(b) Treatment. Type 1 graywater is presumed to contain dissolved oxygen if it has been stored 24 hours or less and does not have an objectionable odor.

(c) Access and exposure. A person may not use Type 1 graywater for subsurface irrigation unless the point of graywater discharge is covered by at least two inches of soil, mulch, compost or other suitable material.

(d) Site management. A person may use Type 1 graywater only if the following site management requirements are met:

(A) Type 1 graywater must not be stored for more than 24 hours.

(B) When irrigating a parcel for the production of a food crop, the edible portion of the crop must not contact the graywater, and fruit or nuts must not be harvested off the ground for human consumption.

(C) Graywater must not surface, pond or runoff.

(3) Type 2 graywater. In addition to the requirements listed in section 1 of this rule, the following requirements apply to the use of Type 2 graywater:

(a) Beneficial purposes. A person may use Type 2 graywater only for the following beneficial purposes and only if the rules of this division are met:

(A) Any beneficial purpose defined in subsection (2)(a) of this rule;

(B) Landscape ponds not intended for human contact; and

(C) Surface drip irrigation of gardens, lawns, living walls, greenhouses and landscape plants.

(b) Treatment. Type 2 graywater must meet the following secondary graywater treatment criteria:

(A) A five-day biochemical oxygen demand concentration of 10 mg/L or less and

(B) A total suspended solids concentration of 10 mg/L or less.

(c) Monitoring. The owner or operator of a graywater reuse and disposal system must monitor Type 2 graywater as follows:

(A) Analysis of graywater quality must be made on a sample collected at a time and from a location representative of the quality of graywater produced. Monitoring for five-day biochemical oxygen demand and total suspended solids must occur at the following frequencies:

(i) A system producing 300 gallons per day or less must be sampled at least one time per calendar year.

(ii) A system producing greater than 300 gallons per day must be sampled at least two times per calendar year.

(B) The department may reduce monitoring requirements for a technology-based graywater treatment system that satisfies the requirement of OAR 340-053-0100(2)(a) and is used as specified by the manufacturer.

(d) Access and exposure. A person may not use Type 2 graywater unless the public is restricted from direct contact with the graywater.

(e) Site management practices. A person may not use Type 2 graywater unless the following site management requirements are met:

(A) When irrigating a parcel for the production of a food crop, the edible portion of the crop must not contact the graywater, and fruit or nuts must not be harvested off the ground for human consumption.

(B) When using graywater on a parcel for a surface irrigation or a landscape pond, signs must be posted at the use area and be visible to the public. The signs must state graywater is used and is not safe for drinking.

(C) Unless authorized by the department in a permit issued under OAR 340-053-0110(2), when using graywater for a landscape pond, the pond must not combine or effect a junction with underground waters.

(4) Type 3 graywater. In addition to the requirements listed in section 1 of this rule, the following requirements apply to the use of Type 3 graywater:

(a) Beneficial purposes. A person may use Type 3 graywater for the following beneficial purposes and only if the rules of this division are met:

(A) Any beneficial purpose defined in subsection (3)(a) of this rule;

(B) Sprinkler irrigation of gardens, lawns, living walls, greenhouses and landscape plants;

(C) Wash water for mechanical cleaning of equipment, cars, sidewalks and streets;

(D) Industrial, commercial or constructions uses limited to industrial cooling, rock crushing, aggregate washing, mixing concrete and dust control; and

(E) Stand-alone fire suppressions system in commercial and residential buildings, toilet or urinal flushing, or floor drain trap priming.

(b) Treatment. Type 3 graywater must meet the following criteria:

(A) Secondary Treatment. Prior to disinfection, graywater must meet the secondary treatment criteria in subsection (3)(b) of this rule.

(B) Disinfection. After disinfection, graywater must not exceed a median of 2.2 total coliform organisms per 100 milliliters, based on results of the last seven days that analyses have been completed, and 23 total coliform organisms per 100 milliliters in any single sample.

(c) Monitoring. The owner or operator of a graywater reuse and disposal system must monitor Type 3 graywater as follows:

(A) Graywater analyses must be performed on a representative sample collected at a time and from a location representative of the quality of graywater produced.

(B) Monitoring for secondary treatment criteria must occur, at a minimum, at the frequency prescribed in subsection (3)(c) of this rule.

(C) Monitoring of a graywater disinfection system for total coliform organisms must occur three times per week at a minimum.

(d) Setback distances. In addition to the setback distance requirements listed in subsection (1)(c) of this rule, a person may use Type 3 graywater for sprinkler irrigation only if the following setback distances are followed:

(A) There must be a minimum of 10 feet from the edge of the site used for irrigation and the site property line.

(B) Graywater must not be sprayed within 10 feet of an area where food is being prepared or served, or where a drinking fountain is located.

(e) Access and exposure. A person may use Type 3 graywater only if the following access and exposure requirements are met:

(A) During irrigation of a public landscape, the public must be restricted from direct contact with the graywater.

(B) If aerosols are generated when using graywater for an industrial, commercial or construction purpose, the aerosols must not create a public health hazard.

(C) When using graywater for an agricultural or horticultural purpose where sprinkler irrigation is used, or an industrial, commercial or construction purpose, the public and personnel at the use area must be notified that the water used is graywater and is not safe for drinking. The operations and maintenance plan must specify how notification will be provided.

(f) Site management practices. A person may use Type 3 graywater only if the following requirements are met:

(A) Irrigation of processed food crops where the edible portion of the plant is in contact with graywater is prohibited for three days before harvesting.

(B) When using graywater for a landscape impoundment or for irrigating a public-accessible area such as, but not limited to, a golf course, park, cemetery, highway median, or industrial or business campus, signs must be posted at the use area and be visible to the public. The signs must state graywater is used and is not safe for drinking.

(C) Unless authorized by the department in a permit issued under OAR 340-053-0110(2), when using graywater for a landscape pond, the pond must not combine or effect a junction with underground waters.

(D) Aerator or decorative fixtures that may generate aerosols from graywater are allowed only if authorized in writing by the department.

Stat. Auth.: ORS 454.610, ORS 454.625, ORS 468.020, & ORS 468B.010
Stats. Implemented: ORS 454.610, ORS 454.615, ORS 468B.020 & ORS 468B.050
Hist.:

340-053-0100

Graywater Reuse and Disposal System Design and Construction Standards

(1) Graywater collection system. A person may not install a graywater collection system unless it complies with the following requirements:

(a) All pipes, valves and other plumbing appurtenances of the graywater collection system must comply with the requirements of the Oregon Plumbing Specialty Code.

(b) Unless otherwise approved in writing by the department, a warning sign must be must be visible at each fixture from which graywater is diverted in a nonresidential building. The signs must notify the employees and public that water from the fixture is reused and that chemicals, petroleum oils and hazardous materials must not be disposed down the drain.

(2) Treatment system. In order to meet the rules of this division for Type 2 and Type 3 graywater, a person may install a graywater treatment system that meets one of the following requirements:

(a) A technology-based graywater treatment system that bears the appropriate graywater product standard seal of approval from the American National Standards Institute (ANSI), the International Association of Plumbing and Mechanical Officials (IAPMO), the Canadian Standards Association (CSA), or any other standard setting body recognized by both the department and the Oregon Department of Business Services, Building Codes Division, to establish graywater product standard requirements.

(b) A performance-based treatment system capable of meeting the treatment requirements in OAR 340-053-0090(3)(b) or 340-053-0090(4)(b).

(3) Diversion valve. A person may not install a graywater reuse and disposal system unless the system has a graywater diversion valve that allows graywater flow to be directed between beneficial reuse and either an approved sewerage system, or a functioning onsite wastewater treatment system or holding tank system approved under OAR 340-071. The graywater diversion valve must be readily accessible and clearly labelled. The diversion valve must be constructed of material that is durable, corrosion resistant, watertight and designed to accommodate the inlet and outlet pipes in a secure and watertight manner.

(4) Cross connection control. A person may not install a direct-connection between a potable water supply system and graywater reuse and disposal system. The department may authorize in writing the discharge of potable water to a graywater reuse and disposal system that uses an air gap separation or other back flow prevention device allowed under Oregon Plumbing Specialty Code and has been permitted by the community water system having jurisdiction.

(5) Storage and surge tanks. A person may install a graywater reuse and disposal system storage or surge tank only if it is:

(a) Sized to accommodate peak graywater flow;

(b) Fitted with controls to limit access to humans, domestic pets and vectors;

(c) Installed below ground on level, well-compacted soil, or above ground on a level, stable footing, per the manufacturer's installation instructions;

(d) Equipped with an antibuoyancy device, if installed below ground where high groundwater could dislodge the tank;

(e) Designed to prevent overturning, if installed above ground;

(f) Labelled with "Caution – Nonpotable Water – Not Safe to Drink" to identify it as containing nonpotable water; and

(g) Fitted with an overflow drain with a diameter at least equal to that of the inlet that flows by gravity to an approved sewerage system, or a functioning onsite wastewater treatment system or holding tank system approved under OAR 340-071. The overflow drain must not be equipped with a shutoff valve.

(6) Distribution system. A person may not install a graywater reuse and disposal system unless the distribution system, excluding irrigation components, satisfies the following requirements:

(a) All piping and other plumbing components must be listed by an ANSI accredited product listing program.

(b) System components must be properly identified as to the manufacturer.

(c) Installation must conform to the equipment and installation methods identified by the manufacturer and product listing.

(d) All exterior graywater piping, valves and other graywater equipment must be marked or labelled to identify it as containing nonpotable water. All exterior piping and tanks must be labelled: "Caution – Nonpotable Water – Not Safe to Drink."

(7) Irrigation system. A person installing a graywater irrigation system must ensure the irrigation components are marked or labeled as containing nonpotable water and meet the irrigation specifications in the system design plan.

(8) Graywater reuse and disposal system abandonment. A person abandoning a graywater reuse and disposal system must remove the graywater diversion valve and direct all graywater flow to an approved sewerage system or an onsite wastewater treatment system approved under OAR 340-071.

Stat. Auth.: ORS 454.610, ORS 454.625, ORS 468.020, & ORS 468B.010
Stats. Implemented: ORS 454.610, ORS 454.615, ORS 468B.020 & ORS 468B.050
Hist.:

OAR 340-053-0110

Permit Requirements for Graywater Reuse and Disposal Systems

(1) Graywater reuse and disposal system WPCF general permits. Under OAR 340-045-0033, the department may issue general permits for certain categories of minor discharge sources or minor activities where individual WPCF permits are not necessary to adequately protect public health or the environment. The department will use the following categories when issuing a graywater reuse and disposal system WPCF general permit:

(a) Tier 1 graywater reuse and disposal system WPCF general permit.

(A) A graywater reuse and disposal system meeting the following criteria is eligible for coverage under a Tier 1 graywater reuse and disposal system WPCF general permit unless a specific geographic area graywater reuse and disposal system WPCF general permit is required:

(i) Total graywater flow must not exceed 300 gallons per day;

(ii) Graywater must only originate from a single family residence or residential duplex; and

(iii) The system produces Type 1 graywater used only for subsurface irrigation.

(B) A person requesting coverage under a Tier 1 graywater reuse and disposal system general permit must apply for permit coverage as directed by the general permit and pay fees as specified in OAR 340-045-0070.

(C) Except in years when the Tier 1 graywater reuse and disposal system WPCF general permit is renewed, the department will waive or reduce the annual fee specified in OAR 340-045-0070

if an annual report for the previous year meeting the requirements of OAR 340-053-0080(14) is submitted timely to the department on a department-approved form.

(b) Tier 2 graywater reuse and disposal system WPCF general permit.

(A) A graywater reuse and disposal system meeting the following criteria is eligible for coverage under a Tier 2 graywater reuse and disposal system WPCF general permit unless a specific geographic area graywater reuse and disposal system WPCF general permit is required:

(i) Total graywater flow must not exceed 1,200 gallons per day;

(ii) Graywater originates from any residential, commercial or institutional structure; and

(iii) The system only produces Type 1 or Type 2 graywater.

(B) A person requesting coverage under a Tier 2 graywater reuse and disposal system WPCF general permit must apply for permit coverage as directed by the general permit and pay fees as specified in OAR 340-045-0070. In addition, the following information is required:

(i) A system design plan meeting the requirements of OAR 340-053-0080(11);

(ii) An operations and maintenance manual meeting the requirements of OAR 340-053-0080(13);

(iii) A site evaluation report meeting the requirements of OAR 340-053-0080(15);

(iv) For a system using performance-based treatment, treatment system plans and specifications showing how the system will meet the requirements in OAR 340-053-0090(3)(b);

(v) For a system diverting graywater from an onsite wastewater treatment system approved under OAR 340-071, plans and specifications certified and signed by a professional engineer registered in accordance with ORS 672 or a wastewater specialist registered in accordance with ORS 700 to not result in a septic tank effluent concentration exceeding the criteria for residential strength wastewater; and

(vi) Any other information requested by the department as necessary to evaluate the permit application.

(C) The owner or operator of a graywater reuse and disposal system covered under a Tier 2 permit must submit to the department an annual report meeting the requirements of OAR 340-053-0080(14) on a form approved by the department as specified in the permit.

(c) Specific geographic area graywater reuse and disposal system WPCF general permit.

(A) When necessary to protect public health or the environment, the department may issue a graywater reuse and disposal system WPCF general permit that covers a specific geographic area.

(B) A person required to be covered under a graywater reuse and disposal system WPCF general permit for a specific geographic area must apply for permit coverage as directed by the geographic area graywater reuse and disposal system WPCF general permit.

(C) Except in years when the specific geographic graywater reuse and disposal system WPCF general permit is renewed, the department may waive or reduce the annual fee specified in OAR 340-045-0070 if an annual report for the previous year meeting the requirements of OAR 340-053-0080(14) is submitted timely to the department on a department-approved form.

(2) Graywater reuse and disposal system WPCF individual permit (Tier 3 graywater reuse and disposal system WPCF individual permit).

(a) Any person seeking to obtain a permit for a graywater reuse and disposal system that is not covered by a graywater reuse and disposal system WPCF general permit or any person not wishing to be covered by a general permit may apply for a graywater reuse and disposal system WPCF individual permit issued under OAR 340-045-0037.

(b) To apply for a Tier 3 graywater reuse and disposal system WPCF individual permit or modify an existing individual permit, a person must submit the following information:

(A) An application on a form approved by the department;

(B) WPCF permit fees specified in Table 9D of OAR 340-071-0140, including the annual compliance determination fee for "Other systems with design capacities less than 20,000 gpd" or "Other systems with design capacities greater than 20,000 gpd";

(C) A system design plan meeting the requirements of OAR 340-053-0080(11);

(D) An operations and maintenance manual meeting the requirements of OAR 340-053-0080(13);

(E) A copy of a site evaluation report meeting the requirements of OAR 340-053-0080(15);

(F) For any system producing Type 2 or Type 3 graywater, treatment system plans and specifications showing how the system will meet the requirements in OAR 340-053-0090(3)(b) for Type 2 graywater or OAR 340-053-0090(4)(b) for Type 3 graywater. For any system producing greater than 1,200 gallons per day, the plans and specifications must be signed by a professional engineer registered in accordance with ORS 672 or a wastewater specialist registered in accordance with ORS 700 and reviewed and approved in accordance with OAR chapter 340, division 52;

(G) For a system diverting graywater from an onsite wastewater treatment system approved under OAR 340-071, plans and specifications certified and signed by a professional engineer registered in accordance with ORS 672 or a wastewater specialist registered in accordance with ORS 700 to not result in a septic tank effluent concentration exceeding the criteria for residential strength wastewater as defined in OAR 340-071-0100; and

(H) Any other information requested by the department as necessary to complete the permit application.

(c) Where allowed by the rules of this division, the applicant for a Tier 3 graywater reuse and disposal system WPCF individual permit may request permit conditions different from those described in this division. The request must describe how those alternate conditions will protect public health and the environment.

(d) The department will review the information listed in subsection (3)(b) of this rule and determine permit conditions necessary to protect public health and the environment. At a minimum, permit conditions will include:

(A) The monitoring requirements in OAR 340-053-0090; and

(B) A requirement that the graywater system owner must submit an annual report to the department describing the effectiveness of the system to comply with the operations and maintenance plan, the permit limits and conditions, and the rules of this division.

(3) Program agent. The department may enter an agreement with a local government authorizing that local government to become the department's agent for permitting graywater reuse and disposal systems, including receiving and processing applications, issuing permits, enforcing and performing required inspections. The department retains responsibility to develop specific geographic area graywater reuse and disposal system WPCF general permits and graywater reuse and disposal system WPCF individual permits.

(a) A program agent must:

(A) Agree to implement and operate a program consistent with the rules of this division;

(B) Specify their geographic area of responsibility;

(C) Submit to the department for approval a graywater program implementation plan that describes how their graywater program will meet the rules of this division;

(D) Adopt and submit to the department a fee schedule for services rendered and permits issued;

(E) Agree to forward the proceeds of a mutually established surcharge fee to the department to offset program administration and oversight costs;

(F) When appropriate for the geography, climate or other environmental considerations of a specific geographic area, request the department develop one or more geographic permits authorizing graywater discharges in the area of authorization;

(G) Provide permit applicants with information on how to apply for a permit;

(H) Review permit applications for completeness and accuracy;

(I) Approve or deny coverage under a graywater reuse and disposal system permit based on information submitted by the applicant;

(J) Review and maintain any monitoring data or annual reports or both;

(K) Maintain all records in accordance with the State Record Retention Schedule;

(L) Provide the department an annual update with information on the number of applications for coverage under a permit as well as the location of any systems with new, renewed, expired or revoked coverage; and

(M) Respond to any complaints associated with graywater discharges in their jurisdiction.

(b) The department may:

(A) Provide the agent with any necessary graywater forms or application materials;

(B) Assist the agent in reviewing applications when requested;

(C) Coordinate with the agent on renewing permit registrant coverage under newly issued general permits;

(D) Evaluate and respond to any request for a specific geographic area graywater reuse and disposal system WPCF general permit or deny the request with appropriate justification;

(E) Provide assistance, training and program guidance to the agent that ensures the program is being implemented consistently; and

(F) Provide assistance to the agent with complaint response, system inspections, and enforcement.

(c) The department and the agent must meet at least once annually to exchange information regarding permit administration, implementation, technical issues, training and program guidance.

Stat. Auth.: ORS 454.610, ORS 454.625, ORS 468.020, & ORS 468B.010
Stats. Implemented: ORS 454.610, ORS 454.615, ORS 468B.020 & ORS 468B.050
Hist.:

OAR 340-053-0080, Table 1: Design flows for graywater reuse and disposal systems

Type of Establishment		Gallons Per Unit Per Day	Minimum Gallons Per Establishment Per Day
Airports		2.4 (per passenger)	72
Bathhouses and swimming pools		4.8 (per person)	144
Camps: (4 Persons per Campsite, where Applicable)	Campground with central comfort stations	16.8 (per person)	336
	With flush toilets, no showers	12 (per person)	240
	Construction camps — semipermanent	24 (per person)	480
	Day camps — no meals served	7.2 (per person)	144
	Resort camps (night and day) with limited plumbing	24 (per person)	480
	Luxury camps	48 (per person)	960
Churches		2.4 (per seat)	72
Country clubs		4.8 (per resident member) 12 (per nonresident member present)	960
Dwellings:	Boarding houses	72 (per bedroom)	288
	Boarding houses – additional for nonresidential boarders	4.8 (per person)	—
	Rooming houses	38.4 (per person)	240
	Condominiums, Multiple family dwellings — including apartments	144 (per unit)	432
	Single family dwellings	36 (per bedroom for third & each succeeding bedroom)	216
Factories (exclusive of industrial wastes — with shower facilities)		16.8 (per person per shift)	144
Factories (exclusive of industrial wastes — without shower facilities)		7.2 (per person per shift)	72
Hospitals		120 (per bed space)	1200
Hotels with private baths		57.6 (per room)	288
Hotels without private baths		48 (per room)	240
Institutions other than hospitals		60 (per bed	600

Type of Establishment		Gallons Per Unit Per Day	Minimum Gallons Per Establishment Per Day
		space)	
Laundries — self-service		400 (per machine)	2000
Mobile home parks		120 (per space)	360
Motels — with bath, toilet, and kitchen wastes		48 (per bedroom)	240
Motels — without kitchens		38.4 (per bedroom)	192
Picnic Parks — toilet wastes only		0 (per picnicker)	0
Picnic Parks — with bathhouses, showers, and flush toilets		4.8 (per picnicker)	144
Restaurants		19.2 (per seat)	384
Restaurants — single-service		0.96 (per customer)	144
Restaurants — with bars and/or lounges		24 (per seat)	480
Schools:	Boarding	48 (per person)	1440
	Day — without gyms, cafeterias, or showers	7.2 (per person)	216
	Day — with gyms, cafeterias and showers	12 (per person)	360
	Day — with cafeteria, but without gyms or showers	9.6 (per person)	288
Service Stations		4.8 (per vehicle served)	240
Swimming pools and bathhouses		4.8 (per person)	144
Theaters:	Movie	2.4 (per seat)	144
	Drive-In	9.6 (per car space)	480
Travel trailer parks — without individual water and sewer hookups		24 (per space)	144
Travel trailer parks — with individual water and sewer hookups		48 (per space)	240
Workers:	Construction — as semipermanent camps	24 (per person)	480
	Day — at schools and offices	7.2 (per shift)	72

OAR 340-053-0090, Table 2: Minimum horizontal separation distances in feet.

Feature requiring setback	Graywater storage or surge tank	Point of graywater discharge to landscape for irrigation or edge of landscape pond		
		Type 1	Type 2	Type 3
Groundwater supplies and wells	50	100	50	50
Springs	50	100	50	50
Surface waters of the state, excluding springs	50	50	25	25
Stormwater management structures, collection systems, and catch basins	10	10	10	10
Underground Injection Control Systems (UICs)	10	10	10	10
Property boundaries	5	2	2	*
Building structures	0	0	0	*
* Where sprinkler irrigation is used, there must be 10 feet from the edge of the site used for irrigation and the property boundary and graywater must not be sprayed within 10 feet of an area where food is being prepared or served, or where a drinking fountain is located.				

Department of Environmental Quality

Division 45

Regulations Pertaining to NPDES and WPCF Permits

340-045-0070

Permit Fees

(1) Except for a person assigned to the 700-PM general permit, a person required to have a WPCF or NPDES permit is subject to a two-part fee consisting of the applicable new ~~-~~ permit application fee and annual fee in OAR 340-045-0075.

(a) ~~The~~ A person submitting an application for a new NPDES or WPCF permit must submit the amount equal to the new ~~-~~ permit application fee and the first year's annual fee ~~must be submitted with any application for a new NPDES or WPCF permit.~~.

(b) ~~No fee~~A person is not required to ~~be submitted~~submit a fee with an application for renewal of a NPDES or WPCF permit, unless the permit is to be modified as described in OAR 340-045-0075. ~~If the~~A person requesting a permit ~~is to be modified, then~~modification must submit the appropriate modification fee in OAR 340-045-0075 ~~must be submitted~~ with the application.

(c) ~~No fee~~A person is not required to pay a fee for modification of an existing, unexpired permit if the ~~Department~~department initiates the modification and determines the modification does not require re-filing or ~~Department~~department review of an application, plans, or specifications.

(d) When a governmental entity has an agreement with the ~~Department~~department to assist with implementation of a general permit, the ~~Department~~department may in that agreement lower the general permit fees established in OAR 340-045-0075 and allow the governmental entity to collect the fee for the ~~Department~~department and retain a portion of the fee for its services.

(2) ~~The~~ A person must pay the applicable annual fee in OAR 340-045-0075 ~~must be paid~~ for as long as the permit is active.

(a) The annual fee must be paid by the date specified by the ~~Department. Fees adopted after July 1, 2006 but prior to June 30, 2007 will be retroactive to July 1, 2006~~department.

(b) The department will apply the annual fee submitted as part of an application for a new NPDES or WPCF permit ~~applies~~ to the first 12 months the permitted facility is put into operation.

(c) The ~~Director~~director may alter the due date for the annual fee upon receipt of a justifiable request from a permittee. The ~~Commission~~commission may reduce or suspend the annual fee if a hardship is demonstrated.

(3) The department may refund a new ~~-~~permit application fee submitted ~~with an application may be refunded~~ in whole or in part if the ~~Department~~department determines that:

(a) A permit is not required; or

(b) The wrong application was filed.

(4) All fees must be made payable to the Department of Environmental Quality or the ~~Department's~~department's agent.

(5) A person assigned to the 700-PM general permit must pay either an annual fee or an optional 5-year permit registration fee according to the schedule provided in OAR 340-045-0075. The applicable fee must be submitted with the permit application and is non-refundable unless the ~~Department~~department or the ~~Department's~~department's agent determines that the permittee cannot be assigned to the general permit. Fees must be made payable to the Department of Environmental Quality. An annual fee must be paid at the time of application, and for each following year that the permit is valid on a date specified by the ~~Department~~department.

Stat. Auth.: ORS 454.625, 454.745, 468.020, 468B.020 & 468B.035
Stats. Implemented: ORS 454.745, 468.065, 468B.015, 468B.035 & 468B.050
Hist.: DEQ 113, f. & ef. 5-10-76; DEQ 129, f. & ef. 3-16-77; DEQ 31-1979, f. & ef. 10-1-79; DEQ 18-1981, f. & ef. 7-13-81; DEQ 12-1983, f. & ef. 6-2-83; DEQ 27-1994, f. & cert. ef. 11-15-94; DEQ 2-2002, f. & cert. ef. 2-12-02; DEQ 7-2004, f. & cert. ef. 8-3-04; DEQ 5-2005, f. & cert. ef. 7-1-05; DEQ 11-2006, f. & cert. ef. 8-15-06

340-045-0075

Permit Fee Schedule

(1) The fee schedule for onsite sewage disposal system permits, including WPCF permits, and graywater reuse and disposal system WPCF individual permits is found in OAR chapter 340, division 071.

(2) The ~~Department~~department has established fees for various industrial, domestic and general permit categories. The industrial and domestic permit categories and fees are listed in Tables 70B and 70C. The general permit categories are defined in OAR 340-045-0033 and the fees are listed in Table 70G.

(3) The ~~Department~~department must consider the following criteria when classifying a facility for determining applicable fees. For industrial sources that discharge to surface waters, discharge flowrate refers to the system design capacity. For industrial sources that do not discharge to surface waters, discharge flow refers to the total annual flow divided by 365:

(a) Tier 1 industry. A facility is classified as a Tier 1 industry if the facility:

(A) Discharges at a flowrate that is greater than or equal to 1 mgd; or

(B) Discharges large biochemical oxygen demand loads; or

(C) Is a large metals facility; or

(D) Has significant toxic discharges; or

(E) Has a treatment system that will have a significant adverse impact on the receiving stream if not operated properly; or

(F) Needs special regulatory control, as determined by the ~~Department~~department.

(b) Tier 1 domestic facility. A facility is classified as a Tier 1 domestic facility if the facility:

(A) Has a dry weather design flow of 1 mgd or greater; or

(B) Serves an industry that can have a significant impact on the treatment system.

(c) Tier 2 industry or domestic facility: does not meet Tier 1 qualifying factors.

(4) New ~~Permit Application Fee.~~ permit application fee. Unless waived by this rule, the applicable new ~~-~~ permit application fee listed in Table 70A, 70C or 70G (available on the ~~Department's~~department's website or upon request) must be submitted with each application. The amount of the fee is based on the facility category and type of permit (e.g., individual vs. general).

(5) Permit ~~Modification Fee.~~modification fee. Permit modification fees are listed in Tables 70A and 70C (available on the ~~Department's~~department's website or upon request). They vary with the type of permit, the type of modification and the timing of modification as follows:

(a) Modification at time of permit renewal:

(A) Major ~~Modification~~modification -- involves an increase in effluent limitations or any other change that involves significant analysis by the ~~Department~~department;

(B) Minor ~~Modification~~modification -- does not involve significant analysis by the ~~Department~~department.

(b) Modification prior to permit renewal:

(A) Major ~~Modification~~modification -- involves an increase in effluent limitations or any other change that involves significant analysis by the ~~Department~~department. A permittee requesting a

significant modification to their permit may be required by the ~~Department~~department to enter into an agreement to pay for these services according to ORS 468.073. ORS 468.073 allows the ~~Department~~department "to expedite or enhance a regulatory process by contracting for services, hiring additional staff or covering costs of activities not otherwise provided during the ordinary course of ~~Department~~department business;"

(B) Minor ~~Modification~~modification -- does not involve significant analysis by the ~~Department~~department.

(6) Annual fees. Applicable annual fees for General and Industrial permit holders may be found in Tables 70G and 70B (available on the ~~Department's~~department's website or upon request). Annual fees for domestic sources may also be found in Table 70C (available on the ~~Department's~~department's website or upon request), and consist of the following:

(a) Base annual fee. This is based on the type of treatment system and the dry weather design flow;

(b) Population-based fee. A permit holder with treatment systems other than Type F (septage alkaline stabilization facilities) must pay a population-based fee. The applicable fee may be found in Table 70D (available on the ~~Department's~~department's website or upon request);

(c) Pretreatment fee. A source required by the ~~Department~~department to administer a pretreatment program pursuant to federal pretreatment program regulations (40CFR, Part 403; January 29, 1981 and amendments thereto) must pay an additional annual fee plus a fee for each significant industrial user specified in their annual report for the previous year. The applicable fee may be found in Table 70E (available on the ~~Department's~~department's website or upon request).

(7) Technical ~~Activities Fee~~activities fee. Technical activity fees are listed in Tables 70F and 70H (available on the ~~Department's~~department's website or upon request). They are categorized as follows:

(a) All ~~Permits~~permits. A permittee must pay a fee for NPDES and WPCF permit-related technical activities. A fee will be charged for initial submittal of engineering plans and specifications. Fees will not be charged for revisions and re-submittals of engineering plans and specifications or for facilities plans, design studies, reports, change orders, or inspections;

(b) General ~~Permits~~permits. A permittee must pay the technical activity fee shown in Table 70H (available on the ~~Department's~~department's website or upon request) when the following activities are required for application review:

(A) Disposal system plan review;

(B) Site inspection and evaluation.

(8) For permits administered by the Oregon Department of Agriculture, the following fees are applicable until superseded by a fee schedule established by the Oregon Department of Agriculture:

(a) WPCF and NPDES General Permits #800 for Confined Animal Feeding Operations Filing Fee -- $50;

(b) Individual Permits:

(A) Filing Fee -- $50;

(B) New ~~Applications~~applications -- $6,280;

(C) Permit ~~Renewals~~renewals (including request for effluent limit modifications) -- $3,140;

(D) Permit ~~Renewals~~renewals (without request for effluent limit modifications) -- $1,416;

(E) Permit ~~Modifications~~modifications (involving increase in effluent limit modifications) -- $3,140;

(F) Permit ~~Modifications~~modifications (not involving an increase in effluent limitations) -- $500;

(G) Annual ~~Compliance Determination Fee~~compliance determination fee for dairies and other confined feeding operations -- $705;

(H) Annual ~~Compliance Determination Fee~~compliance determination fee for facilities not elsewhere classified with disposal of process wastewater -- $1,885;

(I) Annual ~~Compliance Determination Fee~~compliance determination fee for facilities not elsewhere classified that dispose of non-process wastewater (e.g., small cooling water discharges, boiler blowdown, filter backwash, log ponds) -- $1,180.

(c) Annual ~~Compliance Determination Fee~~compliance determination fee for facilities that dispose of wastewater only by evaporation from watertight ponds or basins -- $705.

(9) A surcharge in the amount listed below is imposed on municipalities that are permittees as defined in 2007 Oregon Laws chapter 696, section 2. The surcharge is imposed to defray the cost of conducting and administering the study of persistent pollutants discharged in the State of Oregon required under 2007 Oregon Laws chapter 696, section 3. A permittee subject to the surcharge must pay one half of the surcharge on or before July 15, 2008 and the other half of the surcharge on or before July 15, 2009.

Each municipality will pay a surcharge based on a dry weather design flow in millions of gallons per day (mgd) as follows:

less than 5 mgd = $6,975

5 mgd to 9.9 mgd = $13,950

10 mgd and greater = $20,925

[ED. NOTE: Tables referenced are not included in rule text. Click here for PDF copy of table(s).]

Stat. Auth.: ORS 468.020, 468B.020 & 468B.035
Stats. Implemented: ORS 468.065, 468B.015, 468B.035 & 468B.050
Hist.: DEQ 113, f. & ef. 5-10-76; DEQ 129, f. & ef. 3-16-77; DEQ 31-1979, f. & ef. 10-1-79; DEQ 18-1981, f. & ef. 7-13-81; DEQ 12-1983, f. & ef. 6-2-83; DEQ 9-1987, f. & ef. 6-3-87; DEQ 18-1990, f. & cert. ef. 6-7-90; DEQ 10-1991, f. & cert. ef. 7-1-91; DEQ 9-1992, f. & cert. ef. 6-5-92; DEQ 10-1992, f. & cert. ef. 6-9-92; DEQ 30-1992, f. & cert. ef. 12-18-92; DEQ 20-1994, f. & cert. ef. 10-7-94; DEQ 4-1998, f. & cert. ef. 3-30-98; Administrative correction 10-22-98; DEQ 15-2000, f. & cert. ef. 10-11-00; DEQ 2-2002, f. & cert. ef. 2-12-02; DEQ 7-2004, f. & cert. ef. 8-3-04; DEQ 5-2005, f. & cert. ef. 7-1-05; DEQ 11-2006, f. & cert. ef. 8-15-06; DEQ 5-2007, f. & cert. ef. 7-3-07; DEQ 8-2008, f. 6-27-08, cert. ef. 7-1-08; DEQ 7-2010, f. 8-27-10, cert. ef. 9-1-10

OAR 340-045-0075, Table 70G: General NPDES &WPCF Permits

Number	Type	Description	New~~–~~ Permit Application Fee[1]	Annual Fee
100-J	NPDES	Cooling water/heat pumps	$202	$457
200-J	NPDES	Filter ~~Backwash~~ backwash	$202	$457
300-J	NPDES	Fish ~~Hatcheries~~ hatcheries	$319	$457
400-J	NPDES	Log ~~Ponds~~ ponds	$202	$457
500-J	NPDES	Boiler blowdown	$202	$457
600	WPCF	Offstream small scale mining – processing less than five cubic yards of material per day, or less than 1500 cubic yards per year	$0	$0
		Offstream small scale mining – processing 1,500 to10,000 cubic yards of material per year	$202	$0
700-PM[2]	NPDES	Suction dredges	$0	$25
900-J	NPDES	Seafood processing	$202	$457
1000	WPCF	Gravel mining	$202	$457
1200-A[3]	NPDES	~~Storm Water~~Stormwater: Sand, gravel, and other non-metallic mining	$782	$804
1200-C[3]	NPDES	~~Storm Water~~Stormwater: Construction activities – one acre or more	$782	$804
1200-C[3]	NPDES	~~Storm Water~~Stormwater: Construction activities – less than one acre and part of a common plan of development disturbing one or more acres	$230	$0
1200-CA	NPDES	~~Storm Water~~Stormwater: Construction activities performed by public agencies – one acre or more	$782	$804
1200-COLS[3]	NPDES	Stormwater: Industrial stormwater discharge to Columbia Slough	$782	$804
1200-Z[3,4]	NPDES	~~Storm Water~~Stormwater: Industrial	$782	$804
1400-A	WPCF	Wineries and seasonal fresh pack operations whose wastewater flow does not exceed 25,000 gallons per day and is only disposed of by land irrigation.	$202	$268
1400-B	WPCF	Wineries and small food processors not otherwise eligible for a 1400A general permit.	$319	$457

1500-A	NPDES	Petroleum hydrocarbon clean-up	$319	$457
1500-B	WPCF	Petroleum hydrocarbon clean-up	$319	$457
1700-A	NPDES	Vehicle ~~&~~ and equipment wash water	$446	$457
1700-B	WPCF	Vehicle ~~&~~and equipment wash water	$446	$457
1900-J	NPDES	Non-contact geothermal heat exchange	$446	$457
2401	WPCF	Tier 1 graywater reuse and disposal system for residential systems not exceeding 300 gallons per day, or equivalent specific geographic area graywater reuse and disposal area permit	$50	$40
2402	WPCF	Tier 2 graywater reuse and disposal system for systems not exceeding 1,200 gallons per day, or equivalent specific geographic area graywater reuse and disposal area permit	$534	$50
		Other	$446	$457

1. New~~-~~permit applications must include both the new~~-~~permit application fee and the first year's annual fee.
2. A person registered under the 700-PM permit may pre-pay $100 for 5 years of registration in lieu of the $25 annual fee.
3. Some of these permits are administered by public agencies under contract with DEQ.
4. This permit incorporates the 1300-J permit.

Graywater Advisory Committee Report

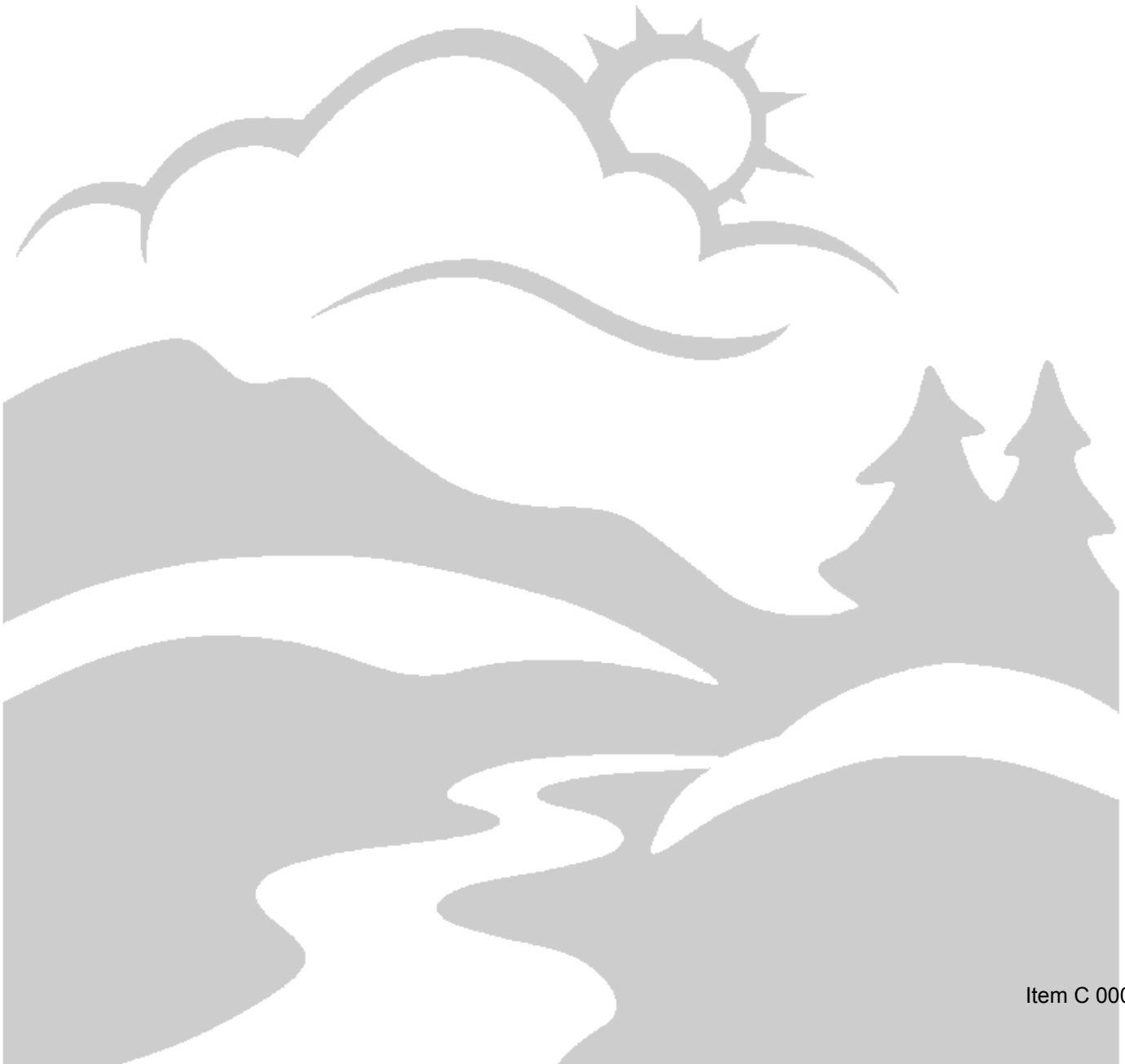
Recommendations on Graywater Treatment, Disposal and Reuse

State of Oregon Department of Environmental Quality

Submitted to: Oregon Environmental Quality Commission

By: DEQ Graywater Advisory Committee

November 2010



Last Updated:
11/8/2010
By: Ron Doughten
DEQ 10-WQ-026

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Executive Summary

Population growth and climate instability are putting increasing pressure on Oregon's water resources, prompting increased interest in graywater as an alternate water source. Graywater is wastewater originating from showers, baths, bathroom sinks, kitchen sinks and laundries. Graywater does not include toilet or garbage wastes, or wastewater contaminated by soiled diapers. Although it may contain a complex mixture of organic matter, suspended solids, bacteria and common household chemicals, when used judiciously and in a manner that is protective of public health and the environment, graywater can help preserve limited water supplies while advancing the environmental ethic of reusing and recycling limited resources. House Bill 2080, passed by the 2009 Oregon Legislature, directed the Oregon Environmental Quality Commission (EQC) to consider the recommendations of a graywater advisory committee when adopting rules for the permitting of graywater reuse and disposal systems.

This report contains the final recommendations of the DEQ Graywater Advisory Committee. The committee met monthly beginning in December 2009 and, through research and discussion, developed recommendations on the treatment, disposal and reuse of graywater. The 2009 Oregon Legislature directed the EQC to consider these recommendations when adopting new rules for the permitting of graywater reuse and disposal systems. The committee's majority opinions are in the main body of this report. Minority opinions as well as additional background information on the recommendations are in the endnotes.

Policy and Purpose. The committee recommends that the EQC adopt a graywater policy and rules that encourage the use of graywater in a manner that protects public health and the environment as well as acknowledges the public and environmental benefits of using this valuable resource. In addition, the graywater rules should coordinate the requirements of multiple agencies, provide clear guidelines to the public on graywater use, and educate both the public and regulatory bodies on graywater use and potential environmental and public health hazards.

General Provisions. The recommendations include general provisions that pertain to all graywater systems, such as prohibiting the introduction of hazardous chemicals into graywater; requiring non-graywater to be diverted to an approved disposal system; ensuring that the construction of graywater systems meets all plumbing code requirements where applicable; and, specifying that graywater system components are appropriately labelled to prevent unintentional contact with graywater. The committee also developed a general set of recommendations for graywater irrigation systems that are intended to protect ground and surface water resources. These recommendations include limiting graywater discharges to periods when natural precipitation is insufficient to meet plant needs and prohibiting release to sites with steep slopes or shallow groundwater.

Untreated Graywater. The committee recognizes that the use of untreated graywater carries potential hazards to public health and has developed specific recommendations to address these concerns. Direct contact with untreated graywater by humans and domestic pets should be minimized. When used for irrigation, the edible portion of crops should not contact the graywater. Untreated graywater should only be used for subsurface irrigation and composting. Untreated graywater may not be stored for more than 24 hours and, when used for irrigation, must be released under at least two inches of soil, mulch or other cover. Buffers or horizontal setback distances should be maintained from surface waters, stormwater systems and property lines. Because of potentially high concentrations of organic material, solids and bacteria, all graywater originating from kitchen sinks should pass through a system designed to reduce grease, floatable solids and settleable solids.

Treated Graywater. The committee also recognizes that with appropriate treatment, graywater may be safely used for other uses, such as surface irrigation and landscape ponds. The committee recommends that graywater treatment systems either (1) use a technology-based system recognized by an accreditation authority such as the American National Standards Institute or (2) meet performance based criteria of an effluent concentration not to exceed 10 milligrams per liter for both five-day Biochemical Oxygen Demand (BOD_5) and total suspended solids (TSS). With disinfection, graywater may be safely used for additional applications, such as spray irrigation, wash water and various construction uses. Graywater disinfection standards should be consistent with Oregon's definition for Class B recycled water, which is a total coliform concentration not to exceed a seven-day mean of 2.2 colony-forming units (CFU)/100 mL under a three-day/week monitoring frequency. Graywater treatment systems should be subject to monitoring and reporting requirements to show they comply with these standards.

Graywater Permits. Finally, the committee recommends that the EQC adopt a tiered approach to graywater permitting that is primarily based upon the volume of graywater produced. This tiered approach should allow low-volume residential graywater systems, which represent a low threat to public health or the environment, to be permitted with minimal effort, while high-volume, complex systems should be subject to the appropriate review and approval.

- Tier 1 General Permit. A Tier 1 general permit should be available for a single-family residence or duplex that generates less than 300 gallons per day (gpd) of graywater that will be used only for subsurface irrigation. If the system meets certain eligibility requirements, the permit can be obtained by registering the system with DEQ and paying a small fee.
- Tier 2 General Permit. A Tier 2 permit should be available for a single- or multi-family residence, institution, commercial facility or industrial facility employing a graywater treatment system and producing less than 300 gpd for uses other than subsurface irrigation as well as any graywater system producing between 300 and 1,200 gpd. Because these types of systems represent a higher risk to public health and the environment, the permit should be obtained only after paying a fee and submitting documentation on system design and operation to DEQ for review and approval.
- Tier 3 Individual Permit. Any graywater system producing greater than 1,200 gpd should be allowed under an individual Tier 3 permit. Moreover, any low- or medium-volume graywater system that fails to qualify for a Tier 1 or Tier 2 permit can apply for an individual permit. The committee further recommends that graywater disposal options be considered by DEQ under an individual Tier 3 permit. Because of the volume, potential complexity, site limitations or other conditions, these types of graywater systems may require careful review of system design, maintenance and operation. The fee for a Tier 3 permit should be appropriately scaled to the amount of effort required to develop the permit and the volume of graywater produced.

Summary of Public Comment and Agency Responses

Title of Rulemaking: **OAR Chapter 340, Division 053: Graywater Reuse and Disposal Systems**

Prepared by: Ron Doughten, Biosolids and Water Reuse Program Coordinat **Date:** June 2011

State of Oregon Department of Environmental Quality

Comment period: The public comment period opened on January 24, 2011, and closed at 5 p.m. on March 11, 2011. The Department of Environmental Quality (DEQ) held the following public hearings:
- February 23, 2011, 5 p.m., Oregon DEQ Headquarters, Portland
  Fourteen persons attended; six persons provided oral comment.
- February 24, 2011, 5 p.m. Oregon DEQ Bend Office, Bend
  Five persons attended; no one provided oral comment
- March 2, 2011, 5 p.m., Oregon DEQ Eugene Office, Eugene
  Five persons attended; two persons provided oral comment.
- March 3, 2011, 5 p.m., Pioneer Hall, Ashland
  Approximately 14 persons attended; six persons provided oral comment.

Organization of comments and responses: Summaries of individual comments and DEQ's responses are provided below. Comments are organized into general categories. Individual comments that included multiple topics may be addressed in multiple categories. The persons who provided each comment are referenced by number. A list of commenters and their reference numbers follows the summary of comments and responses.

Explanation of acronyms used in this document:
BCD - Oregon Department of Consumer Services, Building Codes Division
DEQ or department - Oregon Department of Environmental Quality
EQC - Environmental Quality Commission
IMD - Internal Management Directive

General Support

1 **Comment Summary:** **Commenters expressed appreciation for the graywater rules and generally supported the goals of the proposed graywater program.**

DEQ Response: No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Overall I think the proposed legislation is solid, however there are a couple of areas where I have concerns.	6
First, I would like to say thank you for working through the process of legalizing and legitimizing graywater use in Oregon. We appreciate it, and hopefully we can keep our rivers, streams, and springs flowing by using graywater to reduce our overall water consumption.	8
I really appreciate the fact that the state passed the law and there was this advisory committee. I think this is great.	13
First of all I am pleased that Oregon has moved forward on this important issue of permitting on site gray water management. Before moving to Oregon in 2000 I had a gray water system	13

in use for more than 20 years irrigating a vegetable garden in Southern Indiana. As a Portland resident and homeowner who is currently in the process of installing a gray water system I was pleased to see the task force recommend what appears to be overall a reasonable set of guidelines for gray water use.	
I applaud the efforts to create rules for graywater use that protect present and future generations of citizens while allowing these same generations to flourish with a greatly reduced water print. Your efforts in creating a viable means to reuse previously wasted resource are commendable. And as with all endeavors, it takes time to perfect them. The rules that have been created are a good strategic start. And with time, will be an important cornerstone of a sustainable Portland that our children's children will be proud of.	14
Overall, I think [the rules are] awesome, and I proud of the work that Oregon did.	15
Thanks. [The proposed rules are] incredibly well written, very well organized, and it's fairly clear. And I think it's making great progress in terms of water conservation and energy savings.	16
Thank you for all the hard work that has gone into the proposed rules.	21
I'm really glad that the State of Oregon is moving ahead on greywater reuse. Indeed, considering the progressive environmental record of our state, greywater reuse legislation (and its final regulatory form) seem long overdue. One of the reasons I moved to Oregon 23 years ago was its exemplary leadership in environmental protection. Since then, I have grown to appreciate the continual striving for the appropriate balance between conservation and development. However, the term "environmental protection" can imply that if we could all just stop littering and polluting, we'd achieve some environmental equilibrium. Far beyond this, Oregon, and Portland particularly, are seen as models of emerging sustainable culture. Somehow, our unique landscapes and people combine to yield a political climate both supportive of our economy and the natural resources upon which this economy is based. For these reasons, I am proud to be an Oregonian.	25
I'm writing to encourage the DEQ to adopt the recommendations of the Greywater Advisory Committee. Collecting this diverse group of people, meeting monthly, for almost a year, is an excellent example of participatory democracy. Due to the various backgrounds of the committee members, I feel that my interests were well represented.	25
I'm delighted to know that we are in the process of dialogue around allowing people to recycled graywater on their premises. I'm not as informed, because I've just seen the rules, but I came here because I wanted to offer my support for the idea of graywater. I understand that there are concerns about pathogens around graywater and that it needs—as any system needs—to be treated with due diligence. I'm hoping that as you proceed through this time that the regulation are as user-friendly to home owners and renters alike.	27
So again, I want to mainly encourage the use of graywater. Water is gold; we need to treat it like the rare element that it is. Right now there's over a billion people who don't have clean water to drink everyday and we are a huge user in the United States of water. Over 70% of our water is used in irrigation, 20% industrial, 10% home use. Irrigation definitely needs to be cut down and this is one way we can do it—we need to encourage it.	28
I want to appreciate the DEQ is doing this, I think this is a fantastic thing for Oregon to do. We need to encourage graywater use. Freshwater is one of the rarest elements on earth and necessary for life. Less than 1% of all water is fresh water so we need to reuse it as many times as possible before we let it go into the sewer system.	28
I moved here from AZ and I am familiar with the graywater laws in AZ. I appreciate that OR is creating these guidelines and rules. Like Gene, I definitely think we should be encouraging the reuse of graywater because it's a resource that is under-utilized and anything we can do to educate people and encourage people on the safe use of graywater is important. It looks like these rules and regulations are a great start and there's a lot of thought and research that has	29

gone into it. It's excellent.

First of all, I want to give my appreciation for this process, for all the time and energy that's been put into this. This seems like a very good start. I'm very much behind the whole graywater process, doing it in the right way, educating folks.	31
I would like to commend Oregon's DEQ in its move towards sustainable water policy.	35
Thank you for all the efforts thus far in helping to recognize and implement graywater strategies for beneficial uses. The proposed rules are thorough and well thought out.	37
We commend DEQ for developing these graywater guidelines and support them in the stated efforts to "encourage reuse of graywater for beneficial purposes".	39
I commend you on your efforts and think ... the draft rules look good in many ways.	45

General

Disfavor

2 **Comment Summary:** **Sustainability must be embraced, but public and the environment should not be put in jeopardy until graywater can be shown to be safely used in Oregon's wet environment.**

DEQ Response: House Bill 2080 directed the Environmental Quality Commission to adopt rules for the permitting of graywater reuse and disposal systems. The rules must protect public health, safety and welfare; public water supplies; and waters of the state. The proposed rules are based on the recommendations of subject area experts who advised DEQ how to best permit graywater systems that protect public health and the environment while allowing for graywater reuse as a beneficial resource. OAR 340-053-0080(18) allows the department to include additional permit limitations or conditions necessary to protect public health or the environment.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Please review the EWEB Gray water system that is having great difficulty in working and are now considering hooking up to the City's Sewer System. Given the amount of resources EWEB invested in the new Maintenance Facility, it seems very troubling the waste and/or storm water system is not working as advertised! I would like to see sustainability embraced, but don't want the environment or people's health put in jeopardy until the system is proven to work in our wet environment.	18

3 **Comment Summary:** **The proposed rules are burdensome and include excessive conditions on graywater reuse. This will result in homeowners ignoring the rules and installing illegal graywater systems.**

DEQ Response: The proposed rules use a tiered approach so simple graywater systems may be installed and permitted with limited regulatory oversight provided the owner follows some basic requirements. Higher volumes of graywater or more complex systems require more stringent conditions.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:

Without going into detail, most requirements, in my opinion, are far too stringent. Should the need to use grey water arise due to drought, people are going to use it and ignore the regulations. Perhaps a lesser requirement and free assistance from DEQ would go a long way in preventing health hazards.	1
The proposed red tape will virtually guarantee that residential graywater systems in Oregon will be illegal ones. Factors that will discourage homeowners from bothering with a permit: 1. Annual permit fees (even if paid in 5-year increments). Has that scheme really worked for residential irrigation systems? 2. Requirement to apply to DEQ. It should simply be covered by local plumbing permits and inspections. 3. One-size-fits-all requirements that address worse-case situations and make residential graywater systems more complex than they need to be, for most applications. These include pre-treatment of kitchen sink and dishwasher graywater (a deep pit of wood chips provides plenty of bugs to do the solids treatment); a requirement to turn the system off in the winter (in most areas, this stuff is still better treated on-site rather than concentrated in a municipal treatment plant, and in practice, few homeowners are going to crawl under the house and turn the valve twice a year); and screening solids (this will just create a maintenance headache--screens are only necessary to keep bugs and critters from crawling up the pipe, and then only when homeowners remove the traps and vents from their sinks). For single family residential systems, simply have a rule that "graywater must not surface, pond or runoff" and otherwise don't regulate it. The state has more important issues to deal with.	7
When adopting rules for graywater use, policymakers should bear in mind that if the goal is to encourage graywater recycling, participation will ultimately be inversely proportional to the policy barriers erected. If legal compliance is easily attained, participation will be high. Excessive legislation adds to construction and permitting costs, thereby discouraging participation. There is no reason to use potable water resources for irrigation. The use of graywater for irrigation has a long track record of success and private property owners generally make the best guardians of their own infrastructure. Graywater reuse is much less problematic than the already prevalent practice of private septic fields, and should not be implemented with legislation that is more burdensome than that which oversees septic disposal policies. Treatment of low-grade graywater generally consists of nothing more than allowing soil microbes and plants to break down and utilize the surfactants and waste residues just as they are. Two policy points that I believe necessary are: 1. Minimum 10 ft. setbacks between graywater outlet sites and neighboring property lines. 2. The installation of a whole-house 3-way diverter valve that allows graywater and blackwater to be either combined or separated.	19

General

Clarity

5 **Comment Summary:** **Consider segregating 340-053-0080, which is very long, into sections, such as general requirements, system plan submittals, property easements, etc.**

DEQ Response: OAR 340-053-0080 includes general requirements that apply to all types of graywater reuse and disposal systems.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Consider segregating the 340-053-0080 list, which is very long, into sub-sections such as general requirements, system plan submittals, property easements submittals, etc.	46

6 **Comment Summary:** **Consider including specific sections on enforcement and public notice to allow for those regulations to be easily located.**

DEQ Response: Sections on enforcement and public notice have not been included in the proposed rules as these are administered under DEQ rules in OAR 340-012 and OAR 340-045-0027.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Consider including specific sections on enforcement & public notice to allow for regulations to be easily located.	46

7 **Comment Summary:** **The proposed rules use the terms reuse and disposal interchangeably. This permit should only cover reuse efforts, and should be described as such. Existing permitting tools such as onsite wastewater and WPCF permits should be used for systems that have onsite disposal. While this may result in two permits for a single system operation, it provides consistency with current regulations. DEQ should tighten the language of the proposed rule.**

DEQ Response: The proposed rules consistently use the term "graywater reuse and disposal system," which refers to a system from which graywater can be diverted between beneficial reuse or disposal. The requirements in the proposed rules address graywater reuse. OAR 340-053-0080(8) requires non-graywater or graywater not suitable for reuse to be diverted for disposal in a wastewater collection or treatment system. DEQ anticipates that in most instances, onsite wastewater treatment and graywater reuse will be two separate systems. Furthermore, most onsite wastewater treatment system permits are construction-installation permits and would not cover operation of a graywater reuse and disposal systems. However, in some circumstances, a single WPCF individual permit for both onsite wastewater treatment and graywater reuse may be appropriate and a preferred option to minimize permitting burden on both the permittee and DEQ. If both wastewater disposal and graywater reuse are covered under a single individual WPCF permit, the requirements of both OAR 340-071 and OAR 340-053 must be met.

The language in OAR 340-053-0090(1)(a) has been updated to clarify that graywater not suitable for beneficial reuse must be diverted to an approved wastewater treatment system.

Original Comment	Commenter:
In the draft rule DEQ uses the terms reuse and disposal interchangeably. This permit should only cover reuse efforts, and should be described as such. Existing permitting tools such as onsite wastewater and WPCF permits should be used for systems that have onsite disposal. While this may result in two permits for a single system operation, it provides consistency with current regulations. DEQ should tighten the language of the draft rule.	46

8 **Comment Summary:** **The graywater rules should be coordinated with the efforts underway in the Building Codes Division by the Reach Code Committee. The BCD has decided to adopt the International Green Construction Code (IGCC) as the model code basis to develop an Oregon Reach Energy Code. A portion of the IGCC deals specifically with the use of graywater systems and non-potable**

water systems for irrigation systems.

DEQ Response: DEQ conferred with the Building Codes Division (BCD) when developing the proposed graywater rules. A representative of BCD was on the DEQ Graywater Advisory Committee. The Reach Code Committee has recommended following the final DEQ rules for graywater reuse and disposal systems. DEQ will continue to work with BCD, other state agencies, and local jurisdictions as the graywater program is implemented.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Developing new rules that will encourage and promote the use of graywater systems will help Oregon manage water resources to the benefit of the state and its citizens. ICC encourage you to coordinate your efforts with those activities currently underway in the Building Codes Division by the Reach Code Committee. The Building Codes Division has decided to adopt the International Green Construction Code (IGCC) as the model code basis to develop an Oregon Reach Energy Code. A portion of the IGCC deals specifically with the use of graywater systems and non-potable water systems for irrigation systems. I have attached a copy of the matrix status of the Reach Code Committee as of 1/26/2011 to illustrate their progress they are making. ICC believes state regulations should be crafted in the most integrated and correlated form possible so when multiple state agencies have regulations with similar scope and coverage regulatory duplication and conflict is greatly eliminated. Incorporating the IGCC as much as possible into your regulations and correlating your efforts with those of Oregon BCD and Oregon Dept. of Energy will allow those regulated by the rules to more easily comply with all State regulations.	11

55 **Comment Summary:** **Please use "minimum separation distance" language from seasonal high groundwater for consistency.**

DEQ Response: DEQ agrees that the suggestion provides clarification to the rule. The suggested change has been made to OAR 340-053-0090(1)(e)(D): At the time of irrigation, the minimum separation distance between the point of graywater discharge and the groundwater must be four feet.

Original Comment	Commenter:
Clarify that offsite disposal to jurisdictional UIC systems is prohibited [0080(6) & 0090(1)(c)(A)]. Also please use "minimum separation distance" language from seasonal high groundwater for consistency.	46

General

Education

9 **Comment Summary:** **Education will be critical to make the graywater program successful. The proposed rules have no way of educating the end user. Many graywater systems that currently exist in Oregon do not function well because they were designed or constructed by someone inexperienced with graywater or based on books that were not intended for Oregon's climate. To promote regulatory compliance, DEQ should develop and publish education materials, guidance documents, and best management practices for beneficial graywater reuse for the general public.**

DEQ Response: DEQ will provide information on how to permit graywater systems compliant with the rule to the public during program implementation and as the program

budget allows. Information will be provided on the web and may include fact sheets, guidebooks, links to other resources, as well as an Internal Management Directive for DEQ staff implementing the program. DEQ will also work with local and community organizations to get information to the public on using best management practices to promote continued regulatory compliance.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Just a little reality that there [are] tons of people using graywater systems already, and unfortunately those systems have not been set up super-well, they haven't been designed by someone who's used them before, or they've been based on books that were not written with our climate in mind; and they don't work perfectly in our climate. I think it would be a great thing if a few examples of best practice or good practice graywater systems could be something that that information could be distributed by the DEQ as a way of helping people kind of get their heads around what their system will look like her e in Portland, Oregon, [for example,] a few examples for different types of dwellings, different numbers of people living in those dwellings, that sort of thing. I really think that would be super helpful because I've been places and I've seen "Hey, I've got graywater and it's really great" and you go back and it's this think mucky, slimy thing filled with cedar bark or whatever; and it's really because they don't know what they're doing and they're trying to do the right thing, but they don't have information that's regionally appropriate, or the knowledge is very confusing in some ways. That may not be necessarily the duty of the Department of Environmental Quality, but I think it would be awesome if you guys could have that as a side-note to the rest of this.	12
In conclusion I feel the task force and the DEQ have done a great job on their initial recommendations. However, we should remember that the task of government should be to HELP its citizens do the right thing and not get in their way by creating burdensome fees and requirements that will discourage them from permitting the systems they design and install. It is also the obligation of the DEQ to provide adequate education and feedback so that well functioning systems can be designed and installed by ANY citizen that desires to reduce their use of municipal water and sewage.	13
Concern #2. Education and plan review. Currently the regulations do not have a mechanism for "educating" the end user. I suspect most potential users will likely read the regulations but people understand and retain more if they are tested on the material. A video could be created and made available online to emphasize critical points for creating and installing a gray water system. An online "open book" test is easy to create that all permit applicants could take as part of the permit process (similar to state tests for pumping diesel, applying pesticides, fluoroscopy use). I would be happy to participate in the either of these activities. There could even be a volunteer group of enthusiasts to answer questions for the novice gray water designer. It was not clear to me if plans from all of the tiers were being reviewed or just the tier 2 and 3. It seems to me that only the tier 3 or high volume plans need to be formally reviewed, all other plans should be like other water quality permits, a series of check boxes and a place for a description or drawing.	13
I also think that having some type of continuing education as systems are built and being able to come back and see how they're function and what's working and what's not working. Especially if there's a $50/yr fee there needs to be something that the people who are using these systems are getting; there's something going back into encouraging more.	29
The other main thing I wanted to address has to do with the need for education. I really support the work that has been done; I think all the information is really valuable and we want people to know all of the good things—the important things—they need to know when putting in a graywater system. I think charging the $50 fee to homeowners is going to be counter-productive. I think that people will be more likely to do their projects illegally and they won't have access to the information. Especially when there's going to be very likely	30

local jurisdictional fees as well for plumbing, that seems like an equally valid place to provide information as going through this permit process. If they're going to have to go and get a local permit that point of contact with government can provide all the information as well. If they are charged a fee to go through the DEQ process, I think it's very likely they will avoid that and go illegal completely and they won't get the information at all. I think that we should be providing incentives for people to do this because it's a public benefit rather than fining people. And bringing people in to get their public benefit is another point of contact where's there's an opportunity to give them education that will make it good for everybody.	
I would like to thank DEQ for holding this meeting and I hope there are more—especially if we do end up with bills that say we have rules to follow. I think education will be one of the huge elements in making the whole program successful. I think there are lots of people who would like to do it, but I'm afraid there's lots of people: "I don't know about this" and "I don't know about that" and "It sure sounds complicated" and "I have to do this and I have to do what else?". So, I just think we need some sort of volunteer program in communities so there are people who have some knowledge, because I'm not sure DEQ has enough staff people to be in all these communities whenever they're going to be needed. To help identify people who have that information in each community and to help and much as possible. I think the idea of the program is absolutely important—essential. We need to do anything, everything we can to work for the betterment of this planet and water is one of the essential elements.	33
I think there's so much education to make this will work and maybe those fees will be reasonable because you'll have so many people wanting to do that, but I think that remains to be seen. But it certainly has lots of potential. I wish you the best of luck and all the rest of us too.	33
We recommend that the DEQ develop and publish educational materials, guidance documents, and best management practices associated with graywater beneficial use practices for the general public, to promote regulatory compliance.	38

10 **Comment Summary:** **A successful graywater program will require DEQ partnerships with local organizations, potentially including volunteer organizations.**

DEQ Response: During program implementation DEQ will work with local and community organizations to get information to the public on permitting and regulatory compliance. Because fees to cover program activities will be limited, DEQ may be limited in the amount of outreach it can do. DEQ agrees that program administration from a local level may be more effective and, consequently, has included an option for local program agents under OAR 340-053-0110(3).

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
I would like to thank DEQ for holding this meeting and I hope there are more—especially if we do end up with bills that say we have rules to follow. I think education will be one of the huge elements in making the whole program successful. I think there are lots of people who would like to do it, but I'm afraid there's lots of people: "I don't know about this" and "I don't know about that" and "It sure sounds complicated" and "I have to do this and I have to do what else?". So, I just think we need some sort of volunteer program in communities so there are people who have some knowledge, because I'm not sure DEQ has enough staff people to be in all these communities whenever they're going to be needed. To help identify people who have that information in each community and to help and much as possible. I think the idea of the program is absolutely important—essential. We need to do anything, everything we can to work for the betterment of this planet and water is one of the essential elements.	33

11 **Comment Summary:** **Applicants for graywater reuse and disposal system permits should be required to take and pass a test on how to safely reuse graywater as well as operate and maintain a graywater reuse and disposal system.**

DEQ Response: DEQ agrees that ensuring individuals have the appropriate knowledge to safely operate a graywater reuse and disposal system is important. HB 2080 directed the EQC to adopt rules for permitting of graywater reuse and disposal systems and DEQ believes the proposed rules address operational aspects of these systems to ensure protection of public health and the environment. The proposal to test individual knowledge on the operation of a residential graywater system would be a program for licensing operators, which is beyond the scope of this rulemaking.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
I think the permitting system is appropriate; I think there are better ways of doing it. I give you 2 examples. I have a biodiesel car, I pump my biodiesel, and I had to fill out an online state form on the proper use of biodiesel. It didn't cost anything. I went to the website. I filled out the little things or faxed it, I don't remember, but the really good thing is I learned how to use the shut-off valve; I leaned the differences between diesel and gas; I learned how to manage the system of pumping my own diesel fuel, which is something you're allowed to do in other states, other than this one. I also have a radiology-fluoroscopy permit, which is required by the state if I use that type of equipment. It's a 50 question, open-book exam, a 27 page thing you print off of the web. I have to answer all 50 questions with a 90% accuracy and then the state gives me my stamp of approval. Something like that for the graywater systems is exactly what you want. What do you do when the [ground] is saturated? When can you use subsurface versus surface? What do you do when the ground is frozen? What do the diverting valves look like? These are the kinds of things you can have outlined on your website, and you can have people take a little exam. The really nice thing is when you've educated your citizenry—and they've essentially done their own reviews, so that as part of their permitting review they have to show they passed the little exam and show what they have to do to meet the minimum requirements.	13
Concern #2. Education and plan review. Currently the regulations do not have a mechanism for "educating" the end user. I suspect most potential users will likely read the regulations but people understand and retain more if they are tested on the material. A video could be created and made available online to emphasize critical points for creating and installing a gray water system. An online "open book" test is easy to create that all permit applicants could take as part of the permit process (similar to state tests for pumping diesel, applying pesticides, fluoroscopy use). I would be happy to participate in the either of these activities. There could even be a volunteer group of enthusiasts to answer questions for the novice gray water designer. It was not clear to me if plans from all of the tiers were being reviewed or just the tier 2 and 3. It seems to me that only the tier 3 or high volume plans need to be formally reviewed, all other plans should be like other water quality permits, a series of check boxes and a place for a description or drawing.	13
[My] comments have to do with the development of small systems…60 gallons per day, that's 3 people in a house taking 10 minute [showers] with 2 gpm showerheads and picking up the water from the drains. Trying to take that to a Tier 3 system--$601 minimum as a fee for that seems way out of line, especially for what I'm intending to do, which is develop small systems—not big systems—but very well developed systems for cleaning the water possibly past Tier 3 and even to potable. But as somebody already mentioned [it's a] disincentive with having the fees that high. I like the biodiesel cure of actually checking the education of the person involved, that does sound like a good way around it. But the issue of these fees where I'm looking at a total system cost of possible $250, but it	17

takes a $601 fees to even use it? That's a disincentive. That's stifling research; that's stifling what I'm concerned with is small business development.

And, trying to get away from the assumption that a Tier 3 system is a big system is what I'm encouraging you guys to do. 60% of actual use really does seem like a good idea.

It is of concern that DEQ does not intend to review Tier 1 graywater permits. a. At the public meeting on February 23rd, 2011 a citizen suggested that DEQ institute a test to betaken as a condition of receiving a Tier 1 permit. This requirement is worth considering as it will encourage citizens to become familiar with the basic rules and requirements of a Tier 1 permit. A testing tool could be made available online and could provide an opportunity to convey important education messages.	46

General Philosophy

12 **Comment Summary:** **Include appropriate goals for the functioning and use of graywater reuse and disposal systems such as water conservation, protection of the quality of surface water and groundwater, protection of health; omit specific design requirements and prohibitions.**

DEQ Response: The purpose and policy of the proposed rules is given in OAR 340-053-0050 and includes these stated goals: The purpose of the rules is to "...protect public health, safety and welfare; public water supplies; and waters of the state." "It is the policy of the Environmental Quality Commission to encourage the use of graywater for beneficial purposes not requiring potable water because it reduces demand on drinking water sources and may conserve groundwater and stream flows by reducing withdrawal."

The proposed rules include conditions necessary to support the purpose and policy statement. Based on the recommendations of the DEQ Graywater Advisory Committee, the rules have been written to avoid prescriptive design requirements and create opportunities for innovative system design.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
In the Rules regulating Graywater Reuse and Dispersal/Disposal, include appropriate Goals for the functioning and use of Graywater Reuse and Dispersal/Disposal System (such as water conservation, protection of the quality of surface waters and groundwater, protection of health), and omit specific design requirements and prohibitions. Let the designer figure out how to best meet the goals! At most, make suggestions or recommendations regarding design issues and/or give examples of ways that certain goals might be met, but don't demand particular design features!	47

30 **Comment Summary:** **We would like to encourage the DEQ to consider the role they could play in promoting holistic sustainable water reuse strategies that go further and incorporate all water sources and their beneficial reuse. While Portland and the Oregon DEQ are leaders in these efforts in the U.S., there is much that can be learned from European practices which leading the way.**

DEQ Response: Promoting sustainability by encouraging the reuse of wastewater has been one of DEQ's key strategic directions since 2006. DEQ has other programs that encourage the reuse of wastewaters, including recycled water (treated municipal

effluent) and industrial wastewaters.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
We would also like to encourage the DEQ to consider the role they could play in promoting holistic sustainable water reuse strategies that go further and incorporate all water sources and their beneficial reuse. While Portland and the Oregon DEQ are leaders in these efforts in the U.S., there is much that can be learned from European practices which leading the way. We include below for consideration links to information on European studies of source separation and reuse of urine, graywater and blackwater.	39

31 **Comment Summary:** **We would like to see blackwater included in the reuse standards. Sustainable best management practices include the treatment and reuse of all wastewater onsite.**

DEQ Response: The treatment and reuse of blackwater is beyond the scope of this rulemaking.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
We would like to see blackwater included in the reuse standards. Sustainable best management practices include the treatment and reuse of all wastewater onsite. Once again, LBC mandates this practice. For an LBC project which treats and reuses blackwater, graywater would generally not be treated separately. By definition, graywater becomes blackwater after a relatively short period of storage without treatment. They both require appropriate treatment that corresponds to their intended reuse. Once treatment standards for graywater have been described – such as the following BOD, TSS and coliform organisms from your guidelines – the inclusion of blackwater treatment and reuse becomes straightforward along the same lines. • Tier 2 Graywater: BOD and TSS of 10 mg/L • Tier 3 Graywater: 2.2 total coliform organisms per 100 milliliters last seven days (23 per any single sample). We commend Oregon DEQ for being a leader in this field with the groundbreaking permitting of onsite wastewater reuse for the OHSU building in Portland. We encourage DEQ to further this leadership by making the process accessible to a broader range of sustainably minded projects by not requiring a Water Pollution Control Facility permit. This requirement necessitates that even small projects go through the same process as a large sewage plant, effectively eliminating their opportunity to follow sustainable water reuse practices. We believe the same language used below in OAR 340-053-0110, (1) can and should be applied to reasonably sized wastewater treatment and reuse systems: Under OAR 340-045-0033, the department may issue general permits for certain categories of minor discharge sources or minor activities where individual WPCF permits are not necessary to adequately protect public health or the environment.	39

162 **Comment Summary:** **DEQ as an organization has a primary interest in protecting water quality, including preventing impacts from graywater reuse. But, there are other public interests that must be considered, such as obtaining sufficient water supplies. People interested in putting in graywater reuse and disposal systems are doing so not for themselves, but for the overall good of society. We should treat them as though they are doing something for the public benefit.**

DEQ Response: Comment noted.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Basically, I agree with the two statements that were just made. The DEQ as an organization has a primary interest in protecting water quality as an end use from the activities we're talking about. But there are other public interests involved. Obtaining sufficient water supplies is a very important public interest. All of our local municipalities and local jurisdictions are also concerned with treating the water that has been used in household use. So these things have to be weighed against the public interest of the end environmental quality of what's coming back into our streams and surface water. My feeling is that the people who are looking to put in graywater systems are trying to do something—not just for themselves; they're not trying to get that much of a personal benefit. People who are trying to do it are contributing to the good of society as a whole. They're doing it because it's important for us to do this in order to have water resources and in order to have our water resources be cleaner, and not just because they're trying to save a few bucks. The attitude of treating the individual who is going to do this project as if they were doing some recreational, luxury, or hobbyist item, I think is really incorrect. That's not why they're doing it and that's not how we should treat them. We should be treating them as if they are doing something for the whole public benefit.	30

163 **Comment Summary:** **Oregonians want clear codes that move toward a more sustainable future while protecting public health and the environment.**

DEQ Response: Comment noted.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Oregonians want codes that toward us a more sustainable future as well as protect our health and create high standard for plumbers. I suspect that you saw the piece in The Oregonian 1/16/11 entitled "Census: Oregon has more homes without plumbing now than in 2000, and no one really knows why." My view is that part of this discrepancy is attributable to growing numbers of educated urban dwellers whose commitment to more sustainable living has led them to design their own systems. It's time for codes to catch up.	42

166 **Comment Summary:** **An essay on public sanitation systems, including the general philosophies of waste management, was submitted as public comment. The essay did not provide any specific comments on graywater reuse and disposal systems.**

DEQ Response: Comment noted. The scope of this rulemaking is limited to graywater reuse and disposal systems.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
[Essay on sanitation included in permanent rulemaking record, but not included in response to comments. The document is available on request.]	25

General

Program Implementation

14 **Comment Summary:** **A more clearly defined process in the Division 53 rules for including local stakeholders is needed.**

DEQ Response: Public participation in water quality permitting actions is provided through the public notice requirements described under OAR 340-045-0027. Additional

details such as when to involve local stakeholder groups will be provided to DEQ personnel through an Internal Management Directive (IMD), which will be developed following rule adoption.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
A more clearly defined process in the Division 53 rules for including local stakeholders is needed.	46

15 **Comment Summary:** **DEQ should consider creating an Internal Management Directive (IMD) or other program implementation guidance. There are many sections of the rules where subjective reviews are required. It would be helpful to understand the Department's intent, especially for any jurisdiction willing to take on being an agent for the program.**

DEQ Response: The Department intends to develop an Internal Management Directive (IMD) for DEQ staff following rule adoption and during program implementation.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
DEQ should consider creating an Internal Management Directive or other program implementation guidance. There are many section of the permit where subjective reviews are required. It would be helpful to understand the Department's intent, especially for any jurisdiction willing to take on being an agent for the program.	46

Fees

General OAR 340-045-0070

16 **Comment Summary:** **A number of commenters suggested that no fees should be charged for graywater reuse and disposal system permits because the fees would be burdensome, create a disincentive to participation in the program, and effectively discourage graywater reuse. A number of commenters also believed the fees would encourage the installation of illegal graywater systems.**

DEQ Response: DEQ was directed by the Legislature to adopt rules for permitting graywater reuse and disposal systems. No revenue sources were provided by the Legislature to support the graywater permitting program other than permit fees. DEQ's water quality permitting programs are fee-based and the fee varies with the type and complexity of the permit required. Fees collected through permitting are necessary to process and issue permits as well as to support compliance with the graywater rules. DEQ has attempted to keep the permit fees as low as possible to encourage graywater reuse, while still supporting the program. DEQ based the fee schedule on recommendations from the DEQ Graywater Advisory Committee.

DEQ believes that public health and the environment will be best protected by installing well-designed graywater reuse and disposal systems that are appropriately operated and maintained. Because DEQ is concerned that the proposed fees could discourage well-designed systems, the proposed fee schedule in Division 045 has been modified and OAR 340-053-0110(1)(a)(C) allows DEQ

to reduce or waive the cost of Tier 1 permits provided homeowners submit to DEQ a written report on the operation and maintenance of their graywater reuse and disposal system.

Original Comment	Commenter:
Charging people for simple or existing systems is the wrong thing to do. It is a public good for people to reuse lightly used water rather than for them burdening the regional sewage system and the regional water supply systems. - It saves rate payers money to not have to enlarge these systems. In Portland there is a huge charge for runoff due to the capacity demands it puts on the system. In Clackamas County there are unwanted sewage rate charges due to system expansion. - It benefits our natural environment to reduce the water withdrawals from rivers and ground water and to reduce waste water dumpage, now mixed with industrial waste, into these natural systems. - People need encouragement to make this switch rather than the disincentive that a fee creates. - People who have been using graywater should not have to pay for their existing practices. I remember my mom putting her wash machine discharge (using biodegradable soaps) on our landscaping during a drought decades ago: she should have to pay? Should the housewife (or camper) who throws the dishwater out on flowers have to pay? Actually, this should be common practice as it saves everyone money and benefits the environment. - Education might be as economical as a permit fee for simple systems, because the permit fee probably wouldn't cover the staff time anyway if it exceeded an hour -- and it would include the education, the plan examination and any inspection. - Any fee should be paid by the sewage/wastewater districts who benefit from the reduction in inflow, just the way PGE and NW Natural pays towards Energy Trust: "Energy Trust of Oregon is an independent nonprofit organization dedicated to helping Oregonians benefit from saving energy and tapping renewable resources. Our services, cash incentives and solutions have helped customers of Portland General Electric, Pacific Power, NW Natural and Cascade Natural Gas save nearly $600 million in energy costs. Our work helps keep energy costs as low as possible and builds a sustainable energy future." Please bring Oregon up-to-date by allowing graywater reuse without burdening civic-minded citizens with penalty for their positive and progressive actions.	5
The first is regarding permitting fees. The proposed bill wants to impose fees for the initial permit process and a yearly permit on all graywater. I think charging any fees to level I and level II graywater permits is unfair. It punishes the very people who are concerned about the environment and are willing to make changes to their lives to help the community at large. Also when selling a house the system then becomes a liability because the new owners are burdened with the fee. The cost of the fees will be covered by the reduction in waste management processing. Assessing fees to level III graywater seems appropriate since they are dealing with large amounts of water.	6
Graywater reuse where volume is <300gal/day is a voluntary and environmentally responsible diversion of "sewage" from traditionally approved methods such as septic tanks and municipal sewer lines. As such, this practice, the installation of which incurs upfront costs for the homeowner, should not be subject to fees but rather encouraged wherever possible. While funding may be necessary to administer proper oversight, these funds should be derived from homeowners who continue to use municipal or septic systems where graywater could be reused responsibly. Especially for municipal jurisdictions, it is counter-intuitive to discourage graywater reuse through administrative fees which serve no tangible purpose such as inspections. Annual fees should be eliminated from these rules.	10
I'd like to speak to the permit fee. The way it's worded currently, is confusing. It's unclear to me if it's a $50 annual fee and in the context of this meeting whether that's paid upfront as in a $200 lump sum or if it's paid every year. I think either way it's a problem. It's in effective a tax on people who are installing graywater systems, which is going to be a disincentive for people to actually go through the permitting process. And I can understand the reasons for	12

the annual fee given that it's an operational permit. I wonder if there's a possible…or if there's no way around that, if there has to be annual fee because it's an operational permit, if there's a way that some sort of for a financial incentive could be worked out for people installing these systems because otherwise that's definitely going to prohibit people who either are installing the systems or from going through the permitting process and doing it above board. People who are using the system, if they are actually lightening the load on the public water treatment facilities and are having to pay for the privilege of doing so, it's seems there is something not quite right.	
My biggest concern is that the current rules as written don't encourage people from a permitting—Tier 1, Tier 2, and Tier 3—standpoint to do the right thing. What we really want are the citizens of this state to conserve water and reuse their graywater for local site-water management. And, I think the permitting system has two major problems. I think the fees in and of itself is going to be a major disincentive for most homeowners. I think most homeowners are going to anywhere spend from $50 - $1,000 installing a subsurface graywater system, they are not going to recoup it, they are doing this because they want to do the right thing, and adding a $200 fee plus a $50 annual maintenance fee on top of that is going to discourage most people from even getting into the permitting system. Once we discourage them from getting into the system we have no way of having any contact with these people at all.	13
But I think the state should take a broader view on the individual permits. Yes, it costs money to run this system, but in the long run it saves money for the state; it saves money for the local governments, and I think you really need to think about going to a $0 or near $0 fee for thing. If you're charging $10 for the exam, initial permitting, to write out these things, and it's essentially a recording fee at that point.	13
The first one has to do with the fees. To me, most all the other regulations are pretty well minded and have a good point where they're headed. The point with the fees—especially for Tier 1. I don't have any problems with Tier 2 or Tier 3, they take a lot of review, they take time to actually look at and determine if they're functioning or not. But Tier 1 is a very simple system for normal households. Other states have shown they don't need fees; they don't need regulations as much. If someone breaks the law, they are still going to get fined; the fees have nothing to do with that. When water comes into your house, you pay for it the first time—you're paying the electric bill for your pump at the well or you're paying it to the city. So you're already paying for that water one time. We should encourage graywater use, not discourage it, so I'm against Tier 1 fees.	28
Thirdly, the operator requirements to get a permit and not having to pay a cost, I think that is good. But with having the annual fee, there's a chance that the fee will go up. So even though we're saying $50 annual fee now, who knows what it will be next year. Anytime there is a fee and a municipality has to deal with it, there's likely there will be other fees on top of that. So we're opening a Pandora's box on these fees, especially for homeowners because all governments are looking for ways to make money, and this is certainly one way they can do it—everybody has needs. If it were totally shutoff from all the other choices and all we were trying to encourage that money to grow graywater use—that would be fantastic! But very likely that won't happen. It will be used to do Tier 2, Tier 3, and all the other purposes that DEQ does. All are fine, but when you have fee-based systems, it's good to have it exactly for it. We want to encourage certain uses and discourage others. Usually money that is charged to a consumer is to discourage a particular use, or to limit its use—to in a way manipulate how much it is used. We want to encourage graywater use; there's no reason in the world to discourage graywater use. If anybody is doing pollution, they need to be stopped; but if they're using it wisely to irrigate, we need to encourage that. We already have a situation where we're not only going to have—it looks like to me—that you can't just pay the one fee—the DEQ fee for a permit fee, for Tier 1, Tier 2, Tier 3 (of course for Tier 1 you don't have the permit fee), but you're going to have to pay a permit fee for your plumbing anyway. So you're already going to have a permit fee no matter what—even if it shows $0 here for DEQ, you're still going to have an inside part you're going to have to deal with—so you're still going to have that fee.	28

I would like to applaud the DEQ for addressing this issue. I personally feel it's a very important issue in our community these days. I believe this valley needs to modify their water usage. I do believe that agencies and counties and townships do need more money. So, I would like to ask that if water is becoming more valuable, which I believe it is around the world, then there needs to be more charges for it. If we need to pay more for our water, then we need to pay more for it. But please don't punish the people who are trying to help our water system. Please do make those of us who are standing up and trying something different to pay with these fees. If it's something where we can actually guarantee education or actual help onsite that would be different—such as in the Type 2 or Type 3. But I think there are some pretty grassroots people here who want to make a difference and we don't want to feel like we have to pay the bill. I please ask you to encourage water reduction and reuse.	32
Encourage broad graywater system reuse by removing entirely the permit and fee requirement for Tier 1 graywater treatment and reuse. The requirement to permit the systems and to pay an annual fee will have the effect of discouraging a large number of installations of simple systems that in the aggregate could have significant benefit and little health risk. We would prefer to see a Tier 1 definition that allowed basic residential graywater systems without permitting or fee requirements.	39

17 **Comment Summary:** **Charge a reasonable initial fee to obtain a permit to construct and install a graywater reuse and disposal system (such as the construction-installation permits issued under the onsite program), but eliminate the annual operating fee.**

DEQ Response: Oregon statute describes different permitting requirements for subsurface disposal systems, such as septic tanks, and graywater reuse and disposal systems. ORS 454.655 requires a permit to construct or install a subsurface sewage disposal system, such as a septic tank, which is a one-time construction-installation permit, similar to that issued by a local building department. In contrast, ORS 454.610 requires a person to obtain a permit to construct, install, or operate a graywater reuse and disposal system. The graywater reuse and disposal system permits in the proposed rules are operational permits as required by statute.

DEQ believes that public health and the environment will be best protected by installing well-designed graywater reuse and disposal systems that are well operated and maintained. Although fees are necessary to issue graywater reuse and disposal system permits, the proposed fee schedule has been modified to further reduce the cost of Tier 1 permits for homeowners who provide an annual report on the operation and maintenance of their graywater reuse and disposal system. DEQ is proposing a $50 new-permit application fee for Tier 1 graywater reuse and disposal system WPCF general permits and a $40 annual fee that may be waived or reduced if a homeowner submits an annual operations and maintenance report.

Original Comment	Commenter:
I would like to question the proposed fee schedule though. I can understand the need to charge an annual fee to businesses who will also need to have their graywater systems repeatedly tested. A business owner can write off that cost as a business expense and work at recouping it through the activities of the business. However, for homeowners, this annual expense is just that--expensive. Most homeowners suffer a one-time permit fee for any major home improvement--plumbing, electrical, building, etc. Unlike a business, a house does not generate income on its own if	8

the owner lives in it. As a homeowner, I would be reluctant to install a graywater system if I were required to pay an annual fee--it's like paying an additional property tax, and it's money that I can't hope to get back since that fee would essentially eat most of the savings that I would see on my water bill. Insisting that homeowners pay an annual fee to install a graywater system is going to result in a lot of people either not recycling graywater at all or installing unpermitted systems. Please consider changing the Tier 1 permit pricing structure to be a simple one time fee instead of a recurring annual fee. You'll get a much better and broader response, and a lot better aggregate savings at the wastewater treatment facilities.	
Concern #1. Permit and operating fees. Currently the permitting fees for Tier 1 and 2 systems will require not only an initial outlay of funds but also additional fees every few years to continue to operate the gray water system. The purpose of the fees is to fund the program's administrative costs and to ensure that gray water systems are being correctly designed and installed. I understand the need to have funds for DEQ to run the program however most individuals likely to be installing a gray water system will find these fees burdensome and will likely choose NOT to obtain a permit. This will have the double effect of not having the plans for these systems reviewed thus an educational opportunity to have the system done correctly will be lost and the DEQ will not have accurate data as to how many and what type of systems are out there. I think the fee for initial permitting a small volume, tier 1 or 2 system, should be in the range of $25-$50 with no fee for renewal for operating a gray water system as long as a "renewal report" is filed with the DEQ. This renewal report could include a basic description of the system, estimated flows and possibly a comment section to address issues or concerns the user has. This would allow the DEQ to have more accurate data on gray water systems and issues from Oregon users. For tier 3 systems or commercial/developer systems I think a fee for initial permit and ongoing operation with inspection is appropriate as these will be larger systems that will be used by individuals who did not design and install the systems and who may know little about gray water systems, their care and maintenance.	13
One - that the fee structure be set up to ENCOURAGE the installation and use of graywater systems rather than DISCOURAGE it as it does in your proposed fee structure. If no one does it because it's too expensive then you have wasted your time and an important opportunity for the State to do the right thing for the environment as well as the budget. Specifically, the annual fees on all three tiers are too high. Once a system is established and inspected (and that could be part of just the plumbing inspection in new construction) there should be no further costs to the state and in fact there will be a savings. If anything, people using graywater systems should receive a discount on the sewer fees because they will be using that system approximately 50-70% less than a comparable non-graywater home.	20
Incentivize the reuse of graywater instead of regulating and annual recertification. I realize this is difficult due to the need for funding the program for oversight- however I believe during this challenging economic time you will find the public is more receptive to incentives. I recommend charging a fee upfront that is perhaps higher than proposed with NO annual due. I also recommend that you consider a non-monetary incentive like a certificate that can be proudly displayed on site where the reuse is occurring- thus garnering public awareness and potential interest.	23
The second thing is that I don't see much difference between operating a septic system that is totally subsurface—say 4 or 5 feet subsurface—versus a system that is 1 to 2 inches subsurface. We don't charge annual fees for people who have septic tanks, which is not using the water very well. It's just going to the groundwater and not irrigating any plants, so at least with graywater systems we're getting a good use out of the water. So if there is going to be fees they ought to be against septic tank use, not so much graywater use.	28
I'm really disappointed in the $50/yr fee for Tier 1 graywater use. I think that comes across as being a fine rather than encouraging people to use this resource. I realize that to create this program there needs to be some way of funding it, but maybe there is a way that instead of the money coming from the people that are trying to use this and be pioneers in creating these	29

systems, I think there's a way of finding fees. Maybe it's a couple of pennies per month on your sewage bills or something. This water is no longer going into the sewage system, it's being used and reused onsite. Also look at some sort of incentive, because it really does come across as a penalty

I also agree about the fees especially for the Tier 1: I think it's regressive. I think even if there was an initial fee to get thing started but the yearly—every year [fee]—is a big disincentive. I think people who are stepping up to do this shouldn't be burdened with this and I know that it is a big challenge—especially with governments in the red—getting this mandate and not having the funds to carry it out. It's a hard nut-to-crack, but I think this needs to be rethought—the ongoing fee schedule—and I don't agree with it.	31

The one area I take issue with however is the proposed annual fees. While I am not opposed to the permit fees per se, I am opposed to the annual fee which seems essentially punitive rather than rewarding. In other words, those who chose to conserve water resources by implementing graywater strategies should be provided incentives, not be discouraged by annual fees. Charging an annual fee seems backwards. Fees should be imposed for negative impacts, not positive ones. Instead, we should be integrating a universal fee into everyone's household water/wastewater costs. Then if a homeowner chooses to design and implement graywater systems (or rain harvesting systems for that matter) then the fee would be waived for the positive contribution to water conservation and sustainable living practices. These fees should be specifically earmarked for supporting all water conservation programs and fund tax credits, incentives, education and projects. I would rather see a small and reasonable permit fee (Tier 1) to ensure correct design and installation as opposed to an annual fee that is really only a deterrent and likely not to encourage people to follow the rules. Please remove the proposed annual fees from the rule and replace it with a more equitable fee strategy. Its time we all pay the true cost for water and provide incentives to use it more wisely and responsibly. Let's make it easier not more difficult to do the right thing.	37

18 **Comment Summary:** **Create incentives for graywater reuse. Ideas for incentive include monetary incentives such as a tax credit on Oregon income taxes and non-monetary incentives such as a certificate which graywater users can proudly display on their walls.**

DEQ Response: It is beyond the scope of DEQ's authority to provide tax-credits for graywater reuse. However, DEQ has modified the proposed fee schedule to provide additional incentives for graywater reuse.

Original Comment	Commenter:
I'd like to speak to the permit fee. The way it's worded currently, is confusing. It's unclear to me if it's a $50 annual fee and in the context of this meeting whether that's paid upfront as in a $200 lump sum or if it's paid every year. I think either way it's a problem. It's in effective a tax on people who are installing graywater systems, which is going to be a disincentive for people to actually go through the permitting process. And I can understand the reasons for the annual fee given that it's an operational permit. I wonder if there's a possible…or if there's no way around that, if there has to be annual fee because it's an operational permit, if there's a way that some sort of for a financial incentive could be worked out for people installing these systems because otherwise that's definitely going to prohibit people who either are installing the systems or from going through the permitting process and doing it above board. People who are using the system, if they are actually lightening the load on the public water treatment facilities and are having to pay for the privilege of doing so, it's seems there is something not quite right.	12

Incentivize the reuse of graywater instead of regulating and annual recertification. I realize this is difficult due to the need for funding the program for oversight- however I believe during this challenging economic time you will find the public is more receptive to incentives. I recommend charging a fee upfront that is perhaps higher than proposed with NO annual due. I also recommend that you consider a non-monetary incentive like a certificate that can be proudly displayed on site where the reuse is occurring- thus garnering public awareness and potential interest.	23
Under the incentives, maybe if DEQ is able to rethink, maybe the fee could be less. And, maybe it's not called a fee, maybe it's called something else. I don't know what the possibilities are; I haven't had time to think that much. But in terms of incentives, and I think that is a good phrase, maybe it could be a tax credit on the Oregon income tax. If you're doing this one thing—or Tier 1, Tier 2, or Tier 3—and if you're trying to help the environment, that you can get some tax credit for it. It would be an incentive, but not be quite so difficult for any one person to face up front.	33

20 **Comment Summary:** **Individual savings on water use are not sufficient to offset the annual fee. When considering the cost of water and the limited period when people will need to use graywater because of insufficient natural precipitation, it is unlikely many people could save enough money to pay for the permit.**

DEQ Response: Individuals typically choose to reuse graywater for sustainability rather than monetary benefits. However, the individual monetary benefits of graywater reuse will depend on climate, water use, and water rates. Consequently, individual savings will vary across the state. In more arid areas of the state with high water rates, greater savings are anticipated than in wetter areas with lower water rates.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
To extend my comments given at the March 2 hearing in Eugene, I wish to point out that in Eugene we are charged $1.41/kgal for the first 8 kgal used in a month, and $1.93/kgal for use over that. 8 kgal is a lot for a conservation-minded household to use in a month, so it is likely that water saved through greywater reuse would only reduce water payments at the lower rate. But even if we assume the higher rate applies, it would require 20,725 gallons to be saved just to recoup the $40/year proposed fee for a tier 1 permit. That is 69 days saving the absolute maximum of 300 gallons/day. There are only 62 days in July and August when greywater reuse makes the most sense. Furthermore, almost all households are fewer than 7 bedrooms, meaning the presumed greywater given in table 1 would be less than 300 gallons/day. It is unlikely many people could save enough water to pay for their permit, so these proposed rules fail to achieve their stated purpose of encouraging the reuse of greywater. The same issues relate to tier 2 and tier 3 systems; while the water flows are greater, the application fees would usually negate any savings potential.	26
Looking at our water utilities website, it looks like we pay for a household that uses between 8,000 and 22,000 gallons per month, the fee is under $2/gallon; if it's under 8,000 per month, it's even less. The upshot of that is before someone is going to save $50 a year on their water bill, they're going to have to use/recycle 300 gallons per day for 87 days. Now generally as far as the [graywater], reaching the point where graywater is appropriate usually happens around the beginning of July; so [in] July and August people would be applying the graywater; and then in September, the evapotranspiration reduces by about half, on average. It's hard for me to see how a property owner would actually save more in their water bill than they would have to pay in the annual fee, and as a result I don't see how these rules can actually be seen as encouraging the beneficial reuse of graywater, as was the purpose of the legislation.	26

21 **Comment Summary:** **The proposed fees do not appear adequate to cover program costs. A successful graywater program is dependent on stable funding to enable proper administration, permitting, and enforcement without creating a burden on individual users or local jurisdictions. In the proposed rules, funding relies solely on fees, which are dependent on the cost and number of permits issued. Adequate fees will be critical to support any Program Agents described in OAR 340-0543-0110(3).**

DEQ Response: Because this will be a voluntary program supported solely by permit fees, projecting program funding is difficult. When establishing the proposed fees, DEQ balanced anticipated program costs against the need to charge fees that would still encourage graywater use among users. DEQ solicited information on proposed fees from the DEQ Graywater Advisory Committee, which suggested that a $50 per year fee would provide program funding while not discouraging graywater reuse among most users. DEQ will continue to review program costs and funding sources and may adjust permit fees in a future rulemaking.

The proposed rules [OAR 340-053-0110(a)(D)] allow a Program Agent to establish a fee schedule that is different from that used by DEQ.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Funding and support of the Graywater program is a significant issue. As there are no funds, other than fees associated with the Rule, the support of the program will be dependent on the number and cost of the permits issued. It's uncertain how many in Oregon will embrace the permit. Proposed permit fees are based on very rough projections for the number of permits to be issued in each tier. A successful Graywater program is dependent on ongoing stable funding to enable proper administration, permitting and enforcement without a burden to the user or the jurisdiction in which the system is being used	38
OAR 340-045-0075, Table 70G ORS 468.065(2) specifies that environmental permit fees shall cover the cost of processing applications and supporting an inspection program to determine compliance with the permit. The graywater system fees proposed in OAR 340-045-0075, Table 70G do not appear adequate to cover these costs. Zero dollars for a Tier I system permit application does not cover any cost. The $50 dollar annual fee for Tier I and II systems seems low compared to a more typically listed $448 rate. Adequate fees will be critical to support any Program Agents described at OAR 340-053-0110(3).	41
The City in concerned that the graywater reuse program does not have an adequate funding mechanism to ensure proper program development, implementation and enforcement in a manner that will protect environmental and public health. a. Funds generated by permit fees are intended to cover program implementation costs, but this funding source … will depend on the number and types of permits issued. b. Education and technical assistance materials will be critical to the successful implementation of graywater reuse systems. Making sure system owners understand system maintenance requirements and potential public health impacts from improper operation of the system will be essential to a successful program.	46

25 **Comment Summary:** **Program costs should be assessed on homeowners who continue to use municipal or septic systems, not on graywater users who are leaders taking innovative, environmentally responsible actions to divert "sewage" from traditional wastewater treatment systems. People using graywater systems**

should receive a discount on their sewer fees.

DEQ Response: DEQ does not have authority to increase or decrease sewer fees. Fees for onsite wastewater treatment systems are beyond the scope of this rulemaking.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Charging people for simple or existing systems is the wrong thing to do. It is a public good for people to reuse lightly used water rather than for them burdening the regional sewage system and the regional water supply systems. - It saves rate payers money to not have to enlarge these systems. In Portland there is a huge charge for runoff due to the capacity demands it puts on the system. In Clackamas County there are unwanted sewage rate charges due to system expansion. - It benefits our natural environment to reduce the water withdrawals from rivers and ground water and to reduce waste water dumpage, now mixed with industrial waste, into these natural systems. - People need encouragement to make this switch rather than the disincentive that a fee creates. - People who have been using graywater should not have to pay for their existing practices. I remember my mom putting her wash machine discharge (using biodegradable soaps) on our landscaping during a drought decades ago: she should have to pay? Should the housewife (or camper) who throws the dishwater out on flowers have to pay? Actually, this should be common practice as it saves everyone money and benefits the environment. - Education might be as economical as a permit fee for simple systems, because the permit fee probably wouldn't cover the staff time anyway if it exceeded an hour -- and it would include the education, the plan examination and any inspection. - Any fee should be paid by the sewage/wastewater districts who benefit from the reduction in inflow, just the way PGE and NW Natural pays towards Energy Trust: "Energy Trust of Oregon is an independent nonprofit organization dedicated to helping Oregonians benefit from saving energy and tapping renewable resources. Our services, cash incentives and solutions have helped customers of Portland General Electric, Pacific Power, NW Natural and Cascade Natural Gas save nearly $600 million in energy costs. Our work helps keep energy costs as low as possible and builds a sustainable energy future." Please bring Oregon up-to-date by allowing graywater reuse without burdening civic-minded citizens with penalty for their positive and progressive actions.	5
Graywater reuse where volume is <300gal/day is a voluntary and environmentally responsible diversion of "sewage" from traditionally approved methods such as septic tanks and municipal sewer lines. As such, this practice, the installation of which incurs upfront costs for the homeowner, should not be subject to fees but rather encouraged wherever possible. While funding may be necessary to administer proper oversight, these funds should be derived from homeowners who continue to use municipal or septic systems where graywater could be reused responsibly. Especially for municipal jurisdictions, it is counter-intuitive to discourage graywater reuse through administrative fees which serve no tangible purpose such as inspections. Annual fees should be eliminated from these rules.	10
The second thing is that I don't see much difference between operating a septic system that is totally subsurface—say 4 or 5 feet subsurface—versus a system that is 1 to 2 inches subsurface. We don't charge annual fees for people who have septic tanks, which is not using the water very well. It's just going to the groundwater and not irrigating any plants, so at least with graywater systems we're getting a good use out of the water. So if there is going to be fees they ought to be against septic tank use, not so much graywater use.	28
A final thought: I know that DEQ must find a way to fund such programs as these. But isn't it a shame that annual fees are imposed upon folks taking the innovative, forward-thinking, environmentally conscious steps to reuse and responsibly disperse/dispose of their	47

greywater? I'm afraid the comment, "Let no good deed go unpunished" come to the surface fast. Wouldn't it be better to charge fees for the less environmentally sound actions??

165 **Comment Summary:** **OAR 340-045-0070(3) should refund fees minus any costs that were incurred for processing and administration.**

DEQ Response: OAR 340-045-0070(3) states DEQ may refund fees in whole or in part if the department determines a permit is not required or the wrong application was filed.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
- 045-0070 (3) refund fees minus any costs that were incurred for processing and administration.	3

169 **Comment Summary:** **On going annual fees will be a detriment to someone selling a house with a graywater system. Somebody buying your house is not only buying a house, but also fees for infinity as long as they own the house.**

DEQ Response: A person who purchases a property with a graywater reuse and disposal system can choose to either obtain a permit to operate the system or abandon the system. A property owner choosing to abandon the system will not be charged ongoing permit fees.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Bringing that up, when you sell a house, it's definitely going to be a detriment if you have a graywater system. Somebody that's buying your house—they're not only buying a house, but they're buying fees for infinity as long as they own the house. So to me it's a discouragement for selling your house as well. It's going to make it a detriment for that. So we want to encourage not that it would be a detriment. So again that's why you want a plan and you want a manual so that you can pass it along. If it is abandoned, I think you should lock it out versus having to totally remove it—and that makes the most sense to me.	28

Fees

Tier 1

OAR 340-045-0075

22 **Comment Summary:** **A $50 annual fee for a Tier 1 permit is a very reasonable fee for homeowners.**

DEQ Response: A number of other commenters believed that a $50 annual fee would create a disincentive for homeowners operating a graywater reuse and disposal system and DEQ chosen to modify permit fees. Although an annual fee will be maintained, DEQ has updated the rules to allow the fee to be reduced or waived if the homeowner submits an annual report on the operation and maintenance of the graywater reuse and disposal system.

Original Comment	Commenter:
Maximizing accessibility Finally, I want to note that the rules admirably include a $0 application fee and a reasonable $50 annual fee. However, this masks that the first four years of the fee are required up front, creating a $200 initial permitting cost. This creates significant "sticker shock" for homeowners and renters in the midst of an economic crisis, increasing the likelihood once again that people will delay installation of graywater systems – or simply ignore the permits. There seems little benefit to this: the permitting bodies will get the money anyway over the	15

permitting period, and sticker shock benefits no one. This was not the intention of the legislature in requiring permits to be as accessible as possible.

The three tier approach to permitting is an appropriate mechanism for the many possible sites and
situations. Tier 1, in particular, seems very accessible to the average homeowner. Specifically, $50
per year is a very reasonable fee and agreeing to follow “best management practices” does not create an
administrative burden. — 25

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24 **Comment Summary:** **The wording on the permit fees is unclear. It's unclear if it's an a $50 annual fee or whether it's paid upfront as a lump sum.**

DEQ Response: DEQ has modified the proposed fees schedule and clarified that the annual fee must be paid annually.

Original Comment — Commenter:

I'd like to speak to the permit fee. The way it's worded currently, is confusing. It's unclear to me if it's a $50 annual fee and in the context of this meeting whether that's paid upfront as in a $200 lump sum or if it's paid every year. I think either way it's a problem. It's in effective a tax on people who are installing graywater systems, which is going to be a disincentive for people to actually go through the permitting process. And I can understand the reasons for the annual fee given that it's an operational permit. I wonder if there's a possible…or if there's no way around that, if there has to be annual fee because it's an operational permit, if there's a way that some sort of for a financial incentive could be worked out for people installing these systems because otherwise that's definitely going to prohibit people who either are installing the systems or from going through the permitting process and doing it above board. People who are using the system, if they are actually lightening the load on the public water treatment facilities and are having to pay for the privilege of doing so, it's seems there is something not quite right. — 12

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167 **Comment Summary:** **I believe that requiring homeowners to pay 5 years fees up front will result in minimal numbers of systems being permitted.**

DEQ Response: Based on various comments received on the proposed fee schedule, DEQ has modified the fee schedule for Tier 1 permits and is proposing a $50 new-permit application fee and a $40 annual that can be reduced or waived if the system owner submits an annual operations and maintenance report.

Original Comment — Commenter:

Maximizing accessibility — 15
Finally, I want to note that the rules admirably include a $0 application fee and a reasonable $50 annual fee. However, this masks that the first four years of the fee are required up front, creating a $200 initial permitting cost. This creates significant “sticker shock” for homeowners and renters in the midst of an economic crisis, increasing the likelihood once again that people will delay installation of graywater systems – or simply ignore the permits. There seems little benefit to this: the permitting bodies will get the money anyway over the permitting period, and sticker shock benefits no one. This was not the intention of the legislature in requiring permits to be as accessible as possible.

I believe that requiring homeowners to pay 5 years fees up front will result in minimal numbers of systems being permitted. — 24

Fees

Tier 3 — OAR 340-045-0075

27 **Comment Summary:** **Please remove the annual fee for Tier 3 permit for graywater systems that**

use <300 gpd and 300-1200 gpd. The annual fee makes Tier 3 permits for graywater systems producing <300 gpd and between 300 and 1200 gpd prohibitively expensive. Collection of an annual fee could be difficult for DEQ, use up DEQ staff time, and deter property owners with low volume graywater systems from adding innovative disposal and composting toilet systems.

DEQ Response: Tier 3 permits will be issued for systems that produce high volumes of graywater, use advanced treatment, are located in sensitive areas, or require custom permit conditions. Since Tier 3 permits are individual permits that will require significant staff time, including reviewing application materials, approving designs, and developing custom permit conditions, issuance of a Tier 3 permit necessitates higher fees. The proposed fees are consistent with those required for the review, evaluation, and issuance of individual permits under DEQ's onsite wastewater treatment program. DEQ has administrative processes for collecting annual fees associated with individual WPCF permits.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Permit Fees • Current ruling: Fees and annual operating permits for gray water systems are as stated: Tier New permit Annual 1 $0 $50 2 $534 $50 3* $601-3,404 $334-$801 *The fees for a Tier 3 graywater reuse and disposal system WPCF individual permit 071-0140. See http://www.deq.state.or.us/wq/rules/div071/tables1-9.pdf. • Argument: In order to water root crops and use a sprinkler, tier 3 is required for a single residence. This would cost the owner between $601 and 3,400 for the permit plus maintenance cost between $300 and 800. This is much more than annual sewer costs if purchased from the city. This price creates a disincentive for graywater use. • Request: That Tier 3 fees for residences are identical to Tier 2 or root crops and sprinklers be allowed for in Tier 2 systems.	14
The cost of the permits and the annual permit fee is a disincentive for [reusing graywater]. In fact it could potentially cost, if we have to go to a Type 3, anywhere from $3000, just for the original permit, and I'm just talking about the annual cost, and then to higher—much higher—than that, and, not being offered the opportunity to offset that from the lack of sewage use and lack of water use. To allow for compensation if you're not going to use the sewer or you greatly reduced your sewage use and your water use to offset that fee—to in fact make it neutral so that the cost is the same if you use the sewage system or the graywater system. I'm hoping the rules can be developed in such a way that can allow for net-zero, for sustainable homes, to flourish in the Portland area.	14
[My] comments have to do with the development of small systems…60 gallons per day, that's 3 people in a house taking 10 minute [showers] with 2 gpm showerheads and picking up the water from the drains. Trying to take that to a Tier 3 system--$601 minimum as a fee for that seems way out of line, especially for what I'm intending to do, which is develop small systems—not big systems—but very well developed systems for cleaning the water possibly past Tier 3 and even to potable. But as somebody already mentioned [it's a] disincentive with having the fees that high. I like the biodiesel cure of actually checking the education of the person involved, that does sound like a good way around it.	17

But the issue of these fees where I'm looking at a total system cost of possible $250, but it takes a $601 fees to even use it? That's a disincentive. That's stifling research; that's stifling what I'm concerned with is small business development.

And, trying to get away from the assumption that a Tier 3 system is a big system is what I'm encouraging you guys to do. 60% of actual use really does seem like a good idea.

The lowest cost tier 3 permit is $601 plus a yearly fee of $334. The yearly fee makes tier 3 permits for graywater system with <300 GPD and 300-1200 GPD prohibitively expensive. Systems with tier 1 and tier 2 GPD uses should not have to pay a yearly fee. The amount of the yearly fee limits access and having a yearly permitting fee is not something that households and small communities are use to paying. Collection of a yearly fee could be difficult, use up staff time, and deter residents with smaller GPD systems from adding innovative disposal and composting toilet systems. 40

I understand requiring a tier 3 permit for disposal of graywater and graywater/composting toilet systems where no septic system or city sewer connection is in place. I understand more over site of the design of these systems supports their safe implementation. These two types of innovation are very important for limiting the load on our currently overloaded sewer system and transitioning human sanitation systems into more resource efficient, environmentally safe and sustainably designed systems.

Below is an expert from HB 2080 regarding permitting and disposal:

(b) Minimize the burden of permit requirements on property owners; and
(c) Prescribe requirements that allow for separate systems for the treatment, disposal or reuse of gray water. These requirements must ensure the protection of:
(A) Public health, safety and welfare;
(B) Public water supplies; and
(C) Waters of the state, as that term is defined in ORS 468B.005.

On site disposal of graywater keeps it out of the already overloaded sewer system that overflows into our rivers polluting our water system with black water. Graywater/Composting toilet systems safely manage human waste and turn it into a resource. Septic systems are installed below the 18 inches of top soil where all the healthy bacterial life lives. These bacteria love to eat the nutrients in graywater, creating a healthy relationship. When a septic system is operated incorrectly or fails it is a big issue for ground water pollution. Graywater/Composting toilet systems don't rely on septic systems and are safer for our water system.

Please remove the yearly fee for tier 3 permits for graywater systems that use <300 GPD and 300-1200 GPD. Also please remove the requirement that <300 GPD systems need a designers/engineers approval. The site evaluation, design plan and owners manual should provide enough information to insure the safety of a small system. This will support the development of innovative smaller systems.

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168 **Comment Summary:** **For tier 3 systems or commercial/developer systems, a fee for initial permit and ongoing operation with inspection is appropriate. These will typically be larger systems that will be used by individuals who did not design and install the systems, and who may know little about the operation and maintenance of graywater systems.**

DEQ Response: Comments noted.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Concern #1. Permit and operating fees. Currently the permitting fees for Tier 1 and 2 systems will require not only an initial outlay of funds but also additional fees every few years to continue to operate the gray water system. The purpose of the fees is to fund the program's administrative costs and to ensure that gray water systems are being correctly designed and installed. I understand the need to have funds for DEQ to run the program however most individuals likely to be installing a gray water system will find these fees burdensome and will likely choose NOT to obtain a permit. This will have the double effect of not having the plans for these systems reviewed thus an educational opportunity to have the system done correctly will be lost and the DEQ will not have accurate data as to how many and what type of systems are out there. I think the fee for initial permitting a small volume, tier 1 or 2 system, should be in the range of $25-$50 with no fee for renewal for operating a gray water system as long as a "renewal report" is filed with the DEQ. This renewal report could include a basic description of the system, estimated flows and possibly a comment section to address issues or concerns the user has. This would allow the DEQ to have more accurate data on gray water systems and issues from Oregon users. For tier 3 systems or commercial/developer systems I think a fee for initial permit and ongoing operation with inspection is appropriate as these will be larger systems that will be used by individuals who did not design and install the systems and who may know little about gray water systems, their care and maintenance.	13
I think you have to charge fees for the big systems because just like right now my plumber is installing my system and Washington County is not quite sure what to do with this whole idea of double-plumbing right now, but they're going with it because of these rules coming on. But it's all part of the plumbing system and part of the initial fees. I think you have to have the same thing for a huge system. For me, it's my house and the people in it. Hopefully I'm going to train them well and everything like that. And for most people that's exactly what it's going to be—no different than learning how to run your own irrigation system and your own watering system. But for an eco-complex or a large industrial complex, like they've done at the [waterfront] tower where they're recycling all the water into the toilets, those are permitted system and I think they should be.	13

Purpose and policy

OAR 340-053-0050

29 **Comment Summary:** **Inappropriately managed graywater reuse systems could cause exposure to pathogens, ponding, mosquito and vector problems, odors, runoff to neighboring property and streams, and groundwater contamination. In order for graywater reuse and disposal systems to be successful long term, a cautious, controlled, conservative approach should be applied to avoid negative outcomes and loss of public support.**

DEQ Response: The objectives of the proposed rules are to allow graywater reuse for beneficial purposes such as irrigation as well as protect public health and the environment. DEQ believes that conditions in the proposed rules meet both objectives.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Inappropriately managed graywater reuse systems as applicable to Division 53 raise other concerns. Reuse systems could cause exposure to pathogens, ponding, mosquito and rate vector problems, odors, runoff to neighboring property and streams, and groundwater contamination. In order for graywater reuse and disposal systems to be successful long term, a cautious, controlled, conservative approach should be applied to avoid negative outcomes and loss of public support.	41

Applicability

OAR 340-053-0060

32 **Comment Summary:** **A few commenters noted that the proposed rules did not include toilet flushing as a beneficial use of graywater. One commenter, noting that this was an area of overlapping jurisdiction between DEQ and building codes, asked that the limitations separating indoor and outdoor graywater treatment and reuse be removed from the proposed rules.**

DEQ Response: The flushing of toilets and urinals with graywater has been allowed since 2008 under statewide Alternate Method Rulings made by the Building Codes Division (BCD) of the Department of Consumer and Business Services. Under the Alternate Method Ruling, graywater must be treated by a system recognized by BCD before being used for toilet flushing.

DEQ recognizes the overlap of jurisdiction among state agencies and works with sister agencies to clarify roles and align programs as much as possible. Following additional discussion between DEQ and BCD, the proposed rules have been updated to allow toilet or urinal flushing, floor drain trap priming, and stand alone fire suppression systems in commercial and residential buildings with Type 3 graywater permitted under a Tier 3 Graywater Reuse and Disposal System individual permit. Graywater treatment to Type 3 standards may occur either inside or outside a building. Adding these beneficial purposes makes the reuse of Type 3 graywater consistent with the standards for Class B recycled water produced by municipal wastewater treatment facilities. However, a person seeking to use Type 3 graywater for these beneficial purposes under a DEQ permit will need to obtain approval from local building officials through an appeal for an alternate ruling. The alternate ruling may be required as part of the Tier 3 permit application.

Original Comment	Commenter:
At first glance I did not see where you are specifying the requirements for graywater use for toilet flushing. Would you direct me to where it is in the proposed rules. If it is not in the proposed regulations, Why? Can it still be added?	2
TOILET FLUSHING – It appeared to me that the regs would not permit flushing of toilets with either level of graywater. This is really puzzling to me, as were the regs requiring water to be brought up to drinking water standards before being put into a toilet bowl filled with feces. I don't understand any rationale for not permitting flushing of toilets with graywater.	34
We would like to see the limitation separating indoor and outdoor treatment and reuse removed. We realize that this is connected with plumbing code issues outside DEQ prevue, but since it can be a significant constraint for sustainable projects seeking to maximize the reuse of treated water, we mention it both here and with Oregon plumbing code officials. There are instances where treating graywater outside – particularly with sustainable natural systems such as constructed wetlands – would be most effective. It is unfortunate that there are no provisions for bringing the treated water back into buildings for appropriate reuse.	39

Definitions

OAR 340-053-0070

4 **Comment Summary:** **Clarify the difference between the terms "beneficial purpose" and "beneficial use".**

DEQ Response: The term "beneficial purpose" is defined in OAR 340-053-0070(1): Beneficial purpose or reuse means graywater is utilized for a resource value, such as to provide moisture. Examples include the irrigation of landscape vegetation, planters, greenhouses, vegetated roofs, and living walls.

The term "beneficial use" has a specific meaning in the rules for Water Quality Standards. Under OAR 340-041 beneficial use refers to the purpose or benefit to be derived from a water body.

To avoid confusion, the term "beneficial use" is not used in the proposed graywater rules.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Clarify the differences between terms "beneficial purpose" and " beneficial uses".	46

36 **Comment Summary:** **Modify the landscape pond definition to clarify that stormwater management ponds are not considered landscape ponds.**

DEQ Response: The definition of landscape pond has be updated to include this clarification.

Original Comment	Commenter:
Modify the landscape pond definition to clarify that stormwater management ponds are not consider [sic] landscape ponds.	46

37 **Comment Summary:** **We recommend removal of the term “disposal” from the rules. The proposed rules defines graywater disposal as the land application of graywater at rates that exceed plant needs for supplemental water, as measured by vegetation-specific evapotranspiration less precipitation. Graywater use should be limited to beneficial purposes only. Disposal practices should be addressed through the DEQ’s regulations for On-Site Wastewater Treatment Systems (See OAR 340, Division 71). Disposal and reuse are entirely different practices and disposal should not be use interchangeably with reuse practices. In addition, off-season management and disposal of flows must be included in the proposed rule. There should be submittal requirements and review decision making criteria by DEQ on this issue.**

DEQ Response: ORS 454.610 directs the EQC to adopt rules for permitting "graywater reuse and disposal systems," and thus, the term disposal is relevant to the proposed rules. However, the proposed rules do not include a separate definition for the term "graywater disposal;" consequently, the terms graywater reuse and graywater disposal are not used interchangeably.

The rules direct a person to dispose of non-graywater or graywater unsuitable for reuse in an approved wastewater disposal system, which includes municipal or community system permitted under a WPCF or NPDES permit under OAR 340-045 or an onsite wastewater treatment system permitted under OAR 340-071.

OAR 340-053-0090(1)(a)(A) has been updated to clarify further that a person must divert graywater not suitable for reuse to an approved sewerage system or an

approved and functioning onsite wastewater treatment system.

Original Comment	Commenter:
We recommend removal of the term "disposal" from the rule. The proposed rule defines graywater disposal as the land application of graywater at rates that exceed plant needs for supplemental water, as measured by vegetation-specific evapotranspiration less precipitation. Graywater use should be limited to beneficial purposes only. Disposal practices should be addressed through the DEQ's regulations for On-Site Wastewater Treatment Systems (See OAR 340, Division 71). Disposal and reuse are entirely different practices and disposal should not be use interchangeably with reuse practices. In addition, off-season management and disposal of flows must be included in the proposed rule. There should be submittal requirements and review decision making criteria by DEQ on this issue.	38

38 **Comment Summary:** **OAR 340-053-0080 sections 5 and 8 refer to an "approved" sewerage system or an "approved" onsite wastewater treatment system. What is an approved system? If a property owner's system is not an approved system how can a person get their system approved prior to applying for a graywater reuse and disposal system permit?**

DEQ Response: Using the Webster's dictionary definition of "approved" as meaning "a. to accept as satisfactory" or "b. to give formal or official sanction to", in the context of the proposed rules, an approved sewerage system refers to a wastewater collection system connected to a wastewater treatment system that has been issued a NPDES or WPCF permit under OAR 340-045. An approved onsite wastewater treatment system is a system that has been permitted under OAR 340-071. An approved onsite wastewater treatment systems would also include the subset of subsurface disposal systems, alternative sewage disposal systems, and nonwater-carried sewage disposal facilities constructed prior to January 1, 1974, and meeting the exemption under ORS 454.675. If a wastewater disposal system has not been approved, a person must get the appropriate approval under OAR 340-045 or OAR 340-071.

No changes were made to the proposed rule in response to this comment.

Original Comment	Commenter:
OAR 340-053-0080 Items 5 & 8 mention an "approved" system or an "approved" wastewater collection system. What is an approved system? If a property owner's system is not an approved system how can a person get their system approved prior to applying for a graywater reuse permit?	22

39 **Comment Summary:** **Treatment standards are not specified in the definition section. The associated water quality characteristics specified for primary and secondary treatment should be clearly defined in the rules.**

DEQ Response: The Secretary of State has directed agencies not to include operative provisions in the definition of a term. Consequently, numeric criteria for secondary treatment and disinfection of graywater are given in OAR 340-053-0090.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
340-053-0070 (5) Treatment standards are not specified in the definition section. The associated water quality characteristics specified for primary and secondary treatment should	38

be clearly defined in the rules.

40 **Comment Summary:** **Add a definition for "geographic general permit" which is referred to under permit requirements for Tier 1 and Tier 2 system. The geographic general permit is an important tool, but it is not defined and it is unclear what it is or why it would be used or under what circumstances.**

DEQ Response: All references to "specific geographic area graywater reuse and disposal system WPCF permit" occur under OAR 340-053-0110(1). OAR 340-053-0110(1)(c)(A) states that "when necessary to protect public health or the environment, the department may issue a graywater reuse and disposal system WPCF general permit that covers a specific geographic area." Additional clarification on specific geographic area graywater reuse and disposal system WPCF permits, including examples of when a permit may be necessary, will be included in an Internal Management Directive developed for DEQ staff implementing the program.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Add a definition for "geographic general permit" which is referred to under permit requirements for Tier 1 and Tier 2 systems. The geographic general permit is an important tool, but it is not defined and it is unclear what it is or why it would be used or under what circumstances.	46

41 **Comment Summary:** **What is oxidized mean in the rule? Oxidized to me is the process caused by a disinfection process.**

DEQ Response: A definition for "oxidized graywater" has been added to the proposed rules: "Oxidized graywater" means a treated graywater in which the organic matter is stabilized and nunputrescible, and which contains dissolved oxygen.

The definition for "Type 1 graywater" has been modified: "Type 1 graywater" means graywater that contains dissolved oxygen and may have passed through primary graywater treatment, but has not passed through secondary treatment.

The following statement has been added to OAR 340-053-0090(2) pertaining to Type 1 graywater: Type 1 graywater is presumed to contain dissolved oxygen if it has been stored 24 hours or less and does not have an objectionable odor.

Original Comment	Commenter:
-0070 What is oxidized in the rule mean? Oxidized to me is the process caused by a disinfection process.	3
Where is the term "oxidized" defined? A definition should be given for "graywater discharge point." This term has application to setback measurements.	41

42 **Comment Summary:** **OAR 340-053-0070 (1) Example beneficial purposes listed here are limited to irrigation. Additional beneficial uses are listed elsewhere in the rule at 340-053-0090. The definition should at least reference other beneficial purposes.**

DEQ Response: Irrigation is anticipated to be the primary beneficial reuse of graywater and has been highlighted as an example in the definition. The terms "such as" and "examples include" used in the definition imply that the list of beneficial purposes

in the definition is not exhaustive. Language has been added to the definition to further clarify that graywater beneficial purposes are not limited to irrigation.

Original Comment	Commenter:
OAR 340-053-0070 (1) Example beneficial purposes listed here are limited to irrigation. Additional beneficial uses are listed elsewhere in the rule at 340-053-0090. The definition should at least reference other beneficial purposes.	41

43 **Comment Summary:** **OAR 340-053-0070 (4)(a). Graywater itself is defined by reference to ORS 454.605 and includes water from several sources including kitchen sinks and laundry. It appears that per 0080(8), Graywater Limitations, non-garbage disposal kitchen sink graywater requires primary treatment to qualify as Type 1 graywater. Furthermore, dishwasher, garbage disposal, and diaper laundry water cannot be managed in a graywater reuse system. This seems confusing as the definition of graywater includes subsets that cannot be managed by a graywater reuse system. It might help if the graywater definitions had each source explicitly listed along with conditions for Tiered eligibility.**

DEQ Response: Both graywater and sewage are defined in ORS 454.605; graywater is defined as a subset of sewage. Sources of wastewater that have not been identified as graywater are still defined as sewage. OAR 340-053-0080(8) clarifies types of wastewater that are not part of the statutory definition of graywater and fall under the definition of sewage. These include wastewaters from dishwashers, garbage disposals, and laundries that are contaminated with infectious materials, such as soiled diapers.

With the exception of graywater originating from kitchen sinks, the proposed rules provide operational definitions for Type 1, Type 2, and Type 3 graywater in OAR 340-053-0070(4) that are independent of the fixture from which the graywater originates. Because kitchen sink wastewater may contain high concentrations of organic materials and suspended solids that increase the risk of a graywater reuse and disposal system failing and causing impacts to public health or the environment, the DEQ Graywater Advisory Committee specifically recommended that graywater originating from this fixture pass through primary treatment.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
OAR 340-053-0070(4)(a). Graywater itself is defined by footnote 4 reference to ORS and includes water from several sources including kitchen sinks and laundry. It appears that per 0080(8), Graywater Limitations, non-garbage disposal kitchen sink graywater requires primary treatment to qualify as Tier I. graywater. Dishwasher, garbage disposal, and diaper laundry water cannot be managed in a graywater reuse system. This seems confusing as the definition of graywater includes subsets that cannot be managed by a graywater reuse system. It might help if the graywater definitions had each source explicitly listed along with conditions for Tiered eligibility.	41

44 **Comment Summary:** **Add a definition for stormwater facility; include the information that most**

green roofs are used for stormwater management purposes.

DEQ Response: A definition for stormwater management structure has been added to the proposed rules and includes swales, infiltration basins, UICs, and other structures designed to infiltrate stormwater into the ground. Language has been added to the rules clarifying that graywater may not discharge to stormwater management structures.

Original Comment	Commenter:
Add a definition for stormwater facility; include the information that most green roofs are used for stormwater management purposes.	46

45 **Comment Summary:** **A definition should be given for "graywater discharge point." This term has application to setback measurements.**

DEQ Response: The column heading in Table 2 where this term was used has been changed to provide clarification and now reads: "Point of graywater discharge to landscape for irrigation or edge of landscape pond."

Original Comment	Commenter:
Where is the term "oxidized" defined? A definition should be given for "graywater discharge point." This term has application to setback measurements.	41

General requirements

Responsibility to comply OAR 340-053-0080(1)

46 **Comment Summary:** **Where are the penalties for non-conformance with these rules specified?**

DEQ Response: The penalties for non-compliance with any water quality permit are described in OAR Chapter 340, Division 12, Enforcement Procedure and Civil Penalties.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
OAR 340-053-0080(12) What are the penalties for not operating by plan or otherwise causing a nuisance?	41
Finally, where are the penalties for non-conformance with these rules specified?	41

47 **Comment Summary:** **The rules do not include a mechanism for reporting a graywater system that is not in compliance with the rules. DEQ should describe a process to report nuisance systems. Without a clear mechanism, DEQ's enforcement responsibilities may result in local agencies spending resources to handle complaints.**

DEQ Response: As with other DEQ water quality programs, reports of noncompliance or complaints should be directed to the appropriate DEQ regional office. However, DEQ recognizes that complaints are often misdirected to other agencies or organizations. Establishing a DEQ complaint procedure is beyond the scope of this rulemaking.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
The rules do not include a mechanism for reporting a graywater system that is not in compliance with the rules. DEQ should describe a process to report nuisance systems.	46

a. Without a clean mechanism, DEQ's enforcement responsibilities may result in local agencies … spending resource to handle complaints.

General requirements

Permit required OAR 340-053-0080(2)

48 **Comment Summary:** **The rule should require that property owners record the installation and use of graywater systems on a property deed, to ensure proper notification of future property owners.**

DEQ Response: DEQ solicited a legal opinion from the Oregon Department of Justice (DOJ) regarding the recording of graywater reuse and disposal systems on a property deed. It was the opinion of the DOJ that the EQC does not have authority to adopt rules requiring counties to record general information about real property in its records, which would include the presence of a graywater reuse and disposal system. However, under ORS 105.464, extensive disclosure forms are required for residential property transactions, including information about onsite systems. A graywater reuse and disposal system is considered a type of onsite system and would need to be disclosed on this form. In addition, permitted graywater reuse and disposal systems will be recorded in DEQ's permit database, which is publically available through the DEQ website.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Require a graywater system be added to a deed of trust that same way an easement is. It is just silly to declare that an owner must notify the next owner when there is NO legal way to ensure it. With all the foreclosures and short sales- most owners of a home may not even know who the next owner is or be long gone by the time the property is sold. The new owners could easily risk their health, their kids health or their pets health by using a hose or contaminated system component used for reuse of graywater. This is a HUGE liability waiting to happen. If left as is in the wording- this will end up in court…it is just a matter of time.	23
340-053-0080 (2) and 340-053-0110 (1) a, b and (2) Cities and Counties need to be allowed to inventory and track graywater systems which are in use within their jurisdiction. Persons should be required to notify DEQ about property ownership changes and DEQ should, in turn, notify the local jurisdiction of the change in ownership. DEQ may want to evaluate the use of recording the information on a property deed or some other method to insure that property owners and local jurisdictions are aware of existing Graywater systems.	38
The rule should require that property owners record the installation and use of graywater systems on a property deed, to ensure proper notification of future property owner[s].	46

49 **Comment Summary:** **Why make graywater use permit based? A better approach is to propose a use plan, and have it reviewed and approved with a one-time permit, not an on-going permit.**

DEQ Response: ORS 454.610 (1) states: "[a] person may not construct, install, or operate a graywater reuse and disposal system without first obtaining a permit from the Department of Environmental Quality." Because a permit is required to operate a graywater reuse and disposal system, DEQ will issue an on-going operational permit as opposed to a one-time construction-installation type permit.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Why make gray water use permit based. I think a better line of thinking is to propose a use plan, have it reviewed and approved, it should cost more than 50 -100 bucks. Make it a one-time fee, not an ongoing permit procurement process. If the concept is safe, why make it cost money. Sounds like a revenue making venture for government. If you want people to buy into it , it needs to be doable for the average Oregonian. When it costs money ad infinitum (and dang it, you already paid for the darn water) you'll only get the hard-core greenies with money to do it.	4

General requirements

Beneficial purpose OAR 340-053-0080(3)

35 **Comment Summary:** **Graywater systems should not be allowed in areas that already have a reclaimed water system for outdoor and other beneficial uses.**

DEQ Response: Graywater reuse and disposal systems may be limited in areas that fail to meet the site criteria in OAR 340-053-0090(1)(e) or if public health or environmental impacts would be likely, such as in groundwater management area. The proposed rules include conditions necessary to protect public health and the environment. If graywater is offsetting the demand for a potable water source, appropriate conditions are followed to protect public health and environmental, and no other restrictions apply, it is unclear why graywater should be restricted from use in areas that may also use a reclaimed (recycled) water system for outdoor or other beneficial uses.

No changes were made to the proposed rule in response to this comment.

Original Comment	Commenter:
Graywater systems should not be allowed in areas that already have a reclaimed water system for outdoor and other beneficial uses.	46

51 **Comment Summary:** **Redefine beneficial use to include improved purification of graywater through graywater reuse and disposal systems, and recharge of underlying aquifers.**

DEQ Response: Aquifer recharge was not included as a beneficial purpose because treated graywater would have to meet drinking water standards to prevent adverse effects on groundwater quality. However, OAR 340-053-0090(1)(a)(B) allows a person to request the use of an alternate beneficial purpose under a Tier 3 individual permit.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Redefine Beneficial Use to include improved purification of graywater (relative to current practices of septic systems or sewers) through graywater reuse and dispersal systems, and recharge of underlying aquifers.	47

93 **Comment Summary:** **Home gardeners, particularly organic gardeners, who produce food for personal consumption, often use manure as fertilizer in our vegetable beds. It makes no sense to limit what parts of vegetables can be in contact with**

graywater when we're using manure on vegetables. We always wash our produce before eating--either raw or cooked. Restricting the use of graywater on commercially produced foods is reasonable, but should be removed for home gardeners.

DEQ Response: The restricted use of graywater on edible food crops as described in the proposed rules was a recommendation from the DEQ Graywater Advisory Committee. Although objective scientific studies on the use of graywater on edible food crops are limited, numerous studies have shown that graywater may contain pathogenic organisms, such as bacteria and viruses, that could cause human disease. The committee's recommendation attempted to balance the public health risks of using graywater on edible crops and the need for alternate water sources. The use of graywater on edible crops in the proposed rules is more permissive than allowed in most other states, which generally limit graywater irrigation to fruit and nut trees provided the fruit and nuts are not harvested off the ground.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Tier 2 is also an issue, especially because how much decontamination do need on water that is going to ground that is being fertilized with manure and already has a fecal [coliform] count that is pretty high…it seems rather like overkill. I can see some concern for sprinkling systems, but as the previous guy mentioned, it's an issue of how little do you want to wash your vegetables before you eat them—a common practice in my house for as long as I can remember. You don't assume that your vegetables are clean.	17
We, who garden at home for personal consumption, and especially the many of us who are doing organic gardening. often include manure as part of our fertilization of our vegetable beds. Therefore, it makes no sense to limit what parts of vegetables can be in contact with graywater. We always wash our produce before eating...either raw or cooked. I very much want those limitations removed for home gardeners....not for commercially produced food.	21

General requirements

Connection to a wastewater disposal system

OAR 340-053-0080(5)

52 **Comment Summary:** **A number of commenters asked DEQ to remove the requirement that a graywater reuse and disposal system must be connected to an approved sewerage system or an approved and functioning onsite wastewater disposal system.**

DEQ Response: DEQ and the DEQ Graywater Advisory Committee reviewed rules, regulations, and guidelines from other states and countries. None of the jurisdictions reviewed allow for the installation of graywater reuse systems without a connection to a disposal system. DEQ believes that a wastewater connection is necessary to protect both public health and the environment. First, household wastewaters that are not defined as graywater must be diverted to a wastewater disposal system. Wastewaters that require disposal include toilet wastes and the wastewaters identified in OAR 340-053-0080(8). Second, a connection to a wastewater disposal system provides a backup option when graywater reuse is not possible, such as when the ground is saturated, groundwater is shallow, soils are inadequate to treat graywater, or when the graywater reuse system is being repaired. A number of commenters also noted the need for the wastewater connection, such

as: "...a backup in case something goes wrong and they need to dispose of that water." Off-the-grid type systems require "...careful practices around toxic materials handling...." Wastewater connections may be needed "...in some soils, when there is occasional blackwater involved, and in circumstances where a building has wide ranges in flow."

OAR 340-053-0080(5) does provide some flexibility on this issue: "Unless authorized by the department in a permit issued under OAR 340-053-0110(2) or OAR 340-071-0162, a person may not construct, install, or operate a graywater reuse and disposal system unless the system is connected to an approved sewerage system or an approved and functioning onsite wastewater treatment system." The proposed rule allows a graywater reuse and disposal system to not be connected to a traditional wastewater treatment system if authorized by the department under an individual Tier 3 graywater permit or an individual WPCF onsite permit. The rule creates opportunities for innovation in graywater system design and allows for the installation of demonstration projects, but requires the approval of both the local jurisdiction and DEQ. This approach provides flexibility, while protecting public health and the environment.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
3) graywater systems must be connected to a septic or sewer system - this requirement makes no sense because the proper irrigation/re-use of gray water is a better system than the leach field of a septic system.	10
There's a requirements for a connection to sewer and water. Our homes are designed to be net-zero and there's an incentive to live within your water budget. We're also going to be having both yellow water and black water utilization, so we're not going to use the sewage. So, we'd like to see an opportunity for buildings that are built to the Living Building Challenge to be allowed to be disconnected—to not have a connection for sewage and for water.	14
It's a big omission if we don't allow off-the-grid systems a place in our rules. Again people are trying to live more sustainably. Septic systems fail; they're a huge expense to put it; and if people aren't going to use them and really want to use composting toilets and graywater systems—again that could change at ownership and somebody could put it a septic system if they want to. Joshua had a good idea about how to do that. But to prohibit people from applying sustainable practices, well time-honored sustainable practices because of the fear of what happen at sometime in the future is a big disservice we will be doing and it will absolutely result in more unpermitted systems because people are going to do these things and they will probably do them less well and less mindfully if they're trying to avoid the law rather than comply with it. And so, again, I advocate for some opportunity for off-the-grid systems that don't have to be connected to a sewer or to a septic tank.	15
Stand-alone graywater + composting toilets Thirdly, element 340-053-0080(5), which requires graywater systems to be connected to a sewer or septic system, eliminates a key incentive to truly sustainable houses and land-use. Both sewers and septic systems have grave limitations from the perspective of water resource protection, as you well know. Moreover, they are expensive to build and maintain. Well functioning graywater systems, combined with composting toilets and careful practices around toxic materials handling, offer the opportunity for vastly improved "net zero" water recycling sites at an affordable price. Such systems can and do exist already, and keeping them affordable is crucial to their widespread accessibility and adoption.	15

This element requires users to maintain sewer and/or septic connections, even if they're completely superfluous. This is true even if you maintain the previous "evapotranspiration" rule: much of the state never has (liquid) precipitation exceed evapotranspiration year-round. And it is well known that many of the septic systems and municipal sewer systems in the state are polluting in various ways: adding more water to them is often likely to cause more damage than the most overcapacity or decrepit graywater system. Rather than squelching creative approaches to living lighter on the land, the DEQ should make a simple process by which people can seek permits for "off-the-grid" systems.	
My first comment is connected to the connection to graywater disposal, whether in the City with a sewer hook-up or in rural communities with a septic system. More specifically in rural communities in households in which they are going completely off-the-grid and they are using composting toilets, in combination with graywater without dishwashers. In that case, they're not actually needing to put anything into the septic system at all. In that case it appears that the septic system is mainly there as a backup, just in case at some point they decide not to do that. Unusually in these rural communities there's enough ground, water storage, and enough vegetation that can more than accommodate single-family residential or even multi-family residential, in terms of reuse of that water. In that case it's more of a backup in case something goes wrong and they need to dispose of that water. The other reason for the septic that I see is in case of property transfership. And in that case, you're burdening the current homeowner with the cost of a septic system in case some future owner decides not to use the installed graywater system. I think the economic burden of the septic system should be on the owners or homeowners that are going to be using that septic system. One of the concepts that is gaining ground … in British Columbia right now is something called "septic ready", in which there is a land conservation agreement or an easement (I'm not exactly sure what the specific language is), but it's land set aside for the use of a septic system on which there can be no above ground or below ground development in that area. So that way that land is permanently set aside for the installation of a septic system such that at any point in time if there's a complaint against the owner that they're not using the graywater system appropriately or it's undersized, misused, or they have to dispose of it , then they can be incurred with the fee of installing that septic. Or, if there's a transfer of owner and the new owner doesn't want to use the new system, then they will be responsible for the installation and they can be assured there is the possibility of installing that septic. Couple of things to protect the transfer of ownership: There is the seasonal testing, so if there is a transfer of owner who is not as familiar with a graywater system, there is that seasonal/annual testing there and that would be a check to make sure they are using it appropriately. And then as a result of that testing, you could do a determination if they need to install a septic or not. The other kind of protection against that is upon transfer of ownership it is already kind of within the current rules that new owners have to be made aware of the graywater system and its best management practices. It's at that point at which they are made aware of it that it's logical to make that decision if they want to agree to continue using that graywater or to incur the cost of the septic. So generally the idea is to make it as easy as possible to install a septic in case something goes wrong, but not necessarily incurring an economic burden on the current owner who is planning...has alternate methods to deal with their graywater and blackwater.	16
Four - Create space for innovative systems which are not connected in any way to a sewage system (a home using a composting toilet for example). Hence the reason for number three.	20
SYSTEM DUPLICATION - (340-053-0080(5) requires graywater systems to be connected to a sewer or septic system. This is redundant, and requires the excess cost and construction of duplicate treatment systems. It prevents truly sustainable houses and land-use by making them illegal or making them so expensive that graywater use is only available to the wealthy. Graywater/compost toilet only systems DO work, and there seems to be no reason why these systems should be prohibited or made extremely expensive and cumbersome to permit. Rather than making creative approaches to living lighter on the land complicated and unaffordable, DEQ should develop a simple process by which people can seek permits for "off-the-grid" systems.	34

Lastly, I believe that greywater systems should not be required to be connected to septic or sewer systems. Whether or not a greywater system is connected to sewer or septic should be based on system design, for in some cases this will make sense but in others it will be an unnecessary expense. This will especially be the case if a rural homeowner chooses to install a composting toilet and greywater system. Requiring an additional septic installation would create greater expense and environmental impact to the property. Further as the population increases increasing the number of homes and businesses that are not relying on the sewer system will reduce the overall demand on the "public" infrastructure.	35
Graywater systems should not HAVE to be connected to a septic or sewer system. Graywater should be a connection only when the system already exists, in some soils, when there is occasional blackwater involved, and in circumstances where a building has wide ranges in flow. When these are not the case, a graywater system should be allowed as a service to the earth and humanity. It can allow in some cases for settlement and water sanitation on the cheap. This is a good thing.	36
The requirement that graywater systems be connected to a sewer or septic system does not allow households striving for net zero water use to lead the way in what will likely become standard practice in coming decades. The combination of a graywater system with composting toilets is popular. Experts designing buildings in the Cascadia Green Building Challenge are moving ahead in ways that will make the proposed rule obsolete very shortly. 340-053-0080(5)	42
Lastly, why require a graywater system to have a septic or sewer backup? Given the well documented issues with septic systems, sewer systems and CSO, it seems a very small, manageable potential problem is being avoided while contributing to a much larger, already problematic and more expensive problem. This requirement significantly reduces many of my options and does not improve the safety of the system.	43
Eliminate the requirement that graywater reuse and dispersal/disposal systems be connected to either a sewer system or an onsite septic system. If it is deemed necessary, specify that graywater reuse and dispersal/disposal systems not connected to sewer, onsite septic system, or other back-up system must be designed to handle all graywater generated onsite, all year round.	47

53 **Comment Summary:** **Assuming a residence must install a onsite septic system sized for both black and gray water flows, the occasional diversion of the graywater to irrigation should cause any reduction in the size of the on-site drain field or system.**

DEQ Response: The design and sizing of onsite wastewater treatment systems for combined household wastewater is described under OAR 340-071. These rules make no changes to the rules under Division 71.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
-0080 (5) assuming that the residence must install a onsite septic system for both black and gray water sized at the combined flows, and the occasional diversion of the gray to irrigation there should not be any reduction in the size of the on-site drain field or system. This will not be a savings to the home owner as most that have I talked to think that with a gray water system they will have a smaller black/gray water onsite septic system. I don't think most people realize that there will be no savings in the on-site septic installed for the dwelling. Just an added cost of a gray water occasional use system. They have the feeling like under the current on-site rules if they eliminate the black water they get a drain field reduction.	3

171 **Comment Summary:** **Reconsider the process and cost of seeking a waiver to the requirement to connect to a wastewater disposal system.**

DEQ Response: The proposed rules require a graywater reuse and disposal system to be connected

to sanitary sewer or an approved and functioning onsite wastewater treatment system unless authorized by a Tier 3 graywater permit or an individual WPCF onsite permit. These types of permits require significant DEQ time and effort to issue and ensure compliance. The fees for a Tier 3 permit are the same for a WPCF individual onsite permit and are commensurate with the level of DEQ effort required for these types of permits.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Reconsider the process and cost of seeking waiver of connection requirements, if you feel you must retain them.	47

General requirements

Surface and stormwater discharges prohibited OAR 340-053-0080(6)

54 **Comment Summary:** **Clarify that offsite disposal to jurisdictional UIC systems is prohibited [0080(6) & 0090(1)(c)(A)].**

DEQ Response: The language in OAR 340-053-0080(6) has been updated to clarify that graywater discharge to stormwater management structures, which include UIC systems, is prohibited.

Original Comment	Commenter:
Clarify that offsite disposal to jurisdictional UIC systems is prohibited [0080(6) & 0090(1)(c)(A)]. Also please use "minimum separation distance" language from seasonal high groundwater for consistency.	46

General requirements

Groundwater protection OAR 340-053-0080(7)

56 **Comment Summary:** **While the rule requires water quality monitoring, it is infrequent. DEQ and local jurisdictions should have the ability to test graywater for contaminants from applicants using hazardous materials in the event of a water quality event, or for any other purpose. Under section 340-053-0080 – General Requirements for Graywater Reuse and Disposal Systems – please add: "The owner or operator of a graywater reuse and disposal system in a wellhead protection area established under OAR 340-040-0140 through 340-040-0210, that is part of a facility where hazardous materials are stored, handled, or processed, must provide designated sampling port(s) that can be used to collect samples of the graywater stream. The sampling port(s) must be appropriately labeled, and the owner must provide access to the sampling port(s) to representatives of the State or of the entity that established the wellhead protection area. The sampling port(s) must be outside of structures. A sampling port must be present on each pipe conveying graywater from a facility structure to the ground. The location of the sampling port(s) must be shown on a drawing of the graywater reuse and disposal system submitted with the application."**

DEQ Response: The proposed language in OAR 340-053-0080(8) allows additional conditions to be placed on graywater reuse and disposal systems located in sensitive groundwater areas; this would include any necessary monitoring and sampling

requirements. Explicit language such as that proposed is not necessary in the rule, as it could be included as needed in either general or individual permits issued for graywater reuse and disposal systems.

No changes were made to the proposed rule in response to this comment.

Original Comment	Commenter:
While the rule requires water quality monitoring, it is infrequent. DEQ and local jurisdiction should have the ability to test graywater for contaminants from applicants using hazardous materials in the event of a water quality event, or for any other purpose. a. Under section 340-053-0080 – General Requirements for Graywater Reuse and Disposal Systems – please add: "The owner or operator of a graywater reuse and disposal system in a wellhead protection area established under OAR 340-040-0140 through 340-040-0210, that is part of a facility where hazardous materials are stored, handled, or processed, must provide designated sampling port(s) that can be used to collect samples of the graywater stream. The sampling port(s) must be appropriately labeled, and the owner must provide access to the sampling port(s) to representatives of the State or of the entity that established the wellhead protection area. The sampling port(s) must be outside of structures. A sampling port must be present on each pipe conveying graywater from a facility structure to the ground. The location of the sampling port(s) must be shown on a drawing of the graywater reuse and disposal system submitted with the application."	46

57 **Comment Summary:** **Local jurisdictions responsible for groundwater protection or management should be included as a stakeholder and consulted prior to the public notice and permit issuance stage of the graywater permitting process.**

...

b. The rule states that DEQ may have additional requirements in a groundwater protection or groundwater management areas. The local jurisdiction should be consulted on permits within these areas since the local jurisdiction may be the most familiar with the groundwater resource and potential impacts, especially in a state approved wellhead protection area where the local jurisdiction has an established program to protect the resource.

...

d. The City suggests the following language be added to section 340-053-0080 (7) Groundwater protection: "…the department, in consultation with the local jurisdiction, may require additional conditions to be met. The Department, in consultation with the local jurisdiction, will determine the most appropriate permit conditions to most effectively protect groundwater within the designated groundwater protection or management area."

e. 340-053-0110(1)(c) Specific geographic area graywater reuse and disposal system WPCF general permit should be developed in conjunction with the local jurisdiction.

f. Under section 340-053-0110 (2) Tier 3 graywater reuse and disposal system WPCF individual permit, please add: (d) "The department will review the information listed in subsection (3)(b) of this rule and determine permit conditions necessary to protect public health and the environment. When the graywater use is within a designated groundwater management area, a wellhead protection area or geographic region identified in an area wide aquifer management plan, the department, in consultation with the local jurisdiction(s) within which the Groundwater Management Area or

Wellhead Protection Area lie, will determine the most appropriate permit conditions to most effectively protect groundwater within the designated groundwater protection or management area."

DEQ Response: Local jurisdictions are stakeholders in the permitting process and may participate during the issuing of graywater permits as described under OAR 340-045-0027. It would be impractical to individually confer with all stakeholders prior to public notice on state-wide general permits. However, in a Internal Management Directive that will be developed for the graywater permitting program, DEQ staff will be directed to confer with local jurisdictions when developing geographic general permits or individual permits for graywater reuse and disposal systems located in sensitive groundwater areas.

No comments were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Local jurisdictions responsible for groundwater protection or management should be included as a stakeholder and consulted prior to the public notice and permit issuance stage of the graywater permitting process. a. The City of Portland has a state certified groundwater protection area (the Columbia South Shore Well Field Wellhead Protection Area) and is concerned about potential groundwater impacts from graywater, especially with Tier 2 and Tier 3 permits. b. The rule states that DEQ may have additional requirements in a groundwater protection or groundwater management areas. The local jurisdiction should be consulted on permits within these areas since the local jurisdiction may be the most familiar with the groundwater resource and potential impacts, especially in a state approved wellhead protection area where the local jurisdiction has an established program to protect the resource. c. The City appreciates that DEQ will not authorize a graywater reuse and disposal system unless the groundwater quality protection requirements in OAR 340-40 are met. However, other than the general groundwater protection policy statements in OAR 340-040-0020, those rules primarily address mitigation following a release, rather than prevention and protection, and are vague about specific tools available to prevent groundwater contamination. d. The City suggests the following language be added to section 340-053-0080 (7) Groundwater protection: "…the department, in consultation with the local jurisdiction, may require additional conditions to be met. The Department, in consultation with the local jurisdiction, will determine the most appropriate permit conditions to most effectively protect groundwater within the designated groundwater protection or management area." e. 340-053-0110(1)(c) Specific geographic area graywater reuse and disposal system WPCF general permit should be developed in conjunction with the local jurisdiction. f. Under section 340-053-0110 (2) Tier 3 graywater reuse and disposal system WPCF individual permit, please add: (d) "The department will review the information listed in subsection (3)(b) of this rule and determine permit conditions necessary to protect public health and the environment. When the graywater use is within a designated groundwater management area, a wellhead protection area or geographic region identified in an area wide aquifer management plan, the department, in consultation with the local jurisdiction(s) within which the Groundwater Management Area or Wellhead Protection Area lie, will determine the most appropriate permit conditions to most effectively protect groundwater within the designated groundwater protection or management area."	46

58 **Comment Summary: The City of Portland has a state-certified groundwater protection area (the Columbia South Shore Well Field Wellhead Protection Area) and is concerned about potential groundwater impacts from graywater, especially with Tier 2 and Tier 3 permits.**

DEQ Response: DEQ believes the proposed rules are adequate to protect groundwater. First, OAR

340-053-0080(7) allows DEQ to include additional conditions for graywater systems located in sensitive groundwater areas. Second, the permitting approach outlined in the proposed rules allows DEQ to develop a Tier 2-type general permit for specific geographic areas that would include different, and potentially more stringent, requirements. Finally, DEQ has authority to include more stringent conditions in Tier 3 permits issued in the Columbia South Shore Well Field Wellhead Protection Area. A graywater Internal Management Directive (IMD) that will be developed for the new graywater program will direct permit writers to confer with local jurisdictions for individual permits located in sensitive groundwater areas.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Local jurisdictions responsible for groundwater protection or management should be included as a stakeholder and consulted prior to the public notice and permit issuance stage of the graywater permitting process. a. The City of Portland has a state certified groundwater protection area (the Columbia South Shore Well Field Wellhead Protection Area) and is concerned about potential groundwater impacts from graywater, especially with Tier 2 and Tier 3 permits. b. The rule states that DEQ may have additional requirements in a groundwater protection or groundwater management areas. The local jurisdiction should be consulted on permits within these areas since the local jurisdiction may be the most familiar with the groundwater resource and potential impacts, especially in a state approved wellhead protection area where the local jurisdiction has an established program to protect the resource. c. The City appreciates that DEQ will not authorize a graywater reuse and disposal system unless the groundwater quality protection requirements in OAR 340-40 are met. However, other than the general groundwater protection policy statements in OAR 340-040-0020, those rules primarily address mitigation following a release, rather than prevention and protection, and are vague about specific tools available to prevent groundwater contamination. d. The City suggests the following language be added to section 340-053-0080 (7) Groundwater protection: "…the department, in consultation with the local jurisdiction, may require additional conditions to be met. The Department, in consultation with the local jurisdiction, will determine the most appropriate permit conditions to most effectively protect groundwater within the designated groundwater protection or management area." e. 340-053-0110(1)(c) Specific geographic area graywater reuse and disposal system WPCF general permit should be developed in conjunction with the local jurisdiction. f. Under section 340-053-0110 (2) Tier 3 graywater reuse and disposal system WPCF individual permit, please add: (d) "The department will review the information listed in subsection (3)(b) of this rule and determine permit conditions necessary to protect public health and the environment. When the graywater use is within a designated groundwater management area, a wellhead protection area or geographic region identified in an area wide aquifer management plan, the department, in consultation with the local jurisdiction(s) within which the Groundwater Management Area or Wellhead Protection Area lie, will determine the most appropriate permit conditions to most effectively protect groundwater within the designated groundwater protection or management area."	46

59 **Comment Summary:** **The City appreciates that DEQ will not authorize a graywater reuse and disposal system unless the groundwater quality protection requirements in OAR 340-40 are met. However, other than the general groundwater protection policy statements in OAR 340-040-0020, those rules primarily address mitigation following a release, rather than prevention and protection, and are vague about specific tools available to prevent groundwater contamination.**

DEQ Response: OAR 340-040-0020 establishes a groundwater anti-degradation policy and specifies that groundwater will be protected from pollution that would impair existing or potential beneficial uses. In addition, it establishes minimum numeric standards for groundwater quality based on the Safe Drinking Water Act (SDWA). The proposed graywater rules recognize the importance of groundwater and include requirements designed to protect groundwater resources as directed by Division 40. Additional area-wide or site-specific groundwater protection tools can be addressed through a geographic area WPCF general permit or individual WPCF permit.

Changes to the rules in Division 40 are beyond the scope of this rulemaking.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Local jurisdictions responsible for groundwater protection or management should be included as a stakeholder and consulted prior to the public notice and permit issuance stage of the graywater permitting process. a. The City of Portland has a state certified groundwater protection area (the Columbia South Shore Well Field Wellhead Protection Area) and is concerned about potential groundwater impacts from graywater, especially with Tier 2 and Tier 3 permits. b. The rule states that DEQ may have additional requirements in a groundwater protection or groundwater management areas. The local jurisdiction should be consulted on permits within these areas since the local jurisdiction may be the most familiar with the groundwater resource and potential impacts, especially in a state approved wellhead protection area where the local jurisdiction has an established program to protect the resource. c. The City appreciates that DEQ will not authorize a graywater reuse and disposal system unless the groundwater quality protection requirements in OAR 340-40 are met. However, other than the general groundwater protection policy statements in OAR 340-040-0020, those rules primarily address mitigation following a release, rather than prevention and protection, and are vague about specific tools available to prevent groundwater contamination. d. The City suggests the following language be added to section 340-053-0080 (7) Groundwater protection: "…the department, in consultation with the local jurisdiction, may require additional conditions to be met. The Department, in consultation with the local jurisdiction, will determine the most appropriate permit conditions to most effectively protect groundwater within the designated groundwater protection or management area." e. 340-053-0110(1)(c) Specific geographic area graywater reuse and disposal system WPCF general permit should be developed in conjunction with the local jurisdiction. f. Under section 340-053-0110 (2) Tier 3 graywater reuse and disposal system WPCF individual permit, please add: (d) "The department will review the information listed in subsection (3)(b) of this rule and determine permit conditions necessary to protect public health and the environment. When the graywater use is within a designated groundwater management area, a wellhead protection area or geographic region identified in an area wide aquifer management plan, the department, in consultation with the local jurisdiction(s) within which the Groundwater Management Area or Wellhead Protection Area lie, will determine the most appropriate permit conditions to most effectively protect groundwater within the designated groundwater protection or management area."	46

104 **Comment Summary:** **A number of commenters requested changes to the proposed rules that would allow graywater to be released to the environment to recharge groundwater. Commenters supported the request by noting the ability of soils to naturally clean and filter wastewater, suggesting this practice would reduce demands on existing stormwater and wastewater infrastructure, and citing examples of existing graywater systems that currently engage in this practice.**

DEQ Response: Groundwater recharge is not identified as a beneficial reuse of graywater under the proposed rules specifically to protect Oregon's groundwater resources. OAR 340-053-0080(7) states that DEQ will not authorize a graywater reuse and disposal system for use unless the groundwater protection requirements in OAR 340-040 are met. Other sections of the proposed rules require owners or operators of graywater reuse and disposal systems to design and operate their systems in a manner that protects groundwater, including limiting graywater irrigation to times when plants require supplement water and requiring landscape ponds to be lined.

Groundwater recharge projects are subject to Oregon's groundwater statutes and administrative rules, which would require a minimum treatment standard equivalent to drinking water standards. DEQ agrees that some soils have the capability to treat wastewater to high quality standards, but also recognizes treatment capabilities are very site specific and depend on a number of factors, some of which include graywater quality, soil type, geographic location, climate, season, vegetation and groundwater hydrology. Evaluating the effectiveness of soil treatment systems to treat wastewater to drinking water standards or better for groundwater recharge would require significant effort on the part of the property owner and DEQ, both in designing a system and monitoring performance.

DEQ conferred with local jurisdictions represented on the DEQ Graywater Advisory Committee on the perceived benefit to stormwater and wastewater infrastructure if groundwater recharge were allowed. None of the represented bodies, which included the City of Portland, the League of Oregon Cities, and the Oregon Association of Clean Water Agencies, believed that using graywater for groundwater recharge would lessen the burden on existing infrastructure. Other comments submitted on the proposed rules suggest that some water providers are concerned that proposed rules are not stringent enough to protect groundwater, particularly in sensitive groundwater areas. Although some existing graywater users in Oregon may be currently releasing graywater to the environment with the intent of recharging groundwater, DEQ is not aware that the performance of these system to treat graywater and the resulting impacts on groundwater have been evaluated. The presence of these systems is not sufficient justification to expand an activity that risks adverse impacts to a resource that many Oregonians rely on as a sole drinking water source.

However, the proposed rules do not strictly preclude using graywater for groundwater recharge. OAR 340-053-0090(1)(a)(B) allows a person to request an alternative beneficial purpose under an individual Tier 3 permit. Under an individual permit, DEQ may evaluate the proposal and allow groundwater recharge with conditions necessary to protect groundwater.

No changes were made to the proposed rule in response to these comments.

Original Comment	Commenter:
2) graywater cannot be discharged at rates in excess to plants' evapotranspiration - this also does not have justification because many plants are able to properly filter pollutants through their roots and allow safe water to percolate down for groundwater recharge which may be desirable in some areas.	10

Groundwater recharge 15

Next, the rules unnecessarily limit graywater reuse by restricting graywater reuse to those times when “evapotranspiration rates exceed natural precipitation” at 340-053-090(e)(E). This is confusing and cumbersome, to start with: how exactly would permit-holders assess when they're meeting this stipulation? More importantly, it outright prohibits one of the most important potential benefits of greywater: contributing to soil water storage. If all the water placed in the soil is immediately used up by the plants' evapotranspiration, how can the water held in the soil replenish?

This requirement is apparently intended to reduce the possibility of groundwater or surface water contamination with graywater. However, it is completely unnecessary as other regulations already prevent discharging graywater into saturated soils, prohibit ponding or surface runoff, and require graywater systems to be more than 4 feet above groundwater levels. These requirements are much easier to assess than evapotranspiration rates vs. natural precipitation. Moreover, they allow appropriately designed and maintained systems to operate throughout the winter in western Oregon, with a large number of benefits.

This is especially important in our heavily paved and built cities, where we are losing so much water that would otherwise slowly percolate into the ground. In other words, almost all land in our cities is currently absorbing much less water than historically, because of runoff. This undermines groundwater recharge and thus summer water levels in streams, limiting our resilience to summer drought and endangering aquatic species.

Groundwater recharge is explicitly identified as one of the beneficial uses of graywater outlined by Art Ludwig in his standard reference work, Creating an Oasis with Greywater. Ludwig writes, “Graywater application in excess of plant needs recharges the natural store of water in the ground. Abundant groundwater keeps springs flowing and trees growing in intervals between rains.” (p.3) Discharging graywater into mulch basins and swales designed for water infiltration into soil provides an excellent treatment for the graywater. Ludwig notes: “[i]f I had to improve the world's handling of graywater in just two words, they would be mulch basin. . . the simple method of covering and containing graywater in mulch basins assures a spectacularly high level of treatment.” (p.47)

Again, this is a place where the rules deviate from what is already standard practice among graywater users, and there is no reason to include a rather unenforceable and counterproductive requirement. Please remove (E) in order to better protect soil and water resources.

The second that I just don’t like at all is [the section] that talks about evapotranspiration. 15

First, as many people have noted it's a difficult thing to assess or use, but more than that, it seems to be an unnecessary restriction on graywater use. And, as I understand it and as [DEQ] explained, it's there to protect water from contaminating groundwater, graywater from contaminating groundwater or running off because the ground is saturated. And both of those things are already in the best management practices; there are prohibitions that keep graywater from being within 4' of the groundwater; there are prohibitions that keep graywater from running off or ponding. And so, to have an additional prohibition that is confusing and unnecessarily seasonally limiting, doesn't seem to meet any need that is already being met by the existing prohibitions. It could be put in guidances. But, also, I think it's really important to note that very well established graywater practices are focused on soil water storage, and not on irrigation. Things like creating swales, and mulch basins, and things that help capture the water, and let it slowly absorb into the soil, so we're holding more water in our soil, because right now we're kind of in a soil water crisis where because so much water that would be going into our soil is going into the stormwater systems or the sewers or drains. And so, to be able to be able to allow us to use graywater for soil water storage and not just for irrigation when plants need it, I think, is an opportunity that the committee really missed. And, I talked about this a number of times, and I never heard a reason [why] we should be prohibiting it except to protect groundwater, and I think the rules do that. So, I strongly advocate to remove that limitation on the evapotraspirative needs of plants and recognize that

soil water storage is a beneficial use, and there are very long-established graywater experts that say that is one of the most important uses of graywater and it should be allowed by our rules.	
-340-053-0090 (1)(e)(F) The soil and vegetation in the irrigation area must have capacity to accommodate the volume and rate of graywater applied without discharging to surface water or groundwater. why? This is what the onsite sewage treatment rules are predicated on. Reuse of a valuable resource- groundwater recharge may not be the principal reason for using greywater but the pollutants present in greywater would be removed by the soil as it travels to groundwater.	24
GROUND-WATER RECHARGE – By requiring evapotranspiration rates to exceed natural precipitation, (340-053-090(e)(E) is a confusing limitation. Most people have no clue of how to measure the evapotranspiration of their plants. How can this be enforced? And it is not needed, as other regulations effectively prevent discharging graywater into saturated soils and prohibiting ponding or surface runoff. This rule prevents an important beneficial use of graywater – contributing to soil water storage. If all the water placed in the soil is immediately used up by the plants' evapotranspiration, how can the water held in the soil be replenished? I would request elimination of (E).	34
Secondly, I would like to see maximum discharge rates changed to allow groundwater recharge. A well designed system will provide biological treatment of the greywater so that it will not be a health or sanitary hazard if the treated water is allowed to recharge the ground water. As an intensive kitchen gardener I know that it is possible to reduce Oregon's summer water needs by recharging the local ground water during Oregon's winters or with greywater.	35
Graywater should be able to be discharged at rates in excess of evapo-transpiration. Most treatment occurs within the soil profile through the activities of microorganisms that live in association with plants in the living soil horizon. Greywater is also an important return system for Oregon's groundwater and should be allowed to re-cycle into the water table.	36
How does DEQ propose that the following requirements from 340-053-0900, (1), (e), are realized? (E) Irrigation may occur only when evapotranspiration rates exceed natural precipitation. (F) The soil and vegetation in the irrigation area must have capacity to accommodate the volume and rate of graywater applied without discharging to surface water or groundwater. Besides being impractical to implement and monitor, these statements presuppose that it is somehow possible and desirable to ensure that no treated graywater recharge the groundwater. We suggest that you leave it at the Tier 1 requirement of “not surface, pond, or runoff” and remove the impractical “evapotranspiration rates” and groundwater discharge requirements. For Tiers 2 and 3 they are also unnecessary since with 10/10 mg/L you have already required much higher treatment than municipal wastewater treatment plants (and you are dealing with much less disruptive distributed systems) and you have monitoring.	39
That 340-053-090(e)(E) be altered so that graywater application can take place even when "evapotranspiration rates exceed natural precipitation" as this is a healthy way to recharge groundwater.	42
The idea of only being able to discharge graywater that is not in excess of the evapotranspiration rate on site goes against a cycle of nature that created our healthy soils and healthy aquifers - namely groundwater recharge. It is my understanding that graywater use will be based on a complaint based process, so if there are no complaints there won't be much oversight in respect to the amount of water that is discharged. It could nevertheless be helpful in the future if language were inserted to allow for groundwater recharge, especially when the water table is sufficiently deep. Also, shouldn't there be a different allowance for those who collect rainwater on-site, as that is water that would have reached the ground anyway and instead is collected, used, and released at a more even rate? Having some of these ideas in place will be of great use, as graywater use will continue to gain popularity, some systems will fail, and complaints will start to surface. Of course these issues are too complex to address in a letter; and perhaps too complex to address entirely with one code. Ultimately a certain body will have to review and permit alternative technologies and progressive systems	44

that can lower the burden on our city's infrastructure, and lower our burden on the ecosystem. Often times it is the case with code that there is a prescriptive path, and anything else is inordinately expensive. This is unfortunate as it does not provide incentive for those who want to improve our current methods - and have the time and energy to develop them. As a builders immersed in the Living Building Challenge we have learned there are many natural systems that can be
employed brilliantly to deal with rainwater, graywater, and blackwater. It would be a shame to not be able to capitalize on these opportunities due to a code that is too rigid or a costly appellate process.

In Section 340-053-0090 (1)(e)(E) I think it is unnecessarily limiting to only allow greywater to be applied when precipitation is less than evapotranspiration. Greywater natural groundwater recharge is an efficient and effective function that should be allowed for in these rules.	45
Eliminate the restriction of graywater use to the "irrigation season". Allow year-round use of graywater reuse and dispersal systems.	47

General requirements

Graywater limitations

OAR 340-053-0080(8)

60 **Comment Summary:** **A number of commenters asked that the rules allow the reuse of wastewater from dishwashers and garbage disposals in graywater reuse and disposal systems with proper screening and treatment.**

DEQ Response: ORS 454.605(12) collectively defines "kitchen wastes" as "sewage." ORS 454.605(7)(a) specifically identifies kitchen sink wastewater as graywater, but does not include any other sources of kitchen wastes under the definition, which leaves all other sources under the definition of sewage. Since ORS 454.605(7) does not include wastewater from dishwashers or garbage disposals in the definition of graywater, these sources are not eligible for reuse under the proposed rules and must be treated as sewage.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
340-053-0080, section 8 b • Current ruling: Currently, it states that wastewater from dishwater cannot be added to graywater. (see citation below) • Argument: Although garbage disposals would be eliminated (using food scraps for composting) in a Living Building Challenge (LBC 2.0) home, dishwashing machines would be needed, as they are highly water efficient and thus necessary to use when designing buildings that live with their own energy and water budget. This ruling excludes the use of these. If the concern is that detergents used are toxic, it is far easier to address this directly, by prohibiting such toxic automatic dishwashing machine detergents, than by outlawing the use of such equipment. Although many automatic dishwashing detergents are considered toxic (due to their highly concentrated form) and non biodegradable, there are others detergents available that are considered non toxic* and biodegradable, such as detergents qualifying to the Green Seal GS-37 criteria. Note: Nearly everything is toxic at an excessive concentration-even chemicals within mother's milk. Toxicity levels need to be first determined by analyzing the concentration of chemicals that would build up in the soils from gray water over 6 months, a small part of which would be water from the dishwasher, and work backwards from there to get a good idea of what chemicals and concentrations would be toxic. • Request: Eliminate the exception the excludes waste water from dishwashers and instead require non toxic, biodegradable detergents that meet the criteria specified in Green	14

Seal GS-37 or equivalent standards.	
The third aspect that needs to be considered is the dishwasher water that can't be considered graywater. That's going to be a big issue because actually dishwashers use less water than sink washing. And we have to live within a 10 gallons per person per day budget. We're going to be using a dishwasher on order to most effectively reuse—in fact in the dishwasher we're going to reuse your water quite a bit. That's a request for a Living Building Challenge building, to consider that request to use that as graywater.	14
In regards to use of the dishwasher, my understanding is that the main objections to not allowing dishwasher graywater into the graywater system is the use of the harsh detergents and it's mainly the borated soaps. Can it be required that only non-borated soaps be used in dishwashers? So that way the dishwasher graywater can be used in the graywater system. The other is temperature, in which case if that is a major issue, there can be a 24 hour storage tank where the flow of the water is dispersed within 24 hours, if temperature is an issue. I don't know if that can be written in as an exception, or be allowed as some sort of variance within the permit process.	16
As a similar issue there, there is a…as far as the Tier 2 issue dealing with the contaminants in the water versus the contaminants in the soil to which it's going. The borated soaps issue, I wondering about the assumption is possibly from the plumber that had made the comments and his concerns are very well taken [but] does not take into account that treatment systems can handle borated soaps and higher temperature. They can cool the water down. Someone mentioned a storage tank; that's a good way to do it—a simple way to do it if it has enough capacity to break up that heat and to dissipate it. Also just the simple amount of automation that can be built into a system to make sure it's not flowing hot water out into a garden, or something like that, or wherever it's going to be used. Automation is getting cheaper all the time as I noted with the solar system. What used to be science fair projects 30 years ago got to be common-place for solar energy 20 years ago, or I should say more common 20 years ago, and is now common-place. Price-attrition has gone and made solar system incredibly affordable, and I expect the same will happen with graywater systems.	17
Three - allow the water from dishwashers to be included with a proper screening and treatment solution involved.	20
Finally, I think that while there's obviously a difficulty here because of the lack of scientific research as far as the necessity of how strict these codes need to be, I want to…where the rules have come down I think is in the wrong spot. The rules don't even allow for the reuse, unless it goes through primary treatment, the rules don't allow for the reuse of garbage disposal waste; and, apparently that's deemed too dangerous. Yet we also have the extension service teaching people to compost kitchen wastes, obviously not through a disposal—excess food waste, by burying them in the ground—called trench composting. This is part of the education I received when I went through the master composting training. And if food wastes can be buried in the ground as part of a soil building exercise, I don't see why using kitchen waste in the ground is less appropriate than that—especially if it's done at times of the year when the hydrology is appropriate, which is not actually part of the training done in composting, which is done whenever and people really don't sweat it too much. So I think that—and these are practices that have been done agriculturally for a long time and generally we wouldn't be around if they were so unsafe. So overall while I think the intent of protecting public health is a good one, I think that the rules go far beyond what is necessary.	26
I think we ought to allow exceptions when you can prove that a dishwater or disposal is in your system that you're handling it properly. There should be a method for exceptions. I don't have a problem with saying it's the rule, but there's an exception possibility. Exceptions should be made for campgrounds and camp kitchens. I understand the sump, but sometimes I think it's better to have a graywater system. Why not irrigate it? Why not grow food? Why not grow plant? Rather than putting it into a sump system. Let's use this for something that actually has purpose versus just putting it into a hole and not doing anything with it.	28
Secondly, we would like to address the issue of dishwasher discharge. It is understandable	44

that there are concerns about classifying this water as graywater. Water temperature, harsh detergents, food particles, and bacteria do create a confluence of problems. But there are systems to deal with these problems. It seems like a much better idea to codify these systems than to exclude the re-use of dishwater altogether.

Allow use of water from dishwashers and from garbage disposals in graywater reuse and dispersal systems.	47

62 **Comment Summary:** **OAR 340-053-0080(8) The term "types of wastewater" is confusing terminology given specified "types of graywater" otherwise addressed. It seems it is the (d) activity wastes that lead to this. Alternatively, such activity wastes could be excluded from the definition of graywater. If the (a), (b), and (c) limitation were moved into the definitions and (d) listed an exclusion, this section might not be needed.**

DEQ Response: ORS 454.605 generally defines graywater by the point of origin. OAR 340-053-0080(8) provides additional clarification that some wastewaters that could originate from the fixtures identified in the statutory definition must be diverted to an appropriate wastewater collection or treatment system.

To improve clarity, the language in OAR 340-053-0080(8) has been modified to read: "A person must divert the following wastewaters to an approved wastewater collection system or approved wastewater disposal system: ...."

Original Comment	Commenter:
OAR 340-053-0080(8) The term "types of wastewater" is confusing terminology given specified "types of graywater" otherwise addressed. It seems it is the (d) activity wastes that lead to this. Alternatively, such activity wastes could be excluded from the definition of graywater. If the (a), (b), and (c) limitation were moved into the definitions and (d) listed an exclusion, this section might not be needed.	41

63 **Comment Summary:** **Clarify that any hazardous chemical or waste disposal shall not be allowed regardless of source [0080(8)(c)].**

DEQ Response: OAR 340-053-0080(d) directs a person to divert various wastewaters, regardless of the fixture from which they originate, to an appropriate wastewater treatment and disposal system. "Wastewater containing residual waste from activities such as, but not limited to, cleaning of oily rages; rinsing of paint brushes; disposal of pesticides, herbicides, or other chemicals; or disposal of waste solutions from hobbyist activities like home photo labs."

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Clarify that any hazardous chemical or waste disposal shall not be allowed regardless of source [0080(8)(c)]. Similarly, irrigation of brownfield and lands with contaminated soils (per DEQ databases) should be prohibited []0090(1)(e)(G)].	46

65 **Comment Summary:** **The prohibition of reuse for systems cleaning “soiled” items would tend to imply all laundry generated graywater is not allowed to be reused. Consider dropping the term “soiled” [0080(8)(c)].**

DEQ Response: The use of the term "soiled" comes directly from the definition of graywater given in statute, which states that graywater does not mean "wastewater contaminated

by soiled diapers". The rule clarifies that wastewater derived from similarly soiled items (e.g., bed sheets, underclothes) should be directed to an appropriate wastewater treatment system.

No changes to the proposed rules were made in response to this comment.

Original Comment	Commenter:
36) The prohibition of reuse for systems cleaning "soiled" items would tend to imply all laundry generated greywater is not allowed to be reused. Consider dropping the term "soiled" [0080(8)(c)].	46

66 **Comment Summary:** **Section 340-053-0080(8)(b) of the rule states that water from garbage disposal and dishwashers must be sent to the sewer. Use of kitchen sink water must have the caveat that the water cannot be from a garbage disposal or dishwasher if it to be part of the graywater system.**

DEQ Response: Since statute defines graywater as kitchen sink wastewater only, other sources of kitchen waste are considered sewage and must be diverted to an appropriate wastewater treatment system. The proposed rule states that wastewater from dishwashers and garbage disposals must be diverted to a wastewater treatment and disposal system.

No changes were made to the proposed rule in response to these comments.

Original Comment	Commenter:
-0090 (6) How do you define kitchen wastewater with a garbage disposal?	3
OAR 340-053-0090(1)(b) Due to the multiple subsets of graywater types and allowable management methods, reiterate that dishwasher, garbage disposal kitchen sink water, and diaper laundry water cannot be reused and must be diverted per limitations at 340-053-0080(8).	41
Section 340-053-0080 (8)-b of the rule states that water from garbage disposal and dishwashers much be sent to the sewer. Use of kitchen sink water must have the caveat that the water cannot be from a garbage disposal or dishwasher if it to be part of the graywater system.	46

General requirements

Waste strength limitation — OAR 340-053-0080(9)

67 **Comment Summary:** **Clarify whether homeowners are required to collect samples to assure they meet the criteria of 340-053-0080(9). If so, who pays for the tests? Who reviews the results? Will there be additional guidance for those evaluating graywater proposals to determine if graywater will be detrimental to onsite system performance? Will property owners be notified of potential problems with removing graywater from an onsite system?**

DEQ Response: The proposed rule specifies that a person may not divert graywater from an onsite wastewater treatment system if the resulting effluent quality exceeds the criteria for residential strength wastewater as defined under the onsite rules in OAR 340-071. OAR 340-053-0080(9) does not specify how a property owner will comply with this requirement. Collecting a sample is one alternative, however, other viable alternatives may be acceptable, such as through system design. If a sample is collected, the system owner is responsible for any analytical costs. DEQ is not

currently planning to complete detailed reviews of application for coverage under a Tier 1 permit. For a Tier 2 permit, OAR 340-053-0110(1)(b)(B)(5) requires the plans and specification for a system diverting graywater from an onsite wastewater treatment system to be certified and signed by an engineer or other appropriate professional identified under ORS 672 or 700. For these systems, DEQ will review application materials to verify that the system has been designed to meet the requirements of OAR 340-053-0080(9).

DEQ was unable to locate documented cases where adverse effects resulted to onsite systems after graywater was diverted. However, information on potential impacts on diverting graywater from an onsite system may be provided to property owners if data is available to support that conclusion.

DEQ will develop an Internal Management Directive (IMD) to assist DEQ staff responsible for reviewing Tier 2 and Tier 3 permit applications and issuing or writing permits.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
-0080 (9) who is going to test (pay for) BOD5, TSS, TKN, Oil and grease test? Who is going to look at the results? What if results exceed standards?	3
Will there be guidance for those evaluating gray water reuse proposals on how to determine, whether or not, diverting gray water from a septic system would be detrimental to the operation of a septic system? How will DEQ make this determination or determine when "residential strength waste" will be exceeded? Will there be a clause in the Graywater Reuse Permit that there are associated risks in separating graywater for those who are connected to onsite sewage disposal system? Premature failure would be a concern?	22
Clarify whether homeowners are required to pull samples to assure they meet the criteria of 340-053-0080 (9).	46

General requirements

Graywater flow determination

OAR 340-053-0080(10)

68 **Comment Summary:** **Numerous commenters expressed concern on the requirement to design a graywater reuse and disposal system around minimum design flows. Requests were made to base graywater reuse and disposal systems on 60 percent of actual flows or the prescriptive design flows in Table 1. Other requests were made to simply allow designs based on any quantity of graywater flow.**

DEQ Response: Graywater reuse and disposal systems must be appropriately designed such that graywater is reused without adverse impacts on human health or the environment. Because household graywater (and wastewater) flows can vary significantly between households as well as within a single household, graywater reuse and disposal system designs should account for these types of variations. Using a predictable set of design flows, such as those given in Table 1, provides advantages to homeowners, designers, and regulators by establishing a clear set of standards by which graywater reuse and disposal systems may be designed, evaluated, and operated.

DEQ recognizes, however, that the amount of graywater needed for reuse is the determining factor in system design. Moreover, the amount of graywater needed may change, such as during a wet weather period when less graywater is needed for irrigation. When the amount of graywater produced exceeds the amount required for reuse, the excess water must be treated and stored, or diverted to a wastewater disposal system.

Since the proposed rules focus on the reuse of graywater, DEQ has amended the language in OAR 340-053-0080(10) to eliminate prescriptive graywater volumes for system design and require design of a graywater reuse and disposal system based on the volume required for the end use. The amended rules direct DEQ to use the graywater volumes in Table 1 to determine the appropriate graywater permit and allow DEQ to mandate the use of prescriptive design volumes, if needed.

Original Comment	Commenter:
1) users are required to use DEQ's pre-set table of water usage to design systems around, rather than actual flows (this is contrary to the recommendation of the Advisory Committee). How can you assume usage is identical statewide in the future when water rates are certain to rise and therefore usage will decrease? You do not offer any real justification for this.	10
The design systems showing the minimum gallonage that the system is designed for—the 216 gallons—I'd like to echo some of the comments previously that were saying that is way higher than their average household use daily. Currently, my house uses about 20 gallons of water a day. And keeping in mind disaster preparedness and such things like that I can definitely understand designing a system for well in excess of what you expect you may use, but I think that also might inhibit people from adopting using a graywater system—having something in their mind that may be too difficult for them to install. I wonder if there's a way that if they can prove they are using significantly less water, then whatever the design is setup or whatever category they fall into, if they can still get their system approved with some sort of disaster, such that on occasion they do need to use 200 gallons in one day or 300 gallons in one day that their system is designed to accommodate for that on a rare infrequent occasion.	12
340-053-0080, section 10. • Current ruling: The flow tables sited in table 1 340-053-0080 are developed with conventional access to water resources. • Argument: A Living Building is restricted to the size of its roofs for collection of rainwater for its inhabitants. The design quantities are far in excess of the expected water utilization (and attaining net zero water use over the course of a year). Typical water use for a net zero home is somewhere between 10 and 30 gallons per person per day. Thus, a home of four could not discharge more than 40-120 gallons per day into grey water type 2 storage tanks. Flow rates are severely reduced with the use of technology such as recycling shower water, composting, no flush toilets, and dishwashers. The quantity of both rain and graywater changes in a dynamic pattern as a function of use and rain patterns. This water is later used to water gardens, no more than an inch per day. On a 5000 sq ft property, with 4100 sq ft of garden, this amounting to 342 cu ft or gallons or some 2500 gallons distributed over the course of a week. • Request: Add an addendum to this rule that allows for the use of designed flow rates for net zero water systems.	14
The minimum sizing of 216 gallons per household—we're going to be net-zero in rain, our home is only going to be able to capture 4000 gallons over the full year, which amounts to a household of three about 30-60 gallons use or discharge per day. And that scuttles—the 216 gallon minimum—scuttles this. And, I do believe if we were to look and the total system and see that this is only going to be 4,000 gallons discharged over the year—really only half the	14

year because we're going to have to be storing water for the gardens. And the gardens are going to be both on the ground and on the walls, and I think we could relook at this sizing issue.

Reality-based design 15

First, I strongly advocate the rules to reflect the recommendation of the Graywater Advisory Committee, and change 340-053-0080(10) such that graywater users can design their system based either on actual water usage, or the table provided. Using numbers that may have no relationship with the actual amount of water used will have several negative impacts:

1) It will force people to overdesign systems that are unnecessary, and perhaps will not work well, for the amount of water flowing in them. It is well known that consistently low flows in living bioremediation systems can permanently damage them; this may actually inhibit water conservation efforts.

2) It ensures that people striving to design advanced sustainable living structures will still be thwarted by Oregon's graywater laws. For example, the Cascadia Green Building Alliance was instrumental in passing HB 2080, specifically so people in Oregon could design and build houses that would meet its Living Building Challenge. Systems that are designed for maximum conservation, including in-building graywater reuse, may have external graywater flows an order of magnitude lower than the table reflects. In such cases, this table would require vastly more land use and expense than is actually necessary, hamstringing economic viability and limiting urban density.

3) Even outside of highly engineered new construction, many people use far less water than is reflected in the table, especially those conservation-minded folk likely to put in graywater systems. In my eco-minded community, we have 12 occupied bedrooms, and we recently calculated our total water use in winter as 325 gallons per day, with graywater significantly less. According to the table, we would have to design a system for around 400 gallons of graywater per day – which would needlessly move us into another permitting tier, in addition to overbuilding our system.

4) Because graywater adopters' actual use is unlikely to be reflected in the table, I feel that people will be inclined to ignore the table, and perhaps the rules altogether, and simply install a system that works with actual flow amounts. As an educator and promoter of graywater use, I would find it hard to encourage people to abide by the table, “because that is the way all the other DEQ rules are written” and not because it actually has any practical relevance. Having a fixed table provides no public benefit. Graywater systems can be fairly easily changed and expanded to account for future increases in water use. In this way they differ from a septic field or other installation that, once created, is more difficult to adjust to increases in use. Permit owners will have no incentive to stay with a graywater system that is too small, just because that's how it was first put in.

For all these reasons, I strongly encourage the DEQ to make the sensible choice, follow the recommendations of the Advisory committee and lead the way for future rules to do so as well, and give people the option of designing systems based on either actual flow, or the suggested amounts from the table.

The table that requires we use a table of relatively arbitrary numbers to create our graywater systems. And there's a couple of reasons I have concern with this. One is that as [DEQ] noted, this goes against the recommendations of the graywater advisory committee, which gave people options. You could either use the table or graywater could be calculated using the actual flows, which we recommended be 60% of indoor use. And, that ability to choose allows for a couple of things. First, it allows for systems created that actually meet the needs of the people using the system and of the site—rather that [creating] systems that are either way overbuilt or under-built based on the actual use. I hear [DEQ] saying this was changed to be in-line with the other water rules, but there are some ways in which this is significantly different. One, is when you build a septic tank, it's a huge massive undertaking this is not easily changed. Once your septic tank is there and sized, it's not going to change from user to user to user, and you want to have something that can accommodate multiple types of use. Graywater systems are a lot much more flexible and easy to be changed, so I don't think there's the some necessity of creating a lasting artifact from person to person. Basically saying that you have to create a system because somebody at sometime may want to use more 15

water makes no sense in the actual physical application. Also because the margin of use between Tier 1 and Tier 2 is so small, it actually makes a very significant difference how much water you're being assessed by, so we want to make sure because the requirements change a lot depending on volume of water that we can create regulations that are based on what people actually do. So, I strongly suggest that the DEQ take a more innovative approach and not be stuck by what all the other rules do and listen to the advisory committee and give people the chance to be more sustainable and use less water and be allowed to reflect that in their graywater systems.	
I do not think there should be a minimum gallons per day limit of water use for Type 1 graywater reuse. After all, we are trying to bring down water use, and part of that is how much can be brought down by individual consumption. All of us should be able to use our graywater, however little, for irrigation purposes.	21
WATER USE STANDARDS – I'd recommend adopting the Advisory Committee recommendations on design of systems for actual water use levels. (change 340-053-0080(10) My understanding is that DEQ has not modified its standards for septic systems since the 1970's, although low-flow fixtures have cut water use for most households in half. We use less than a quarter of DEQ standards, as do many people, and it is a considerable expense to overdesign both septic and back-up septic areas for excessive flows. Graywater systems can be easily modified if needed to accommodate greater flows.	34
First, I would like to see actual water use and measured flows be used as system design components instead of the table of water usage provided in the proposed rules. If a water user is already practicing careful water conservation the user would need to overbuild the system for their use causing unnecessary expense and could discourage individuals/businesses from shifting to greywater systems. The other problem would be if a water user produced more greywater that the system was designed for as a result using standardized quantities instead of measured use. This would potentially result in unsanitary conditions.	35
Systems should be designed around the real flows from a building not pre-set numbers from a table of water usage. They will then either be over or under built. It also does not create a climate of personal responsibility around system sizing and design.	36
That the design of graywater systems be based on actual water use as well as the table provided. 340-053-0800(10)	42
I completely understand the need to make sure that as home owner, I do not negatively impact groundwater or surface water and there is a plethora of regulations on the subject. While it is helpful to have guidelines on how big a graywater system should be, to have systems required to be a specified size regardless of actual usage, significantly misses the mark. As home owner, please allow me to design a system that is based on actual water usage and so I can build a system that is appropriately sized. My guess is the folks who are putting in graywater systems are going to be considerably more water usage literate then the general population. Later expansion of a graywater system is fairly straightforward process as more housemates are added.	43
Lastly, we would like to suggest that sizing system capacity on a pre-established schedule is highly ineffective. Why not weigh in actual water usage? Or have modification factors for low-flow fixtures. The suggested water-schedule may be based on historical data, but you can't even buy a toilet today that uses as much water as the average toilet twenty years ago. Perhaps the historical data can be the beginning point for a calculation involving number of fixtures and coefficients of water use relative to the historical data. In that way mandatory over-design could be avoided.	44

69 **Comment Summary:** **OAR 340-053-0080, Table 1: For a 2 bedroom single family dwellings, the minimum per establishment flow is 216 gpd. For a three bedroom SFD the per establishment flow would be 144+160.8 gpd? Per GWAC Recommendations, graywater flow should be estimated at 60% of total flow.**

Table 3 of the Recommendations cites total minimum flow for a SFD = 360 gpd or 216 gpd graywater. Each extra bedroom should be 60% of 60 gpd or 36 gpd.

DEQ Response: The design flows for a single family dwelling in Table 1 included an incorrect value. The table has been updated with the correct information, which is 36 gpd per bedroom for third and successive bedrooms.

Original Comment	Commenter:
Table 1. OAR 340-053-0080. Design flows for graywater reuse and disposal systems This table is clearly a revision of the onsite sewage table showing sewage flows. That table was flawed and out of date and this table reflects that as well. The extrapolation for minimum flows per establishment is flawed and should be removed or should be redone Dwellings: single family dwellings seems to be incorrectly done. The table shows 144 gpd not to exceed 2 bedrooms with a minimum of 216gpd (should be 144). Single family dwellings with more than 2 bedrooms is incorrectly showing 144 when the math would indicate 160.8	24
OAR 340-053-0080, Table 1 For a 2 bedroom single family dwellings, the minimum per establishment flow is 216 gpd. For a three bedroom SFD the per establishment flow would be 144+160.8 gpd? Per GWAC Recommendations, graywater flow should be estimated at 60% of total flow. Table 3 of the Recommendations cites total minimum flow for a SFD = 360 gpd or 216 gpd graywater. Each extra bedroom should be 60% of 60 gpd or 36 gpd.	41

71 **Comment Summary:** **This table is difficult to interpret. The following comments are added to help with the use ad interpretation of the table.**
a. The description for this section, "A person must use the graywater flow volumes in Table 1 when designing a graywater reuse and disposal system" could use more detail. Consider including a sentence that states, "The system must be designed to treat, store or process the amount of graywater listed in Table 1."
b. The table has two columns "Gallons per day" column and the "Minimum gallons per establishment per day". It is unclear which column informs the minimum design flows. The table would be easier to understand if one of the columns was eliminated.
c. The line of the Table 1 for single family homes lists the Gallons per day at 144 (not exceeding 2 bedrooms) and then the Minimum Gallons per Establishment per Day at 216. It is not clear which is the minimum design flow. Update the table to say that the minimum gallons per day for a single family home are 144 gallons for up to 2 bedrooms. An additional 16.8 gallons will be added for each additional bedroom.
d. Why are there two Country club lines? Each line has a different minimum flow. This needs clarification.
e. How can the airport minimum possibly be 72 gallons per day? This seems extremely low.
f. What is the difference between luxury camp and resort camp?
g. How do you determine the number of people for swimming pool use?
h. Should self service laundries be removed since the nature of items washed in those locations has a higher potential for hazardous pollutant generation?

DEQ Response: DEQ has amended OAR 340-053-0080(10) and Table 1 to provide greater clarity. (a) The rule now states that the design of a graywater reuse and disposal system

must be based on the volume of graywater needed for the reuse application, including any treatment or storage capacities. Graywater in excess of the system design must be diverted to a wastewater disposal system. (b) The column headings in Table 1 have been amended with clarifying language. (c) One of the single family residence lines has been deleted and the flow for bedrooms corrected to 36 gpd. (d) The two lines for country clubs are design volumes based on members or non-members. (e) Small rural airports may generate very low volumes of graywater. (f) Resort camps have limited plumbing whereas luxury camps have full plumbing. (g) The person designing a graywater system for a swimming pool will need to determine the number of users. (h) Self-service laundries will be permitted under a Tier 2 or Tier 3 permit and will be required to have signage informing users that graywater is being reused.

Original Comment	Commenter:
This table is difficult to interpret. The following comments are added to help with the use ad interpretation of the table. a. The description for this section, "A person must use the graywater flow volumes in Table 1 when designing a graywater reuse and disposal system" could use more detail. Consider including a sentence that states, "The system must be designed to treat, store or process the amount of graywater listed in Table 1." b. The table has two columns "Gallons per day" column and the "Minimum gallons per establishment per day". It is unclear which column informs the minimum design flows. The table would be easier to understand if one of the columns was eliminated. c. The line of the Table 1 for single family homes lists the Gallons per day at 144 (not exceeding 2 bedrooms) and then the Minimum Gallons per Establishment per Day at 216. It is not clear which is the minimum design flow. Update the table to say that the minimum gallons per day for a single family home are 144 gallons for up to 2 bedrooms. An additional 16.87 gallons will be added for each additional bedroom. d. Why are their [sic] two Country club lines? Each line has a different minimum flow. This needs clarification. e. How can the airport minimum possibly be 72 gallons per day? This seems extremely low. f. What is the difference between luxury camp and resort camp? g. How do you determine the number of people for swimming pool use? h. Should self service laundries be removed since the nature of items washed in those locations has a higher potential for hazardous pollutant generation?	46

General requirements

System design plan OAR 340-053-0080(11)

72 **Comment Summary:** **OAR 340-053-0080 (11) These rules are predicated on graywater being used for beneficial purposes (340-053-0060(1)) such as irrigation. Responsible irrigation is limited to rates required by the plants. Exceeding a bone fide irrigation rate becomes improper disposal and risks system failure. Irrigation rate and irrigation system area should be in the system design plan for all irrigation systems, not just those over those 300 gpd. Lawns required about 1 inch of water per week in summer. At 300 gpd, the area irrigated would be 3,400 square feet. Seasonal adjustments should be included on allowable rates.**

DEQ Response: DEQ agrees that the rules are predicated on graywater being reused for beneficial purposes and that the release of excess graywater could result in system failure and impacts on human health and the environment. OAR 340-053-0080(11)(a)(D) applies to all graywater reuse and disposal systems and requires

the system design plan to include the "design of the distribution and reuse system." The DEQ Graywater Advisory Committee recommended that detailed plans not be required for graywater reuse and disposal systems producing less than 300 gpd. However, other rules require graywater irrigation systems be designed to prevent adverse impacts to public health or the environment. OAR 340-053-0090(1)(e) includes explicit requirements for selecting and managing graywater irrigation sites, including ensuring the site can accommodate both the volume and rate of graywater applied.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
OAR 340-053-0080 (11) These rules are predicated on graywater being used for beneficial purposes (340-053-0060(1)) such as irrigation. Responsible irrigation is limited to rates required by the plants. Exceeding a bone fide irrigation rate becomes improper disposal and risks system failure. Irrigation rate and irrigation system area should be in the system design plan for all irrigation systems, not just those over those 300 gpd. Lawns required about 1 inch of water per week in summer. At 300 gpd, the area irrigated would be 3,400 square feet. Seasonal adjustments should be include on allowable rates.	41

73 **Comment Summary:** **The system design plan should be written and available anytime a house changes ownership or occupancy.**

DEQ Response: The language in OAR 340-053-0080(11) has been updated to include: "The owner or operator of a graywater reuse and disposal system must have and maintain a written system design plan that remains with the graywater reuse and disposal system on property transfer.

Original Comment	Commenter:
I like the idea of having a plan and an evaluation on site. I think that ought to be a written plan, and I think that's called out in the regs. I think it's something that ought to be kept on file so that anyone who purchases your house knows what the plan was, knows what the intention was, and knows how to maintain the system. I know we had the Operation and Maintenance manual for Tier 2/Tier 3, but I wouldn't object if they said for Tier 1 that we have an operations manual—What's typical? How is this designed? I think it's very important that everybody with the system understands how it's suppose to operate—forever.	28
On the plan design, I want to stress that the design should be written and should be available anytime a house is going to change ownership or maybe somebody sublet and there's another family totally different living in it. So whoever is living in a house needs to know what that house contains—especially in terms of use of water. It needs to be written out enough that anyone else can understand—not a little squiggly over here and "Oh, that meant turn it off or turn it on". I'm really concerned the rules spell out—it should be clear and it should be understandable to other people. I assume there will be a lot of education working with realtors, home owners associations, and the like, and plumbers, and all those industries who will have some sort of interest in what's happening with these homes. It's vital that the more people who understand, the better.	33

75 **Comment Summary:** **Permit application submittals and plan drawings should clearly explain where "off-season" flows of graywater shall be routed for disposal. Operators should be aware that even in the driest months with high evapotranspiration their reuse systems are likely to generate more graywater flow than can be beneficially reused.**

DEQ Response: OAR 340-053-0090(1)(a)(A) specifies that wastewater must be diverted to an appropriate wastewater disposal system. Information on the type of wastewater disposal system will be requested as part of the permit application.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Permit application submittals and plan drawing should clearly explain where "off-season" flows of graywater shall be routed for disposal. Operators should be aware that even in the driest months with high evapotranspiration their reuse systems are likely to generate more graywater flow than can be beneficially reused.	46

General requirements

Operation and maintenance OAR 340-053-0080(12)

76 **Comment Summary:** **Consider adding the requirement to complete a maintenance log on all systems.**

DEQ Response: OAR 340-053-0080(12) requires a person to operate and maintain a graywater reuse and disposal system in compliance with their permit and the rules. Persons issued a Tier 3 permit will be required to submit an annual report demonstrating compliance with the permit and rules. In response to other public comments, the rules have been amended to encourage persons issued a Tier 1 or Tier 2 permit to submit an annual report to the department demonstrating compliance with the permit and rules. It is unclear how a requirement to keep a maintenance log would result in better compliance with the rules. A maintenance log may used at the discretion of the system owner or operator.

No changes were made to the proposed rule in response to this comment.

Original Comment	Commenter:
Consider adding the requirement to complete a maintenance log on all systems.	46

77 **Comment Summary:** **Add language to require that the permit applicant do annual or semi-annual visual monitoring of all systems and their components, including erosion or other impacts within the reuse application area.**

DEQ Response: OAR 340-053-0080(12) requires the owner or operator of a graywater reuse and system to operate and maintain the system in compliance with the permit and the rules. Visual monitoring may be included as a permit condition. In response to other public comments, the rules have been amended to encourage persons issued a Tier 1 or Tier 2 permit to submit an annual report to the department demonstrating compliance with the permit and rules.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Add language to require that the permit applicant do annual or semi-annual visual monitoring of all system and their components, including erosion or other impacts within the reuse application area.	46

78 **Comment Summary:** **Consider adding an inspection schedule (at least a recommended one) for each type of system.**

DEQ Response: Except in the case of large graywater reuse and disposal system authorized under a Tier 3 permit, the department will not have sufficient resources to conduct regular inspections on graywater reuse and disposal systems. The department expects that plumbing and cross-connection inspections will occur on all systems as prescribed by local building codes. Time-of-transfer inspections on residential onsite wastewater treatment systems were proposed during the 2011 legislative session and did not get wide support. DEQ does not believe a similar inspection program would be supported for graywater reuse and disposal systems. However, graywater permits will likely include a condition that the system must be available for review or inspection on the department's request.

OAR 340-053-0080(12) requires the owner or operator of a graywater reuse and disposal system to operate and maintain the system in compliance with the permit and rules, but does not specifically require routine inspections of the system. Inspections by the system owner or operator may be necessary to comply with annual reporting requirements. DEQ has not included a self-inspection schedule in the proposed rule but may recommend regular inspections be completed with the submission of the annual report referenced in OAR 340-053-0080(14).

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Consider adding an inspection schedule (at least a recommended one) for each type of system.	46

General requirements

Operation and maintenance manual OAR 340-053-0080(13)

79 **Comment Summary:** **I like the written design that is passed along to future homeowners and having an operations and maintenance program.**

DEQ Response: Comment noted.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
I like the written design that is something passed along to future homeowners and having an operations and maintenance program.	29

80 **Comment Summary:** **OAR 340-053-0080 (13)(D) To inform and protect adjoining property owners and residents, all reuse system users should be required to notify their neighbors.**

DEQ Response: DEQ expects most graywater will be used as an alternate water source for irrigation. Since irrigation systems do not require neighbor notification, DEQ has not included this requirement in the proposed rules. The proposed rules require setbacks to property lines and other sensitive features as well as best management practices to protect public health and the environment.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:

(13)(D) To inform and protect adjoining property owners and residents, all reuse system users should be required to notify their neighbors.

81 **Comment Summary:** **DEQ should provide a sample outline or table of contents to clearly describe what must be included in the operations and maintenance manual.**

DEQ Response: OAR 340-053-0080(13)(a) lists information that must be included in the operations and maintenance manual.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
The operation and maintenance manual, while a good thing, is written by the owner and is up to the owner to report that these smaller systems operate as intended. DEQ should provide a sample outline or table of contents to clearly describe what must be included in the manual.	46

General requirements

Reporting OAR 340-053-0080(14)

82 **Comment Summary:** **Clarify when annual reports will be required of system operators.**

DEQ Response: OAR 340-053-0080(14) specifies that an annual report must be submitted to the department as required in rule or in a permit. OAR 340-053-0110(2)(d)(B) requires an annual report for all Tier 3 permits. OAR 340-053-0110(1) has been updated to encourage the submission of annual reports for graywater reuse and disposal systems covered under a Tier 1, Tier 2 or geographic area general permit. OAR 340-053-0080(14) has been updated to clarify that the annual report must be received by the department by the date specified in the permit.

Original Comment	Commenter:
Clarify when annual reports will be required of system owners.	46

General requirements

Site evaluation OAR 340-053-0080(15)

13 **Comment Summary:** **The draft rules require that a site evaluation be conducted for a graywater permit, but do not outline the methodology for doing the evaluation. Supporting information must be provided to permit applicants to ensure accurate assessment of a site's ability to retain graywater.**

DEQ Response: The proposed rules specify the types of information that must be included in a site evaluation report submitted to the department. Specific evaluation procedures have not been included in the proposed rules because they may vary depending on the site being evaluated. Additional information on site evaluation requirements will be provided with the permit application or in other supplemental materials.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
The draft rule requires that a site evaluation be conducted for a graywater permit, but does not outline the methodology for doing the evaluation. Supporting information must be provided to permit applicants to ensure accurate assessment of a site's ability [to] retain	46

graywater.

83 **Comment Summary:** **DEQ should provide a list of qualifications or requirements for persons who will be "evaluating" graywater systems [0080(15)], such as persons with professional accreditations related to soils such as engineers, landscape architects, soils scientists and sanitarians.**

DEQ Response: OAR 340-053-0110(1)(b)(B)(5) and -0110(2)(b)(F) require that some types of plans must be signed by registered professionals listed under ORS 672 or 700, which include professional engineers, land surveyors, geologists, environmental health specialists, and wastewater specialists.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
DEQ should provide a list of qualifications or requirements for person who will be "evaluating" graywater systems [0080(15)], such as persons with professional accreditation related to soils such as engineers, landscape architects, soils scientists and sanitarians.	46

84 **Comment Summary:** **The site evaluation section 340-053-0080(15) should include information on the following:**
a. Whether the property receiving graywater is in a designated groundwater management area, a wellhead protection area or geographic region identified in an area wide aquifer management plan.
b. The soil infiltration rate instead of the soil profile. It will be much easier for homeowners to dig a hole and time infiltration than to dig up and describe a soil profile. Consider a simplified infiltration test similar to what the City requires for stormwater management: http://www.portlandonline.com/bes/index.cfm?c=47962&a=202911
c. The evapotranspiration rates for just the vegetation receiving application should be provided along with a notation on the resource used to establish those rates.

DEQ Response: a. Information such as whether the graywater reuse and disposal system is located within a specific groundwater area listed in OAR 340-053-0080(7) will be required as part of the permit application to determine if the applicant is covered under the appropriate permit. No changes were made to the proposed rules in response to this comment.

b. More detailed soil information is generally required only for Tier 2 and Tier 3 permits. The department agrees that water infiltration rates are appropriate for some types of systems. The clause "..., including water infiltration rates" has been amended to OAR 340-053-0080(15)(c).

c. OAR 340-053-0080(15)(f) requires evapotranspiration rates to be provided with a site evaluation report. The department will request the source of the ET data in the permit application. No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
The site evaluation section 340-053-0080(15) should include information on the following:	46

a. Whether the property receiving graywater is in a designated groundwater management area, a wellhead protection area or geographic region identified in an area wide aquifer management plan.
b. The soil infiltration rate instead of the soil profile. It will be much easier for homeowners to dig a hole and time infiltration than to dig up and describe a soil profile. Consider a simplified infiltration test similar to what the City requires for stormwater management: http://www.portlandonline.com/bes/index.cfm?c=47962&a=202911
c. The evapotranspiration rates for just the vegetation receiving application should be provided along with a notation on the resource used to establish those rates.

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85 **Comment Summary:** **-0080 (15) Site Evaluation. Recommend another term for site evaluation as a site evaluation is a contract agent term for a registered EHS or wastewater specialist to perform on-site program work. You may run into problems with the Oregon Health Licensing Board on definition of duties for non-registered personnel.**

DEQ Response: "Site evaluation" is common language describing a general activity. However, the description for OAR 340-053-0080(15) has been changed to "Graywater irrigation site evaluation."

Original Comment	Commenter:
-0080 (15) Site Evaluation. Recommend another term for site evaluation as a site evaluation is a contract agent term for a registered EHS or wastewater specialist to perform on-site program work. You may run into problems with the Oregon Health Licensing Board on definition of duties for non-registered personnel.	3

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86 **Comment Summary:** **340-053-0080 (15)(c) The irrigation rate of soils that are "reusing" this water should be required. Soil profiles will not necessarily describe how much water the profile can hold.**

DEQ Response: The proposed rules specify that graywater irrigation may occur when evapotranspiration rates for vegetation exceed precipitation and that graywater may not surface or runoff. This combination of restrictions was recommended by the DEQ Graywater Advisory Committee as sufficient to allow graywater reuse while protecting public health and the environment. Graywater systems irrigating more than 300 gallons per day must include a more detailed irrigation design, which includes discharge areas and rates. The department agrees that water infiltration rates are appropriate for some types of systems. The clause "..., including water infiltration rates" has been amended to OAR 340-053-0080(15)(c).

Original Comment	Commenter:
340-053-0080 (15)(c) The irrigation rate of soils that are "reusing" this water should be required. Soil profiles will not necessarily describe how much water the profile can hold.	38

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87 **Comment Summary:** **OAR 340-053-0080(15) To ensure conformance and success of the system, all reuse systems should have site evaluation information submitted as part of the permit application.**

DEQ Response: The DEQ Graywater Advisory Committee recommended that Tier 1 permits be as simple a possible to encourage graywater reuse and believed that low volume residential systems posed little threat to public health or the environment. Consequently, the proposed rules require that graywater reuse and disposal systems be designed, but do not require DEQ review and approval prior of the design or site evaluation prior to granting coverage under a Tier 1 general permit.

Some site information will be required with the permit application to confirm that the system is eligible for coverage under the permit. However, the Department does not have sufficient resources to individually evaluate site evaluations for low volume residential graywater reuse and disposal systems.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
OAR 340-053-0080 (15) To ensure conformance and success of the system, all reuse systems should have site evaluation information submitted as part of the permit application.	41

General requirements

Property lines crossed OAR 340-053-0080(16)

88 **Comment Summary:** **The rules place additional constraints on property owners that have adjacent properties under the same ownership. I don't understand why there should be additional regulations the property owner must meet. Even if the system does go across both properties, I don't see the necessity for the additional conditions.**

DEQ Response: DEQ agrees that the proposed rules included overly complex requirements when graywater crossed property lines. However, DEQ believes that an agreement is necessary when graywater is used offsite. OAR 430-053-0080 (16) has been amended and simplified to require an agreement between the owners of properties when graywater crosses property boundaries.

Original Comment	Commenter:
Furthermore, I did also notice that in the rules there are additional constraints on property owners that have adjacent properties, but they are the same owners for both properties. I don't really why there should be any additional regulations that that property owner should have to meet. Even if the system does go across both properties, I don't see the necessity for that.	26

89 **Comment Summary:** **OAR 340-053-0080 (16) refers to property lines being crossed: It appears that a property owner can transport graywater to "any" approved site for irrigation reuse; meaning that there is no limitation on how far one could be allowed to transport gray water. Can someone transport graywater using a vehicle? How far is too far?**

DEQ Response: The proposed rules do not limit how graywater is distributed to a reuse site or the distance of the reuse location from the location of generation. It is possible, and perhaps even likely, that graywater could be collected and transported by truck for beneficial reuse. The department will provide additional information on permitting this type of graywater reuse and disposal system in an Internal Management Directive (IMD).

No changes to the proposed rules were made in response to this comment.

Original Comment	Commenter:
OAR 340-053-0080 (16) refers to property lines being crossed: It appears that a property owner can transport graywater to "any" approved site for irrigation reuse; meaning that there is no limitation on how far one could be allowed to transport gray water. Can someone transport graywater using a vehicle? How far is to far?	22

Graywater Quality Standards for Reuse - All graywater

Benefical purposes OAR 340-053-0090(1)(a)

90 **Comment Summary:** **I also don't understand why the proposed rules don't allow for having a pond with graywater.**

DEQ Response: OAR 340-053-0090(2)(a) allows Type 2 graywater to be used in landscape ponds not intended for human contact.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
I also don't understand why the bill doesn't allow for having a pond with graywater. If you are concerned about the water quality the bill can state the graywater has to pass through a wetland area planted with reeds to clean the water before entering the pond. I was told there were concerns about mosquitoes. All you need to do to eliminate the possibility of mosquitoes is have fish in the pond. You can see this entire system in action at ScienceWorks Museum in Ashland. As for safety concerns they are no different than having a water feature, hot tub or swimming pool in your yard.	6

91 **Comment Summary:** **The safety guidelines are over-cautious. Type 1 graywater could safely be used for applications reserved for type 2 graywater; type 2 graywater could safely be used for applications reserved for type 3 graywater. Soils are a microbe-rich environment, with a specialized ecology that can be expected to out-compete pathogenic microbes, especially if the soil is not waterlogged. The fundamental safety mechanism for graywater reuse is: only reuse it when you need it!**

DEQ Response: Most other states that allow graywater reuse, limit reuse to subsurface irrigation. The proposed rules allow other uses of graywater with additional graywater treatment. The three types of graywater correspond to various levels of treatment; with additional treatment, more reuse options are available. The DEQ Graywater Advisory Committee reviewed the types of graywater and various reuse activities, and determine which activities could be allowed with each type of graywater.

The proposed rules include conditions that limit graywater use to time when the water is needed: OAR 340-053-0090(1)(e) limits graywater irrigation to frozen or saturated soils and to periods when evapotranspiration rates exceed natural precipitation.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Finally, the safety guidelines are over-cautious. Type 1 greywater could safely be used for applications reserved for type 2 greywater; type 2 greywater could safely be used for applications reserved for type 3 greywater. Soils are a microbe-rich environment, with a specialized ecology that can be expected to out-compete pathogenic microbes, especially if the soil is not waterlogged. That is the fundamental safety mechanism for greywater reuse: only reuse it when you need it!	26

Graywater Quality Standards for Reuse - All graywater

Setback distances OAR 340-053-0090(1)(c)

97 **Comment Summary:** **Table 2 OAR 340-053-0090 Horizontal setback requirements appear to be arbitrarily set and should be consistent with setbacks found in other rules. Specifically, the setback from wells and stormwater systems should be increased and a setback from property boundaries should be increased to 10 feet. Building foundation and crawl spaces must be protected from moisture intrusion. The State plumbing code requires a 10-foot setback for sub-surface infiltration. These setback distances should be maintained for storage tanks and discharge of all three types of Graywater.**

DEQ Response: The setback distances established in other administrative rules, such as for onsite wastewater treatment systems under OAR 340-071, are designed to protect water quality when wastewater is discharges to the subsurface for disposal. The graywater rules are intended for graywater reuse, such as irrigation. Since graywater will typically be discharged into the root zone of actively growing plants, it will be utilized by the plants and lost to evapotranspiration. The setback distances were recommended by the DEQ Graywater Advisory Committee and were determined appropriate for irrigation purposes based on the quantity and quality of graywater discharged for irrigation, potential risk to public health, and setbacks required by other jurisdictions.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Table 2 OAR 340-053-0090 Horizontal setback requirements appear to be arbitrarily set and should be consistent with other setbacks found in existing rules that are protective of surface water bodies and groundwater. Setback distances should be consistent with other setbacks found in existing rules for water with similar characteristics. The setback from wells and stormwater systems should be increased and a setback from property boundaries should be increased to 10 feet. Building foundation and crawl spaces must be protected from moisture intrusion. The State plumbing code requires a 10-foot setback for sub-surface infiltration. These setback distances should be maintained for storage tanks and discharge of all three types of Graywater.	38

98 **Comment Summary:** **OAR 340-053-0090(1)(c) Property boundary setbacks of 0 or 2 feet are not adequate. The minimum should be at least 5 ft. Avoiding neighbor impacts will be an important success factor for these systems.**

DEQ Response: The DEQ Graywater Advisory Committee recommended a setback of 2 feet from property boundaries for graywater irrigation. Since other conditions in the rules restrict graywater irrigation from occurring when soils are saturated or frozen, as prohibit graywater from surfacing or running off-site, and limiting graywater irrigation to times when supplemental irrigation is needed by the vegetation, a setback of 2 feet was determined sufficient to prevent neighbor impacts when graywater is used for irrigation. The 0 feet setback for Type 2 graywater has been changed to 2 feet to reflect the committee's recommendation for graywater irrigation.

Original Comment	Commenter:
OAR 340-053-0090 (1)(c) Property boundary setbacks of 0 or 2 feet are not adequate. The minimum should be at least 5 ft. Avoiding neighbor impacts will be an important success factor for these systems.	41

99 **Comment Summary:** **The setback distances in Table 2 contradict state building code requirements for discharge next to foundations. Building and plumbing codes require 10 foot setbacks to protect building foundations. These rules should be consistent. Zero foot building setbacks should be removed.**

DEQ Response: DEQ conferred with the Oregon Department of Business and Consumer Services, Building Codes Division on this issue. State building codes do not include setbacks from building foundations for irrigation systems.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
The setback distances in Table 2 contradict state building code requirements for discharge next to foundations. Building and plumbing codes require 10 foot setbacks to protect building foundations. These rules should be consistent. Zero foot building setbacks should be removed.	46

Graywater Quality Standards for Reuse - All graywater

Site management OAR 340-053-0090(1)(e)

100 **Comment Summary:** **The steep slope determination of 45 degrees is inconsistent with many regulations and best practices which look at 10 to 20 degree slopes as steep. These regulations should be consistent with standard erosion control practices which usually suggest 20 degrees for steep slope determinations.**

DEQ Response: The criterion of a slope not exceeding 45 percent is consistent with the limit for steep slope onsite wastewater treatment systems and was the basis for this number. DEQ agrees that graywater should not be placed on sites that are unstable or could result in runoff to adjacent properties. All the criteria in OAR 340-053-0090(1)(e) limit the siting of a graywater irrigation system. In this context, graywater is being used to irrigate a landscape that would otherwise receive irrigation from another water source. If some other water source is being used to irrigate the landscape, graywater should not be restricted as a replacement water source for this purpose.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
340-053-0090 1 (e) B The standard steep slope designation for erosion control and many geotech codes is 20%. The proposal of 45% is too steep.	38
OAR 340-053-0090 (1)(e)(B) 45% is very steep and risks runoff problems.	41
The steep slope determination of 45 degrees is inconsistent with many regulations and best practices which look at 10 to 20 degree slopes as steep. These regulations should be consistent with standard erosion control practices which usually suggest 20 degrees for steep slope determinations.	46

101 **Comment Summary:** **OAR 340-053-0090(1)(e)(A) Define "subject to flooding" or "excessive runoff."**

DEQ Response: The intent of this language is to limit graywater irrigation from occurring on sites

where excess water could destabilize the landscape, cause erosion, or be carried to waters of the state.

No changes have been made to the proposed rules in response to this comment.

Original Comment	Commenter:
OAR 340-053-0090 (1)(e)(A) Define "subject to flooding" or "excessive runoff."	41
Add a definition for "excessive runoff" as used in 340-053-0070(1)(e)(A).	46

103 **Comment Summary:** **OAR 340-053-0090(1)(e)(E) Irrigation may occur only when evapotranspiration rates exceed natural precipitation. This would limit systems to July through September on the west side.**

DEQ Response: The time period when evapotranspiration exceeds natural precipitation will vary both temporally and spatially around Oregon. For example, 2010 was unusually wet and cool in Oregon and ET exceeded precipitation from February through November in Bend; April through September in Medford; and June through September in Aurora. In 2009, a warmer, drier year, ET exceeded precipitation from April through September in Aurora. The proposed rule language limits graywater irrigation to periods of time when vegetation needs the water, which supports the legislative directive to develop rules for the beneficial reuse of graywater.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
- 340-053-0090 (1)(e)(E) Irrigation may occur only when evapotranspiration rates exceed natural precipitation. This would limit systems to July through September on the west side	24

111 **Comment Summary:** **OAR 340-053-0090(1)(e)(D) Depth to groundwater separation should be consistent with existing rules.**

DEQ Response: The 4-foot separation between the point of graywater discharge for irrigation and groundwater is intended to protect groundwater from contamination with graywater. It is unclear from the comment where the proposed rules are inconsistent with other DEQ rules. The rules that most closely relate to graywater reuse are the recycled water rules (OAR 340-055), which do not specify a groundwater separation distance. The DEQ Graywater Advisory Committee reviewed the separation distances between graywater irrigation and groundwater required by other states and countries that allow graywater reuse. Separation distances varied between jurisdictions, but commonly ranged between 3 and 5 feet. The Advisory Committee determined that 4-feet was sufficient for graywater irrigation where graywater would be used by plants or otherwise lost to evapotranspiration.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
340-053-0090 (1) e (D) Depth to groundwater separation should be consistent with existing rules.	38

114 **Comment Summary:** **How as a home owner am I suppose to know when "evapotranspiration rates exceed natural precipitation"?**

DEQ Response: The intent of the language is to limit graywater use to periods when plants need supplemental irrigation water. As a general rule, graywater should only be applied when you would normally be irrigating your property with another water source. A number of resources are available to assist homeowners with irrigation needs. For example, in the Portland metro area, a consortium of water providers has created the website www.conserveh2o.org, which includes a feature, the weekly watering number, to assist homeowners in knowing when and how much to irrigate. A number of soil and water conservation districts can also provide information on when and how much to irrigate your landscape during the irrigation season. ET and precipitation data for various locations in Oregon are also available online from the U.S. Bureau of Reclamation's AgriMet network of weather stations.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
How does DEQ propose that the following requirements from 340-053-0900, (1), (e), are realized? (E) Irrigation may occur only when evapotranspiration rates exceed natural precipitation. (F) The soil and vegetation in the irrigation area must have capacity to accommodate the volume and rate of graywater applied without discharging to surface water or groundwater. Besides being impractical to implement and monitor, these statements presuppose that it is somehow possible and desirable to ensure that no treated graywater recharge the groundwater. We suggest that you leave it at the Tier 1 requirement of "not surface, pond, or runoff" and remove the impractical "evapotranspiration rates" and groundwater discharge requirements. For Tiers 2 and 3 they are also unnecessary since with 10/10 mg/L you have already required much higher treatment than municipal wastewater treatment plants (and you are dealing with much less disruptive distributed systems) and you have monitoring.	39
Next on my list of concerns is how as a home owner am I suppose to know when "evapotranspiration rates exceed natural precipitation"? I have a degree in biology with a botany focus and I'm not at all clear on how exactly this is going to be calculated in any coherent way on my property. I'm enough of a geek I might find it interesting to calculate evapotranspiration of the various applicable areas of my yard, but it seems like a rather odd hobby to mandate. Also, given the high percentages of impervious surfaces in the metro areas, our soils are absorbing much less water than historically, why have regulations directly inhibiting a safe mechanism for recharging soil water storage?	43

126 **Comment Summary:** **OAR 340-053-0090 (1)(e)(A) Irrigation sites must be located on stable geologic formations not subject to flooding or excessive runoff from adjacent land. Does this mean that a flood plain site cannot use graywater during the irrigation season? Why?**

DEQ Response: The intent of this language is to limit graywater irrigation from occurring on sites where excess water could destabilize the landscape, cause erosion, or be carried to waters of the state. Because supplemental irrigation may be required in flood plains during dry portions of the year, DEQ has amended the language to indicate that this restriction applies at the time of irrigation. Other limitations such as the depth to groundwater and limits to runoff still apply.

Original Comment	Commenter:

- 340-053-0090 (1)(e)(A)Irrigation sites must be located on stable geologic formations not subject to flooding or excessive runoff from adjacent land. Does this mean that a flood plain site cannot use greywater during the irrigation season? why? 24

127 **Comment Summary:** **OAR 340-053-0090 (1)(e)(D) At the time of irrigation, the minimum separation between the point of graywater discharge and the depth to groundwater must be four feet. Studies show that septic tank effluent discharged to soil absorption systems is cleansed within 2 feet of the trench. graywater is much cleaner than STE. Perhaps the rule should use a minimum separation distance of 2 feet or allow a soils evaluation. And what about areas where there are layers that limit effective soil depth?**

DEQ Response: The proposed rules include separation distances between the point of graywater release for irrigation and groundwater to protect groundwater from adverse impacts from wastewater. Although DEQ agrees that most surface soils are biologically active and can effectively treat graywater and other wastes, the effectiveness of soil treatment system depends on a number factors, which would require site specific evaluations as well as on-going monitoring to demonstrate performance. DEQ agrees that other limiting soil layers, such as bed rock or hard pan, may reduce graywater uptake by plants and treatment by the soil, however, OAR 340-053-0090(1)(e)(F) requires the graywater system to be sized to the capacity of the soil and vegetation receiving irrigation, which should account for soil limiting layers.

Although DEQ is aware of studies that show septic tank effluent can be effectively treated by various depths of soil, the 4-feet separation distance was recommended by the DEQ Graywater Advisory Committee as reasonable for protecting groundwater and is consistent with similar separation distances in other regulations.

No changes have been made to the proposed rules in response to these comments.

Original Comment	Commenter:
340-053-0090 section 1, E site management section D • Current ruling: Currently, Graywater cannot be discharged on lands that have groundwater depth less than 4 ft at time of discharge. • Argument: The active part of soils that will neutralize and biologically degrade graywater is the top 6 inches. Having a requirement of a minimum of 4 feet before hitting groundwater makes development of homes that meet the LBC 2.0 near streams or lakes impossible, as groundwater is often much closer to the surface. This requirement does not site science for its justification and appears overly conservative. • Request: That soil science is used to determine the minimum depth before ground water is reached.	14
- 340-053-0090 (1)(e)(D) At the time of irrigation, the minimum separation between the point of graywater discharge and the depth to groundwater must be four feet. Studies show that septic tank effluent discharged to soil absorption systems is cleansed within 2' of the trench. Greywater is much cleaner than STE. The rule might say the separation distance should be 2'. And what about areas where there are layers that limit effective soil depth?	24

Graywater Quality Standards for Reuse - Type 1 graywater

Beneficial purposes OAR 340-053-0090(2)(a)

64 **Comment Summary:** **Irrigation of brownfield and lands with contaminated soils (per DEQ**

databases) should be prohibited [0090(1)(e)(G)].

DEQ Response: If a brownfield or land with contaminated soils meets the irrigation site management criteria in OAR 340-053-0090(1)(e) and would be otherwise irrigated with potable water to establish or maintain vegetation, DEQ believes graywater should not be excluded as a water source.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Clarify that any hazardous chemical or waste disposal shall not be allowed regardless of source [0080(8)(c)]. Similarly, irrigation of brownfield and lands with contaminated soils (per DEQ databases) should be prohibited []0090(1)(e)(G)].	46

92 **Comment Summary:** **The rule needs to address the end use of fruits and vegetables grown in type 1 and 2 graywater reuse.**

I believe if the graywater reuse is for the individual home then any vegetables and fruits produced using the graywater should only be for home use. They should not be able to be sold at farmers markets or markets/restaurants. If they are sold to the public or donated to food banks and shelters then a certificate or placard should be displayed informing the public the fruits and vegetables were grown using recycled graywater.

Some people without direct supervision will grow vegetables in untreated graywater and they will sell to the public. If a food borne outbreak occurs then health officials need to know that the vegetables may be the cause either by consumption, or hand contact and cross contamination.

DEQ Response: The proposed rules limit the irrigation of Type 1 and Type 2 graywater to edible food crops where the edible portion of the crop does not come in contact with the graywater. A 2009 study by McGill University found no difference in fecal coliform or fecal streptococci contamination of crops irrigated with tap water, untreated graywater, or treated graywater. However, because of limited data available, the DEQ Graywater Advisory Committee recommended that graywater irrigation be allowed only on crops where the edible portion of the crop does not touch the graywater, and thus reducing the risk to public health. It is beyond the scope of this rulemaking to limit individuals who could consume crops irrigated with graywater.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
The rule needs to address the end use of fruits and vegetables grown in type 1 and 2 grey water reuse. I believe if the grey water reuse is for the individual home then any vegetables and fruits produced using the grey water should only be for home use. They should not be able to be sold at farmers markets or markets/restaurants. If they are sold to the public or donated to food banks and shelters then a certificate or placard should be displayed informing the public the fruits and vegetables were grown using recycled grey water.	3

Some people without direct supervision will grow vegetables in untreated grey water and they will sell to the public. If a food borne outbreak occurs then health officials need to know that the vegetables may be the cause either by consumption, or hand contact and cross contamination.

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121 **Comment Summary:** **OAR 340-053-0090(2)(a)(C) and (D) allow subsurface irrigation of green roofs, and subsurface irrigation of compost. Subsurface irrigation of residential green roofs and compost piles seems difficult to achieve. Compost piles are ever changing and mixing. How would it even be possible? These are great places for surface dispersal.**

DEQ Response: The beneficial purposes for Type 1 graywater all relate to providing supplemental water when natural precipitation is insufficient. The proposed rules do not prescribe how graywater is delivered to these end uses, only what beneficial reuse activities are appropriate for the Type of graywater produced. The DEQ Graywater Advisory Committee recommended that all Type 1 graywater be released with at least a 2-inch cover to limit human contact with graywater and thus reduce potential public health risks.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
-340-053-0090(2)(a)(C,D) Subsurface irrigation of green roofs; and Subsurface irrigation of compost Subsurface irrigation of residential green roofs and compost piles seems ridiculous on its face. Compost piles are ever changing and mixing. How would it even be possible? These are great places for surface dispersal.	24

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129 **Comment Summary:** **OAR 340-053-0090(2)(a): The irrigation of eco-roofs presents a conflict with the prohibition of discharge of graywater to stormwater management facilities. Green roofs are primarily utilized for stormwater. Practices should consider drip or soaker hose irrigation (since most green roofs have limited or no human access) to allow the full 4 inches or more layer of soil to treat the graywater prior to disposal into a green roof if stormwater is also utilized. Subsurface irrigation of vegetative roof systems can have clogging problems with tap water and problems are anticipated with graywater reuse.**

DEQ Response: DEQ agrees that many vegetated roofs are used for stormwater management. However, some roofs may be gardened for other purposes such as aesthetics, the cultivation of fruits and vegetable, or energy management (i.e., reducing excessive heating or cooling). The proposed rules allow graywater irrigation on vegetated roofs used for these other purposes. The proposed rules have also be written to avoid being over prescriptive, such as requiring drip or soaker hose irrigation. The proposed rules have been clarified that irrigation is allowed on green roofs that do not discharge to stormwater systems.

Original Comment	Commenter:
340-053-0090 2 (a) The irrigation of eco-roofs presents a conflict with the prohibition of discharge of Graywater to stormwater management facilities. Green roofs are primarily utilized for stormwater. Practices should consider drip or soaker hose irrigation (since most green roofs have limited or no human access) to allow the full 4 inches or more layer of soil to treat the Graywater prior to disposal into a green roof if stormwater is also utilized. Subsurface irrigation of vegetative roof systems can have clogging problems with tap water and problems are anticipated with Graywater reuse.	38

The rules indicate a conflict between the permitted vegetated roof irrigation and the prohibition on discharging to stormwater management facilities. Vegetated roofs are primarily stormwater management facilities. Because of their routinely shallow depths, there is insufficient treatment of sub-surface irrigation prior to disposal into a stormwater system, and sub-surface vegetated roof irrigation should not be allowed. If the desire is to require a reuse that includes pumping to a rooftop, then at a minimum allow for surface irrigation where surface plantings the full depth of soil can be used to filter greywater prior to discharge to stormwater systems. 46

Graywater Quality Standards for Reuse - Type 1 graywater

Access and exposure OAR 340-053-0090(2)(b)

124 **Comment Summary:** **OAR 340-053-0090(2)(b) Two inches of cover over a subsurface irrigation system does not leave much room for error. Six inches seems more reasonable.**

DEQ Response: The DEQ Graywater Advisory Committee agreed that some minimum cover was required for subsurface irrigation. Two inches of cover was determined to provide some protection against human contact with Type 1 graywater while giving the homeowner flexibility to locate and move drip irrigation systems buried under the mulch.

No changes to the proposed rules were made in response to this comment.

Original Comment — Commenter:

OAR 340-053-0090 41

(2)(b) Two inches of cover over a subsurface irrigation system does not leave much room for error. Six inches seems more reasonable.

Graywater Quality Standards for Reuse - Type 1 graywater

Site management OAR 340-053-0090(2)(c)

125 **Comment Summary:** **Create a system which allows for storage of the water during the rainy months on [the west] side of the Cascades so that water can be used for watering lawns and gardens all summer. Your current rules make it unlikely that the average home owner will engage in this. I know that there are inexpensive solutions to make it safe to do so.**

DEQ Response: Because Type 1 graywater contains unstabilized organic material that can putrefy and consume all available oxygen within a short period of time as well as encourage the growth of bacteria and other organisms, the rules limit storage to 24 hours or less. This condition is intended to prohibit the use of Type 1 graywater with objectionable properties (i.e., malodors) and that could potentially cause failure of the graywater systems, such as system plugging. No storage restrictions are placed on Type 2 or Type 3 graywater.

No changes were made to the proposed rules in response to this comment.

Original Comment — Commenter:

Two - create a system which allows for storage of the water during the rainy months on this side of the Cascades. That water can be used for watering lawns and gardens all summer. Your current rules make it unlikely that the average home owner will engage in this. I know that there are inexpensive solutions to make it safe to do so. 20

Graywater Quality Standards for Reuse - Type 2 graywater

Beneficial purposes OAR 340-053-0090(3)(a)

122 **Comment Summary:** **The proposed rules prohibit the use of Type 1 or 2 graywater for use on root crops. There is no clear evidence for this recommendation. Food crops are commonly irrigated with water of non-potable quality (e.g., cattle and wildlife wander in and out of streams, fish, birds, reptiles and amphibians that swim water). It's legal to use murky pond water from rainwater harvesting for watering vegetable gardens, but the proposed rules limit the use of relatively clean shower, washer and sink water. I understand the risks of watering crops with untreated sources of water, but for crops grown for personal use the risk of disease transmission is low. For large commercial operations or people who are selling/distributing their produce, the rules should require testing or treating the water, but the current proposed rules are onerous for the small household users who will personally consume the food they grow. I think the recommendation should be changed to allow watering of root crops with Tier 1 and 2 gray water systems with the caveat that food should be washed or cooked before eating.**

DEQ Response: The proposed rules limit the irrigation of Type 1 and Type 2 graywater to edible food crops where the edible portion of the crop does not come in contact with the graywater. Although a 2009 study by McGill University found no difference in fecal coliform or fecal streptococci contamination of crops irrigated with tap water, untreated graywater, or treated graywater, very few other studies are available on this issue. Because of limited data available, the DEQ Graywater Advisory Committee recommended that graywater irrigation be allowed only on crops where the edible portion of the crop does not touch the graywater. The proposed rules are less restrictive on irrigating food crops than most other states, which typically prohibit any graywater irrigation of food crops except for fruit and nut trees where the fruits or nuts are not harvested off the ground.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Concern #3. Lack of science behind using gray water for food crops and sprinkling. Currently your recommendations prohibit the use of Tier 1 or 2 water for sprinkling or for use on root crops. First of all I have done a huge amount of reading on this and there is no clear evidence for this recommendation, heck we use irrigation water all the time that cattle and wildlife wander in and out of not to speak of the fish, birds, reptiles and amphibians that swim in the water. Its legal for me to use my murky pond water from my rain collection for watering my vegetable garden but you are proposing the relatively clean shower, washer and sink water is not safe for these purposes. I have a degree in infectious diseases and I understand the risks of watering crops with untreated sources of water but clearly for personal use the risks are low. Just like hand hygiene and meat hygiene, people with gray water systems that choose to water (or sprinkle) their vegetable gardens should wash or cook their harvest regardless of whether it comes from their yard, the farmers market or a commercial supermarket. This is the only way to consistently prevent food borne illnesses. Clearly, for large commercial operations or people who are selling/distributing their produce, the recommendation should be for testing or treating the water but the current recommendations are onerous for the small household users who will personally consume the food they grow. I think the recommendation should be changed to allow watering of root crops and of sprinkling or Tier 1 and 2 gray water systems with the caveat that food should	13

be washed or cooked before eating.

340-053-0090 section 3 • Current ruling: Currently, type 2 gray water can not touch the edible parts of plants, including root crops • Argument: Requiring a type 3 graywater treatment for sprinkler and to water root crops creates a prohibitively expensive watering system to water root crops and plants. This restriction seems overly conservative and is not supported by science nor practicality, as irrigation of commercial foods are allowed to use water from much more polluted sources of water, such as streams and lakes. • Request: Create a rule that allow root crops and edible parts of plant to be watered via sprinkler with type 2 gray water system. Harvesting of crops can be done within 1 day of watering but must be washed before eating. Water quality rules for irrigation follow those established for watering crops using stream and lakes.	14
No sprinkler use for the Type 2 water puts us into a Type 3 water system, which is quite a bit more expensive for the permits, and it looks as though the disinfection system is going to be … onerous. And we request that the Type 2 water be allowed for both sprinkler and for touching edible plants within three days of harvesting. So we have plans for growing potatoes and beets and a lot of root crops which are going to be using the graywater, so we see the fact that you can't use Type 2 for edible plants [to be] an issue. So we request that there's ether very good science behind the fact that you should not use Type 2 for edible plants, or root crops essentially, and that sprinklers cannot be use, or that that be allowed for Type 2.	14
The other what David Burdick was also commenting on: the use of Type 2 graywater for edible plants. I see the intent behind that is to not expose edible plants to graywater which may have various contaminants, biological or otherwise, for human consumption. If there no scientific evidence, can it follow the same 3-day prohibition against watering with graywater before that? The part I would like to add is that I see a fairly distinct difference between personal consumption of those edible vegetables and single-family or multi-family residential and the use of commercial production, such as small-scale farms. And, if there could be a prohibition against the use of Type 2 graywater for commercial produced edible plants, which I would very much be in favor of. But for residential use where it is all for personal consumption, really the sickness or the consequences pretty much affects the homeowners and their guests.	16

131 **Comment Summary:** **Allow Type 2 graywater to be used with sprinkler irrigation.**

DEQ Response: Numerous studies reviewed by the DEQ Graywater Advisory Committee showed that graywater contains measurable concentrations of fecal coliforms and fecal streptococci. These types of bacteria indicate that the graywater may contain bacteria, viruses, or other human-disease causing organisms. Because concerns with the transmission of disease causing organisms in wind-carried mist or aerosols, the DEQ Graywater Advisory Committee recommended allowing sprinkler irrigation with only Type 3 graywater, which has been disinfected.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
Concern #3. Lack of science behind using gray water for food crops and sprinkling. Currently your recommendations prohibit the use of Tier 1 or 2 water for sprinkling or for use on root crops. First of all I have done a huge amount of reading on this and there is no clear evidence for this recommendation, heck we use irrigation water all the time that cattle and wildlife wander in and out of not to speak of the fish, birds, reptiles and amphibians that swim in the water. Its legal for me to use my murky pond water from my rain collection for watering my vegetable garden but you are proposing the relatively clean shower, washer and sink water is not safe for these purposes. I have a degree in infectious diseases and I	13

understand the risks of watering crops with untreated sources of water but clearly for personal use the risks are low. Just like hand hygiene and meat hygiene, people with gray water systems that choose to water (or sprinkle) their vegetable gardens should wash or cook their harvest regardless of whether it comes from their yard, the farmers market or a commercial supermarket. This is the only way to consistently prevent food borne illnesses. Clearly, for large commercial operations or people who are selling/distributing their produce, the recommendation should be for testing or treating the water but the current recommendations are onerous for the small household users who will personally consume the food they grow. I think the recommendation should be changed to allow watering of root crops and of sprinkling or Tier 1 and 2 gray water systems with the caveat that food should be washed or cooked before eating.

340-053-0090 section 3 14

- Current ruling: Currently, type 2 gray water can not touch the edible parts of plants, including root crops
- Argument: Requiring a type 3 graywater treatment for sprinkler and to water root crops creates a prohibitively expensive watering system to water root crops and plants. This restriction seems overly conservative and is not supported by science nor practicality, as irrigation of commercial foods are allowed to use water from much more polluted sources of water, such as streams and lakes.
- Request: Create a rule that allow root crops and edible parts of plant to be watered via sprinkler with type 2 gray water system. Harvesting of crops can be done within 1 day of watering but must be washed before eating. Water quality rules for irrigation follow those established for watering crops using stream and lakes.

No sprinkler use for the Type 2 water puts us into a Type 3 water system, which is quite a bit more expensive for the permits, and it looks as though the disinfection system is going to be … onerous. And we request that the Type 2 water be allowed for both sprinkler and for touching edible plants within three days of harvesting. So we have plans for growing potatoes and beets and a lot of root crops which are going to be using the graywater, so we see the fact that you can't use Type 2 for edible plants [to be] an issue. So we request that there's ether very good science behind the fact that you should not use Type 2 for edible plants, or root crops essentially, and that sprinklers cannot be use, or that that be allowed for Type 2. 14

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151 **Comment Summary:** **I'm planning on putting my graywater into a swale. I recycle all my rainwater into a pond and I use a pond pump to irrigate from the pond. I'd like to run my graywater swale right into the pond as well. The rules need to account for that in a better detail.**

DEQ Response: The proposed rules prohibit the discharge of graywater into stormwater management systems, such as swales designed to infiltration stormwater. However, Type 2 and Type 3 graywater may be used in landscape ponds not intended for human contact. The proposed rules do not limit the mixing of rainwater and graywater in a landscape pond, provided the pond does not discharge to surface water, groundwater, or a stormwater system. The proposed rules would allow irrigation from the landscape pond; however, irrigation would be limited to surface or drip irrigation.

No changes were made to the proposed rules in response to this comment.

Original Comment Commenter:

I actually have a little trouble with the whole Tier 1, Tier 2 concept as well. I'm planning on putting my stuff into a swale. I use a pond pump right now, I recycle all my rainwater into a pond and I use a pond pump to irrigate. Essentially, I'd like to run my swale right into the pond as well, and I think your permits right now....and that's a system I think a lot of people are going to choose to do that's above the water and soil water storage—especially in the 13

rural areas, and I think (I will be happy to write that in more detail), but I think we need to account for that in a little better detail.

Graywater Quality Standards for Reuse - Type 2 graywater Treatment OAR 340-053-0090(3)(b)

94 **Comment Summary:** **For kitchen sink re-use, the $500+ fee and annual testing is prohibitive and should be implemented only in areas with high groundwater or runoff concerns.**

DEQ Response: Graywater originating from kitchen sinks may be used provided the wastewater passes through a physical process to remove a portion of the grease, floatable and settleable solids potentially present in graywater originating from the kitchen sink. Graywater from kitchen sinks may be used under a Tier 1 permit, which has a proposed fee of $40/year. No annual testing is required for the lowest quality graywater, Type 1.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
For kitchen sink re-use, the $500+ fee and annual testing is prohibitive and should be implemented only in areas with high groundwater or runoff concerns.	10

Construction Standards General OAR 340-053-0100

133 **Comment Summary:** **I like to see the rules allow do-it-yourselfers to install their own systems, to allow constructed wetlands to filter the more heavily-soiled graywater, and to allow them to use re-used, re-purposed, scrap, and even natural materials where possible, rather than requiring folks to use all-new plastic materials for their graywater systems, with attendant toxic factory byproducts and air pollution in the manufacture of new plastic pipes, etc.**

DEQ Response: The proposed rules allow individuals to construct and install their own graywater reuse and disposal systems. The proposed rules also allow the use of performance-based treatment systems, such as constructed wetlands, under a Tier 2 permit. The rules do not prescribe the type or source of materials used in the construction of a graywater reuse and disposal system. However, OAR 340-053-0100(1) requires the plumbing associated with a graywater collection system inside a structure to meet Oregon plumbing code and OAR 340-053-0110(6) requires the distribution system components (i.e., pipes, valves, etc.) to be appropriate for the intended use, such as transmitting wastewater. The intent of this requirement is to avoid the use of piping and other plumbing components that would potentially fail and result in the unintentional release of graywater, potentially risking public health and the environment. Information on green-building materials is available on the internet to help identify non-toxic, more environmentally-friendly construction materials.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
I am in support of greywater use, for both landscaping and vegetable garden irrigation,	9

although I understand you're not ready to permit the latter. I would, however, like to encourage you to allow do-it-yourselfers to install their own systems, to allow constructed wetlands to filter the more heavily-soiled greywater, and to allow them to use re-used, re-purposed, scrap, and even natural materials where possible, rather than requiring folks to use all-new plastic materials for their greywater systems, with attendant toxic factory byproducts and air pollution in the manufacture of new plastic pipes, etc.

134 **Comment Summary:** **Who is going to be authorized to install these systems? Will they need to be trained and certified? Certified by who?**

DEQ Response: The proposed rules do not explicitly identify persons authorized to install graywater reuse and disposal systems. Graywater collection systems will generally require the installation or modification of plumbing and would require an appropriate person authorized under the plumbing code. Graywater treatment systems installed in a structure would likely require an appropriate person identified under the plumbing code. The rules do not identify persons authorized to install graywater treatment and distribution systems outside a structure. DEQ is not aware of any mandatory training or certification program for graywater installations in other states.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Who is going to be authorized to install these systems? Type 2-3 Will they need to be trained and certified? Certified by who?	3

164 **Comment Summary:** **Add the Builder's Greywater Guide: Installation of graywater Systems in New Construction and Remodeling, by Art Ludwig, to your collection of resources. I think you will find it helpful.**

DEQ Response: This reference was discussed during the DEQ Graywater Advisory Committee process. DEQ will use various resources to assist with program implementation.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Add the Builder's Greywater Guide: Installation of Greywater Systems in New Construction and Remodeling, by Art Ludwig, to your collection of resources. I think you will find it helpful.	47

Construction Standards

Graywater collection system — OAR 340-053-0100(1)

135 **Comment Summary:** **340-053-0100(1)(a): All pipes, valves and other plumbing appurtenances of the graywater collection system must comply with the requirements of the Oregon Plumbing Specialty Code. This would do away with any innovative distribution system fittings that are in use in other areas**

DEQ Response: OAR 340-053-0110(1) requires any plumbing work associated with the graywater collection system to meet current Oregon plumbing code. This section of the proposed rules would have no effect on "distribution system" fittings.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
340-053-0100 (1)(a)All pipes, valves and other plumbing appurtenances of the graywater collection system must comply with the requirements of the Oregon Plumbing Specialty Code. This would do away with any innovative distribution system fittings that are in use in other areas	24

175 **Comment Summary:** **OAR 340-053-0100(1)(b) Sign all reuse fixtures, not just non-residential. Washing machines especially need a diversion sign for diapers or other accidents. Consider apartment building laundry rooms. All operators need to be educated regarding the use of the system and importance of the diversion valve.**

DEQ Response: The DEQ Graywater Advisory Committee recommended placing informational signs only at fixtures from which graywater is generated in non-residential systems. Occupants of residential structures are more likely to be educated on the presence and use of a graywater reuse and disposal systems. Furthermore, placing of signs at every graywater generating fixture in a residential structure would be onerous on the property owner and would be difficult to enforce. DEQ agrees that signing some fixtures in some multi-residential structures may be appropriate, such as placing signs in shared laundry facilities or kitchens. Since most multi-family structures will likely be permitted under a Tier 3 individual graywater reuse and disposal system permit, the circumstances of each situation can be evaluated and the conditions necessary to protect public health and the environment placed in the permit.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
OAR 340-053-0100(1)(b) Sign all reuse fixtures, not just non-residential. Washing machines especially need a diversion sign for diapers or other accidents. Consider apartment building laundry rooms. All operators need to be educated regarding the use of the system and importance of the diversion valve.	41

Construction Standards

Diversion valve OAR 340-053-0100(3)

137 **Comment Summary:** **Consider removing the requirement for a diversion valve and allow systems to be designed with alternate approaches. For example, a system can be designed with overflows that discharge to either an existing septic system or existing domestic sewer. As another example, excess graywater can be captured in a holding tank that could then be pumped and hauled to a wastewater treatment facility.**

DEQ Response: The use of a diversion valve is necessary to divert graywater between the reuse and disposal systems for times when graywater cannot be reused, such as following the washing of soiled diapers or clothing, when soils are saturated or frozen, when the graywater reuse system is overloaded, or when the graywater reuse system is being serviced. The system design may incorporate alternate methods of managing excess graywater such directing overflow to a wastewater disposal system. Holding tanks may also be included in a system design, but require additional consideration under the onsite rules in OAR 340-071.

No changes were made to the proposed rules in response to these comments.

Original Comment	Commenter:
340-053-0100 section 3 • Current ruling: requires the use of a diversion valve • Argument. A diversion valve creates a disincentive to manage gray water effectively within the living building challenge home and vastly increases the cost of building such a home. Alternative means can be required if graywater turns septic, such as piping to a tanker truck that are readily available and designed to pump out holding tanks. • Request: That the need to hook up to municipal sewage treatment or septic systems are not require for a living building challenge development, provided that access to tanks can be accessed by tanker truck in the event the gray water storage turns septic or exceeds graywater standards.	14
Another issue is the diversion valve requirement. The systems I'm devising are for use is places that already have a tie to either an existing septic system or existing domestic sewer, at which overflow capability is built into the system. If it is overburdened, it dumps into the existing domestic sewer system. I encourage you to have something written into the rules along those lines.	17
In Section 340-053-0100 section 3, requiring a diversion valve that leads back to a sewer or septic system is unnecessary and counterproductive. One of the main benefits of these systems is that they provide a practical, safe and economical alternative to standard septic systems and requiring a diversion valve to a standard septic negates the economic benefits of greywater entirely, as septic and leachfields must then be sized to accommodate the entire greywater flow if a diversion valve is included. This is excessive and unnecessary and I strongly encourage you to remove this requirement.	45

Construction Standards

Cross connection control

OAR 340-053-0100(4)

140 **Comment Summary:** **The proposed rules are not adequate to protect community water supplies and it the responsibility of the community water system to regulate cross-connections with potable water supplies. DEQ is not the appropriate agency to authorize a cross-connection with a potable water system. It is recommended that the cross-connection language be consistent with existing OARs and the Oregon Plumbing Specialty Code. We propose the following language: "A person may not install a graywater reuse and disposal system unless authorized in writing or via permit by the community water system having jurisdiction. As mandated by OAR 333-061-0070 an approved backflow prevention assembly will be required on the service connection to the premise where a graywater system is installed."**

DEQ Response: The language has been updated to clarify that direct cross-connections with potable water systems are not allowed. If potable water must be supplied to the graywater reuse and disposal system, which is part of the wastewater system, the connection must be authorized by DEQ in writing (i.e., in a permit). The updated language also requires any cross-connection to be permitted by the community water system that has jurisdiction.

Original Comment	Commenter:
Inappropriately installed graywater reuse systems within structures carries a risk of cross-connection with the potable water system. We note that the subject rules do not apply to such systems, but take this opportunity to mention this concern. The cross-connection may affect water system users beyond the graywater reuse site.	41

The proposed rules do not include a notification provision to water providers when graywater systems are installed in their jurisdictions, thus not allowing for cross connection concerns to be addressed from the purveyor perspective. DEQ should require graywater permit applicants to get permits from their community water system before applying for a graywater permit with DEQ.	46
Change 340-053-0100(4) to be in line with the Oregon Plumbing Specialty Code 603.3.5. a. The rules should delineate what types of material instead referring to the plumbing code. Contact Peter DeMarco - pete.demarco@iapmo.org for more information about rules from IAPMO's Green Plumbing and Mechanical Code Supplement.	46
OAR 333-061-0070 "Cross Connection Control Requirements" section (16) states, "All approved backflow prevention assemblies subject to these rules shall be installed in accordance with OAR 333-061-0070 and the Oregon Plumbing Specialty Code." The Oregon Plumbing Specialty Code, 603.3.5 (2008 Edition) states that a "Direct connection between potable water piping and sewer-connected wastes shall not exist under any condition with or without backflow protection". DEQ should verify that the draft graywater rules are in accordance with the Oregon Specialty Plumbing Code.	46
The proposed rule allows DEQ to authorize a cross-connection. This is inconsistent with OAR 333-061-0070 "Cross Connection Control Requirements" which places responsibility for developing and overseeing cross connection programs in the hands of community water systems. Given existing rules, DEQ is not the appropriate agency to authorize a cross-connection with a potable water system. a. The city recommends that DEQ update the cross-connection requirement to be consistent with existing OARs. We propose the following language: "A person may not install a graywater reuse and disposal system unless authorized in writing or via permit by the community water system having jurisdiction. As mandate by OAR 333-061-0070 an approved backflow prevention assembly will be required on the service connection to the premise where a graywater system is installed."	46
Section 340-053-0100 (4) Cross Connection Control is not adequate to protect municipal drinking water supplies. a. Whenever any graywater system is planned for installation the rule should require backflow protection. Graywater systems pose a cross-connection risk to the potable water supply. The ability to be sprayed (which means the systems can be pressurized) and the provision that these water may be stored in large quantities on site above or below ground increase the risk.	46

Construction Standards

Storage and surge tanks — OAR 340-053-0100(5)

145 **Comment Summary:** **340-053-0100 (5) requires storage and surge tanks to be sized to accommodate peak graywater flow; “peak graywater flow” is not defined. If it means total daily graywater volume, i.e., 216 gallons for a 2 bedroom home, this is an impractical requirement.**

DEQ Response: The proposed rules do not specify a minimum size for storage or surge tanks. Peak flow is not the same as total daily graywater volume. The proposed rules allow flexibility on the part of the person designing the graywater reuse and disposal system to determine the appropriate sizing of a storage or surge tank. The proposed rules do, however, require that storage or surge tanks be equipped with an overflow drain to direct excess graywater to an approved wastewater disposal system.

No changes were made to the proposed rules in response to this comment.

Original Comment — Commenter:

340-053-0100 (5)Storage and surge tanks. (a)Sized to accommodate peak graywater flow; "peak greywater flow" is not defined. If it means daily flow- a minimum surge tank size of 214 gallons for a 2 bedroom home. If, as in the onsite sewage world it means 2X average flow. IF that is the case it is Utter Nonsense.	24

Construction Standards

Distribution system OAR 340-053-0100(6)

146 **Comment Summary:** **Irrigation of an ecoroof will probably require the use of a pump. Art Ludwig from Oasis Design does not suggest using pumps for untreated graywater because they can clog up very easily. I suggest going over what Art Ludwig has to say about the use of pumps for totally unfiltered graywater.**

DEQ Response: The proposed rules allow flexibility in the design of graywater reuse and disposal systems. DEQ has read Art Ludwig's comments on the use of pumps and agrees that pumps may not be appropriate for untreated graywater. However, the proposed rules allow graywater distribution systems to be designed as appropriate for a specific installation. For example, it may be possible to irrigate a roof with a gravity system in a multi-storey building or on a hillside site.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
If I [were] to use a Type 1 graywater for irrigating an ecoroof, I'd probably have to use a pump to get up there and Art Ludwig does not suggest using pumps for graywater—that sometimes they clog up very easily and there's another difficulty that I can't think of now. I suggest, at least, going over what Art Ludwig has to say about the use of pumps for totally unfiltered graywater.	12

Construction Standards

Irrigation system OAR 340-053-0100(7)

147 **Comment Summary:** **The use of the term "irrigation system" in 340-053-0100 (7) is not applicable because a graywater reuse system without sufficient volume (in most cases) isn't an irrigation system. Irrigation systems can only be installed by licensees of the landscape contractors board pursuant to ORS 671.530**

DEQ Response: DEQ is not aware of any statutory definitions of "irrigation" or "irrigation system" that would limit use of these terms in the proposed rules. As defined in the proposed rules, irrigation means the application of water to soil, mulch, or compost usually to supplement precipitation and supply moisture for the growth of vegetation or for the production of compost. An irrigation system would be the pipes, pumps, valves, and other materials necessary to deliver the graywater for irrigation. It is beyond the scope of this rulemaking to establish requirements on who can or cannot install a graywater irrigation system. ORS 671.530 requires landscape construction professionals that install irrigation systems to be licensed. However, ORS 671.540(g) specifies that the owner of a property conducting landscaping work on his or her own property is not subject to OAR 371.530.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:

340-053-0100 (7)The use of the term “irrigation system” is not applicable here as this is a greywater reuse system without sufficient volume (in most cases) to be considered irrigation. Irrigation systems can only be installed by licensees of the landscape contractors board pursuant to ORS 671.530 — 24

148 **Comment Summary:** **Section 340-053-0100(6) Distribution System should clarify labeling of piping. The rules exclude irrigation piping and components from labeling requirements. Given the possibility of confusion in the future and systems cross connected by accident if the irrigation piping is not clear marked, irrigation components should also be labeled. However, the rule should prohibit graywater irrigation piping systems from using purple pipe to avoid confusion with recycled water piping, which is required to be colored purple.**

DEQ Response: DEQ agrees that irrigation systems should be labelled appropriately as containing non-potable water. However, in Oregon, purple pipe is not an indication of a defined water quality and may be found in applications carrying anything from non-disinfected recycled water to Class A recycled water. Because purple pipe is commonly used to indicate non-potable water, including recycled water and harvested rainwater, the rules do not prohibit the use of purple pipe for identifying graywater distribution and irrigation systems.

DEQ has updated the language in the proposed rules to specify that irrigation components must be appropriately identified as containing non-potable water.

Original Comment	Commenter:
Section 340-053-0100 (6) Distribution System should clarify labeling of piping. a. The rules exclude irrigation piping and components from labeling criteria, such that they aren't required to be labeled "Caution-Nonpotable Water-Not Safe to Drink". Given the possibility of confusion in the future and systems cross connected by accident if the irrigation piping is not clear marked, irrigation components should also be labeled. b. The rule should indicate that graywater irrigation piping systems should not be colored purple to avoid confusion with Reclaimed Water piping which is required to be colored purple.	46

Construction Standards

Abandonment — OAR 340-053-0100(8)

170 **Comment Summary:** **If a graywater reuse and disposal system is abandoned, I think you should lock it out versus having to totally remove it.**

DEQ Response: The proposed rules direct someone abandoning a graywater reuse and disposal system to remove the diversion device. Although locking a diversion device may have the same immediate effect, removing the system prevents against accidental use of the system.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Bringing that up, when you sell a house, it’s definitely going to be a detriment if you have a graywater system. Somebody that’s buying your house—they’re not only buying a house, but they’re buying fees for infinity as long as they own the house. So to me it’s a discouragement for selling your house as well. It’s going to make it a detriment for that. So we want to encourage not that it would be a detriment. So again that’s why you want a plan and you want a manual so that you can pass it along. If it is abandoned, I think you should	28

lock it out versus having to totally remove it—and that makes the most sense to me.

Permitting
General OAR 340-053-0110

149 **Comment Summary:** **Current technology provides us with the means to "clean and treat" graywater to potable standards. It is much safer to encourage the cleanest treatment of graywater because there is much less likelihood of unforeseen complications and potential for human contact or contamination. The current tiers are counter-productive, by allowing the reuse of the least treated graywater reuse under the easiest, cheapest and least onerous of the permits. The tiers and costs of the permits need to be reversed. The most treated graywater should be the easiest and least expensive option from a certification/fee standpoint. The treated clean water is also the most usable water for drip irrigation which is highly sensitive to particulates and active bacteria. Tier 1 water is not treated and will "gum up" a drip system the first time and the system will be defunct and unusable thereafter. I realize some people may water with hoses- but even that has limited safety in case someone inadvertently drinks from the hose and it is completely manual which makes the reuse of graywater less likely. Please promote the most responsible reuse of "fully treated" graywater.**

DEQ Response: The fees associated with graywater reuse and disposal system permits are commensurate with the level of effort required to issue the permit and support compliance with the rules. Tier 1 permits require a person to comply with simple management practices that are designed to protect public health and the environment. Tier 3 permits allow the use of graywater that has been treated to reduce risks to public health and the environment. Graywater treatment requires DEQ to review and approve new permits as well as review compliance reports and data.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Current technology provides us with the means to "clean and treat" graywater to potable standards. It is much safer to encourage the cleanest treatment of graywater because there is much less likelihood of unforeseen complications and potential for human contact or contamination. The current tiers are counter- productive putting the most risky- highest hazard method of graywater reuse as the easiest, cheapest and least onerous of the options. The tiers and costs need to be reversed. The most treated graywater should be the easiest and least expensive option from a certification/fee standpoint. The treated clean water is also the most usable water for drip irrigation which is highly sensitive to particulates and active bacteria. Tier 1 water is not treated and will "gum up" a drip system the first time and the system will be defunct and unusable thereafter. I realize some people may water with hoses- but even that has limited safety in case someone inadvertently drinks from the hose and it is completely manual which makes the reuse of graywater less likely. Please promote the most responsible reuse of "fully treated" graywater.	23

150 **Comment Summary:** **Inspection of installed systems and enforcement guidelines are not provided in the rule. Graywater reuse systems that aren't inspected or enforced on will be more likely to illicitly discharge into our public stormwater systems**

and could impact drinking water sources. Newly installed systems should be inspected. Enforcement should be provided for improperly used or maintained systems, without burden being placed on the municipality, county, or special district.

DEQ Response: The DEQ Graywater Advisory Committee recommended against requiring inspections of most graywater reuse and disposal systems, except where currently required under existing codes (e.g., plumbing code). Consequently, the proposed rules do not require a DEQ inspection following installation of a Tier 1 graywater reuse and disposal system. However, inspections may be required by local building officials for some portions of the system, such as for plumbing. Inspections may be required for systems that present higher risk to public health or the environment, such as systems generating greater than 300 gpd, systems located in sensitive areas, or complex systems.

Requirements on enforcement have not been included in the proposed rules because they would duplicate OAR 340-012 that addresses enforcement procedures.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
Inspection of installed systems and enforcement guidelines are not provided in the rule. Graywater re-use systems that aren't inspected or enforced upon will be more likely to illicitly discharge into our public stormwater systems and could impact drinking water sources. Newly installed systems should be inspected. Enforcement should be provided for improperly used or maintained systems, without burden being placed on the municipality, county, or special district.	38

152 **Comment Summary:** **The rules do not appear to clearly address what happens if a property owner is denied permit issuance. Does the property owner have any recourse?**

DEQ Response: Permits for graywater reuse and disposal systems will be issued under OAR Chapter 340, Division 045: Regulations pertaining to NPDES and WPCF permits. DEQ may deny coverage under a general permit and require an application for an individual permit. DEQ may also deny an application for a WPCF individual permit. The rules for denial of either a general or individual WPCF permit are described in OAR 340-045-0050. A person denied permit coverage may request a contested case hearing.

No changes have been made to the proposed rules in response to this comment.

Original Comment	Commenter:
The rules do not appear to clearly address what happens if a property owner is denied permit issuance. Does the property owner have any recourse?	22

Permitting

General Permits - Tier 1 OAR 340-053-0110(1)(a)

153 **Comment Summary:** **Documentation should be required with a Tier 1 permit application and reviewed prior to authorizing coverage under the permit. At a minimum, system type, volume, intended reuse, and the wastewater disposal method**

should be provided. This should be clearly identified in this rule.

DEQ Response: DEQ does not have the resources to review system design plans, operation and maintenance manuals, or other documentation for Tier 1 systems. The requirements to obtain coverage under a Tier 1 general permit will be specified in the general permit application. Some basic system information will likely be required to establish that the graywater reuse and disposal system can be covered under the general permit. This approach is consistent with the recommendations of the DEQ Graywater Advisory Committee.

No changes to the proposed rules were made in response to this comment.

Original Comment	Commenter:
340-053-0110 1 (a) Documentation should be submitted and reviewed for a Tier I permit. System type, volume, intended reuse and disposal system, at a minimum, should be provided and should be clearly identified in this rule.	38

154 **Comment Summary:** **It's not clear why only single-family residences and duplexes are eligible for tier 1 permits. If the graywater production is under 300 gallons/day (e.g., an apartment complex diverting only laundry graywater), why should such a system be forced to meet the more stringent requirements for a Tier 2 permit?**

DEQ Response: Under the proposed rules only a single family residence or residential duplex producing less than 300 gpd of Type 1 graywater would be eligible for coverage under a Tier 1 permit. Since the quality of graywater is directly related to source control (i.e., what goes down the drain), the risks to public health and the environment increase with more sources (i.e., more units). Consequently, multi-family residences producing less that 1,200 gpd of graywater will be covered under a Tier 2 general permit, which requires DEQ to review and approval documentation prior to granting permit coverage. This approach is consistent with the recommendations of the DEQ Graywater Advisory Committee.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
It's not clear why living arrangements other than single-family households are ineligible for tier 1 permits, if the water use would be under 300 gallons/day. It is quite conceivable that an apartment complex might divert only clothes-washing greywater with total flows under 300 gallons/day; why should such a system be forced to meet the more stringent tier 2 guidelines?	26

Permitting

General Permits - Tier 2 OAR 340-053-0110(1)(b)

156 **Comment Summary:** **OAR 340-053-0110(2)(b)(B)(5) requires certification that the effluent from an onsite wastewater treatment standard will not exceed residential strength wastewater. Who is going to test for the BOD5, TSS, TKN etc.?**

DEQ Response: This particular section of the proposed rules requires the plans and specifications for Tier 2 permits where water is diverted from an onsite system to be signed and certified to not result in septic tank effluent exceeding the criteria for residential waste strength. It is the responsibility of the permit applicant to ensure that the

requirements of the rules are satisfied. This rule section does not require testing to show this requirement is met.

No changes to the proposed rules were made it response to this comment.

Original Comment	Commenter:
-0110 (b) (B)(5) who is going to test for the BOD5, TSS, TKN etc. ?	3

Permitting

Individual (Tier 3) OAR 340-053-0110(2)

28 **Comment Summary:** **Please remove the requirement that Tier 3 graywater reuse and disposal systems generating <300 gpd need a designers/engineers approval. The site evaluation, design plan, and owners manual should provide enough information to insure the safety of a small system. This will support the development of innovative smaller systems.**

DEQ Response: Tier 3 permits will be issued for systems that produce high volumes, use advanced treatment, are located in sensitive areas, or require custom permit conditions. Professional design of Tier 3 systems provides added assurance that operation of a graywater reuse and disposal system is appropriate for the intended use of treated graywater and will not result in adverse impacts on public health or the environment.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
The lowest cost tier 3 permit is $601 plus a yearly fee of $334. The yearly fee makes tier 3 permits for graywater system with <300 GPD and 300-1200 GPD prohibitively expensive. Systems with tier 1 and tier 2 GPD uses should not have to pay a yearly fee. The amount of the yearly fee limits access and having a yearly permitting fee is not something that households and small communities are use to paying. Collection of a yearly fee could be difficult, use up staff time, and deter residents with smaller GPD systems from adding innovative disposal and composting toilet systems. I understand requiring a tier 3 permit for disposal of graywater and graywater/composting toilet systems where no septic system or city sewer connection is in place. I understand more over site of the design of these systems supports their safe implementation. These two types of innovation are very important for limiting the load on our currently overloaded sewer system and transitioning human sanitation systems into more resource efficient, environmentally safe and sustainably designed systems. Below is an expert from HB 2080 regarding permitting and disposal: (b) Minimize the burden of permit requirements on property owners; and (c) Prescribe requirements that allow for separate systems for the treatment, disposal or reuse of gray water. These requirements must ensure the protection of: (A) Public health, safety and welfare; (B) Public water supplies; and (C) Waters of the state, as that term is defined in ORS 468B.005. On site disposal of graywater keeps it out of the already overloaded sewer system that overflows into our rivers polluting our water system with black water. Graywater/Composting toilet systems safely manage human waste and turn it into a resource.	40

Septic systems are installed below the 18 inches of top soil where all the healthy bacterial life lives. These bacteria love to eat the nutrients in graywater, creating a healthy relationship. When a septic system is operated incorrectly or fails it is a big issue for ground water pollution. Graywater/Composting toilet systems don't rely on septic systems and are safer for our water system.

Please remove the yearly fee for tier 3 permits for graywater systems that use <300 GPD and 300-1200 GPD. Also please remove the requirement that <300 GPD systems need a designers/engineers approval. The site evaluation, design plan and owners manual should provide enough information to insure the safety of a small system. This will support the development of innovative smaller systems.

Permitting

Program Agents OAR 340-053-0110(3)

158 **Comment Summary:** **Clarify if agents will be responsible for retaining monitoring and annual reports.**

DEQ Response: The rules have been updated to clarify that program agents are responsible for reviewing and maintaining any monitoring data or annual report data or both.

Original Comment	Commenter:
Clarify if agents will be responsible for retaining monitoring and annual reports.	46

159 **Comment Summary:** **340-053-0110 (3) Program Agent. This section is not clear on fees, or specifics of program delegation. The statement "agree to implement a program consistent with the rules of this division" should be specified clearly that a municipality has the ability to place more stringent requirements on Graywater use within their jurisdiction. In the proposed rules it states that the department will train and provide assistance to the Program Agent (local government) on inspections and enforcement. Will these guidelines be provided in the Water Pollution Control Facility permit via cross referenced links to federal rules?**

DEQ Response: OAR 340-053-0010(3)(a)(D) requires a program agent to submit to DEQ a fee schedule for services rendered and permits issued; subparagraph (E) further requires program agents to submit an agreed upon surcharge fee to the department to offset program administration and oversight costs.

Since other statutes give local jurisdictions authority to adopt ordinances more stringent than those imposed by state-wide administrative rules, explicit language to that effect is not included in these rules.

DEQ will develop an Internal Management Directive to assist DEQ staff with the implementation of the graywater program. This information will be available to program agents as well. No federal rules currently exist for graywater reuse and disposal systems, so the guidance will not reference federal graywater rules. However, the guidance may draw on other federal rules or information pertinent to graywater, such as onsite wastewater treatment systems and groundwater.

No changes were made to the proposed rules in response to this comment.

Original Comment Commenter:

-0110 (3) I don't think local government will want to accept any responsibility or liability for this program. Where will compliance funding come from. Local fees will far exceed what DEQ establishes for fees. Why should local government have to pay a surcharge to the State this will raise the gray water system fees more then projected.	3

160 **Comment Summary:** **OAR 340-053-0100 (3) Due to risk of third party clams from improper reuse systems, liability protection should be provided to Program Agents by the Department of Environmental Quality.**

DEQ Response: Comment noted. This request is beyond the scope of this rulemaking.

No changes were made to the proposed rules in response to this comment.

Original Comment	Commenter:
OAR 340-053-0100 (3) Due to risk of third party clams from improper reuse systems, liability protection should be provided to Program Agents by the Department of Environmental Quality.	41

161 **Comment Summary:** **Local agents should be able to implement more stringent requirements [0110(3)(a)(A)] and to perform graywater inspections for installation, maintenance and complaint response [110(3)(a)(M)]. DEQ should also be clearly available to help with enforcement measures typical in agent agreements.**

DEQ Response: Local jurisdictions have statutory authority to adopt ordinances for graywater programs more stringent than those proposed in these rules, which may include inspections. OAR 340-053-0110(3)(b)(F) states that DEQ will provide assistance with complaint response and system inspections; DEQ assistance with enforcement has been added. More detailed language may be provided in specific agreement with program agents.

Original Comment	Commenter:
Local agents should be able to implement more stringent requirements [0110(3)(a)(A)] and to perform graywater inspections for installation, maintenance and complaint response [110(3)(a)(M)]. DEQ should also be clearly available to help with enforcement measures typical in agent agreements.	46

List of Public Commenters

1 David Sullivan, Florence, Oregon
20110125-01 1/25/2011 Email

2 Michael Vail, Water Legacy
20110126-01 1/26/2011 Email

3 Russ Hanson, Crook County Environmental Health
20110127-01 1/27/2011 Email
20110210-01 2/10/2011 Email

4 Caroline Gross-Regan, Douglas County, Oregon
20110202-01 2/2/2011 Email

5 Elizabeth Graser-Lindsey, Beavercreek, Oregon
20110203-01 2/3/2011 Email

6 Calli Roberts, Jackson County, Oregon
20110204-01 2/4/2011 Email

7 Scott Lazenby, Sandy, Oregon
20110207-01 2/7/2001 Email

8 Shannon Harris, Ashland, Oregon
20110213-01 2/13/2011 Email

9 Greta Loeffelbein, Cottage Grove, Oregon
20110220-01 2/20/2011 Email

10 Jonathan Brandt, Portland, Oregon
20110222-01 2/22/2011 Email
20110310-02 3/10/2011 Email

11 Kraig Stevenson, International Code Council, Bellevue, Washington
20110223-01 2/23/2011 Email

12 Matthew Iverson, Fosterville Ecocommunity, Portland, Oregon
20110223-02 2/23/2011 Oral - Portland

13 Nicole VanDerHeyden, Portland Oregon
20110223-05 2/23/2011 Oral - Portland
20110311-01 3/11/2011 Email

14 David Burdick, Earth Harmony Habitats, Portland, Oregon
20110223-03 2/23/2011 Oral - Portland
20110311-11 3/11/2011 Email

15 Brenna Bell, Tryon Life Community Farm and Recode, Portland, Oregon
20110223-04 2/23/2011 Oral - Portland
20110310-01 3/10/2011 Email

16 Joshua Klyber, Recode
20110223-06 2/23/2011 Oral - Portland

17 Randall Elliott, Randoid LLC
20110223-07 2/23/2011 Oral - Portland

18 Charles Biggs, Eugene, Oregon
20110228-01 2/28/2011 Email

19 Steve Bismarck, Brookings, Oregon
20110302-01 3/2/2011 Email

20 Mark Gamba, Planning Commissioner, Milwaukie, Oregon
20110303-01 3/3/2011 Email

21 Marian Grebanier, Portland, Oregon
20110303-02 3/3/2011 Email

22 Lawrence Brown, Bend, Oregon
20110304-01 3/4/2011 Email

23 Chris Hart-Henderson, Heart Springs Landscape Design, LLC, Bend, Oregon
20110306-01 3/6/2011 Email

24 Robert vanCreveld, Edgewater NW, Newport, Oregon
20110307-01 3/7/2011 Email

25 Marion Boggs, Coquille, Oregon
20110307-02 3/7/2011 Email
20110310-03 3/10/2011 Post

26 John Flanery, Eugene, Oregon
20110302-02 3/2/2011 Oral - Eugene
20110311-05 3/11/2011 Email

27 Jude Hobbs, Cottage Grove, Oregon
20110302-03 3/2/2011 Oral - Eugene

28 Gene Griffith
20110303-03 3/3/2011 Oral - Ashland

29 Karen Taylor, Siskiyou Permaculture
20110303-04 3/3/2011 Oral - Ashland

30 Melanie Mindlin, Ashland Planning Commission
20110303-05 3/3/2011 Oral - Ashland

31 Karen Wennlund
20110303-06 3/3/2011 Oral - Ashland

32 Anne Eldridge
20110303-07 3/3/2011 Oral - Ashland

33 Barbara Davidson
20110303-08 3/3/2011 Oral - Ashland

34 Tom Bender, Sustainable Architecture and Economics, Nehalem, Oregon
20110308-01 3/8/2011 Email

35 Bernhard Masterson
20110308-02 3/8/2011 Email

36 Abel Kloster, Aprovecho and Resilience Permaculture
20110309-01 3/9/2011 Email

37 Pam Lott, Ashland, Oregon
20110310-04 3/10/2011 Email

38 Janet Gillaspie, Oregon Association of Clean Water Agencies (ACWA)
Chris Fick, League of Oregon Cities
20110311-02 3/11/2011 Email

39 Morgan Brown, Whole Water Systems, LLC, Seattle, Washington
20110311-03 3/11/2011 Email

40 Melora Golden, ReCode
20110311-04 3/11/2011 Email

41 Keith Turner, City of Corvallis Public Works Department, Corvallis, Oregon
20110311-06 3/11/2011 Email

42 Carol McCreary, Public Hygiene Lets Us Stay Human (PHLUSH), Portland, Oregon
20110311-07 3/11/2011 Email

43 Jeremy O'Leary, Portland, Oregon
20110311-08 3/11/2011 Email

44 James Ray Arnold and Sam Omeechevarria,
JRA Green Building Construction and Consultation, Portland, Oregon
20110311-09 3/11/2011 Email

45 Juliet Johnson, Portland, Oregon
20110311-10 3/11/2011 Email

46 Kim Cox, City of Portland, Bureau of Environmental Services, or behalf of Susan Anderson, Director, Portland Bureau of Planning and Sustainability Dean Marriott, Directior, Bureau of Environmental Services David G. Shaff, Administrator, Portland Water Bureau
20110311-12 3/11/2011 Email

47 Dorothy Cordochorea
20110311-13 3/11/2011 Email
Note: Commenter 47 provided lengthy comments as well as a shorter summary of comments. Due to the length of the full comments, only the comment summaries have been included in the Response to Comments.

State of Oregon
DEPARTMENT OF ENVIRONMENTAL QUALITY

Land Use Evaluation Statement

Rulemaking Proposal
for
Graywater Reuse and Disposal Systems

This rulemaking will adopt new rules for the permitting of graywater reuse and disposal systems.

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1. Explain the purpose of the proposed rules.

The Oregon Department of Environmental Quality is proposing to adopt new rules for the permitting of graywater reuse and disposal systems under OAR Chapter 340, Divisions 45 and 53. The proposed rules would:

- Establish a public policy to encourage the reuse of graywater for beneficial purposes such as irrigation.
- Establish general requirements for all graywater reuse and disposal systems necessary to protect public health and the environment.
- Define three types of graywater based on level of treatment and identify reuse activities, treatment and monitoring requirements, setbacks, access and exposure controls, and site management practices necessary to protect public health and the environment.
- Establish design and construction standards for graywater reuse and disposal systems.
- Create a three-tier Water Pollution Control Facilities permit system that defines permitting requirements based primarily on the volume of graywater produced.
- Establish requirements for entering into agreements with local governments to act as program agents.
- Exempt persons from the requirement to submit a Land Use Compatibility Statement to DEQ when applying for a Water Pollution Control Facilities individual permit or general permit coverage to operate a graywater reuse and disposal system. This exemption only applies to systems that produce less than 1,200 gallons a day and are connected to approved sewerage systems or approved onsite wastewater treatment systems, such as a septic tank and drainfield, because these types of systems have already been determined to be compatible with the local acknowledged comprehensive plan and land use regulations.

2. Do the proposed rules affect existing rules, programs or activities that are considered land use programs in the DEQ State Agency Coordination Program?

Yes

a. If yes, identify existing program/rule/activity:

Issuance of Water Pollution Control Facilities permits.

b. If yes, do the existing statewide goal compliance and local plan compatibility procedures adequately cover the proposed rules?

Yes, however, DEQ has determined that a subset of permits required by these proposed rules do not affect land use. Please see the reply to the question below.

In the space below, state if the proposed rules are considered programs affecting land use. State the criteria and reasons for the determination.

DEQ has determined that permitting graywater reuse and disposal systems that generate less than 1,200 gallons per day and connect to an approved sewerage system or onsite wastewater treatment system is not a program affecting land use, and Land Use Compatibility Statements are not needed to obtain Water Pollution Control Facilities individual permits or register for permit coverage under a Water Pollution Control Facilities general permit. This is because the sewerage system or onsite sewage system has already been subjected to DEQ's State Agency Coordination Program. Compatibility with the local comprehensive plan and land use regulations was demonstrated when DEQ first permitted the sewerage system or onsite sewage system. Goal 6 requirements are met because the proposed rules for this subset of activities preclude situations that would affect waters of the state.

3. If the proposed rules have been determined a land use program under 2. above, but are not subject to existing land use compliance and compatibility procedures, explain the new procedures DEQ will use to ensure compliance and compatibility.

Not applicable.