

# Arizona grey water law

This is the model to emulate, especially our slightly improved version: [Greywater Laws and Improvements](#) (pdf, 250k). Their three tiered system makes so much sense it is hard to justify regulating grey water any other way.

- My [testimony to the New Mexico state legislature](#) explaining why they should copy Arizona.
- [Arizona Gray Water Law](#) copied from the official site to ours September 2002. This presents just the three grey water sections, clearly labeled as such, without having to sort through dozens of pages of unrelated regulations.
- [Arizona grey water code](#) from official site (scroll on page or search to section R18-9-711)
- [R18-9-714. Type 1 - RECLAIMED WATER GENERAL PERMIT: GREY WATER](#) Arizona tier 1 greywater law on Water CASA site.
- [Arizona brochure](#) (pdf) Very succinct, two page overview of the key features of the law from the Arizona Department of Environmental Quality. This copy was placed on our server September 2002.
- [Arizona Water CASA greywater study](#)
- [Water CASA grey water page](#)
- [Water CASA greywater booklet](#) (PDF, 800k)
- [Water CASA grey water brochure](#) (PDF, 180k)
- [Arizona composting toilet and kitchen greywater code](#)
- [Cottonwood, Arizona Greywater Stubout Plumbing Ordinance](#) (doc)

## Arizona takes a three tiered approach to scrutinizing grey water systems:

**1) Systems for less than 400 gallons per day that meet a list of reasonable requirements are all covered under a general permit without the builder having to apply for anything.**

With this one stroke, Arizona has raised their compliance rate from near zero to perhaps 50%.

And, homeowners are more likely to work towards compliance for the informal systems that still fall short.

What's more, the door is now open for professionals to install simple systems.

**2) Second tier systems process over 400 gallons a day, or don't meet the list of requirements, as well as commercial, multi-family, and institutional systems.**

They require a standard permit.

**3) Third tier systems are over 3000 gallons a day. Regulators consider each of them on an individual basis.**

In Arizona, regulators apply oversight to grey water systems in rational proportion to their possible impacts.

**Another wise feature of the AZ law: ... It does not proscribe design specifics.**

Instead, regulators require that systems meet performance goals. They don't care how the system is built. They just want it to function well. This is the preferred approach. It creates a favorable climate for innovation. Technical progress is not likely to quickly outdate the law.

The final idea I suggest you copy:

**They have a short, simply worded law and a longer explanatory booklet.**

The booklet can be more easily updated than the law.

For more see links above.

Here's the law for tier one systems:

**R18-9-711. Type 1 Reclaimed Water General Permit for Gray Water**

**A.** A Type 1 Reclaimed Water General Permit allows private residential direct reuse of gray water for a flow of less than 400 gallons per day if all the following conditions are met:

1. Human contact with gray water and soil irrigated by gray water is avoided;
2. Gray water originating from the residence is used and contained within the property boundary for household gardening, composting, lawn watering, or landscape irrigation;
3. Surface application of gray water is not used for irrigation of food plants, except for citrus and nut trees;
4. The gray water does not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities;
5. The application of gray water is managed to minimize standing water on the surface;

6. The gray water system is constructed so that if blockage, plugging, or backup of the system occurs, gray water can be directed into the sewage collection system or onsite wastewater treatment and disposal system, as applicable. The gray water system may include a means of filtration to reduce plugging and extend system lifetime;
7. Any gray water storage tank is covered to restrict access and to eliminate habitat for mosquitoes or other vectors;
8. The gray water system is sited outside of a floodway;
9. The gray water system is operated to maintain a minimum vertical separation distance of at least five feet from the point of gray water application to the top of the seasonally high groundwater table;
10. For residences using an onsite wastewater treatment facility for black water treatment and disposal, the use of a gray water system does not change the design, capacity, or reserve area requirements for the onsite wastewater treatment facility at the residence, and ensures that the facility can handle the combined black water and gray water flow if the gray water system fails or is not fully used;
11. Any pressure piping used in a gray water system that may be susceptible to cross connection with a potable water system clearly indicates that the piping does not carry potable water;
12. Gray water applied by surface irrigation does not contain water used to wash diapers or similarly soiled or infectious garments unless the gray water is disinfected before irrigation; and
13. Surface irrigation by gray water is only by flood or drip irrigation.

**B. Prohibitions.** The following are prohibited:

1. Gray water use for purposes other than irrigation, and
2. Spray irrigation.

**C.** Towns, cities, or counties may further limit the use of gray water described in this Section by rule or ordinance.

**Notes from/ about the Arizona experience**

It has been pretty quiet in the field.

Some health service people hate the new law, but they can't demonstrate that anyone is getting sick, which is the only real concern.

Environmentalists upset that grey water + composting toilets are not allowed has been the main feedback coming back to the Department of Environmental Quality ([see the department's clarification](#), PDF, 12k).

AZ DEQ is planning to revise the rules in 2003. They are considering allowing kitchen sink water if a grease trap is used, and kitchen sink water is applied subsurface. This would solve the composting toilet issue, as kitchen sink water wouldn't be left out in its own, awkward third system.

Phoenix is not interested in grey water. Rural areas and Southern Arizona are very interested (13% were already reusing grey water in Southern Arizona prior to the law change, according to a [Water CASA study](#)).

Builders of new homes in Southern Arizona are open to the extent that they are considering embracing a law which requires dual plumbing in new construction.

The big missing link is qualified retrofit installers.

### **Note on the Arizona greywater study kitchen sink fecal coliform levels**

Much has been made of the fecal coliform levels in kitchen sink water in the [Water CASA study](#). The 88,400 fecal coliforms/ 100 ml level was used to justify excluding kitchen sink water from the law. This equates to nearly a gram per day of mammalian fecal matter going down the kitchen sink, which defies common sense (more on understanding [Fecal coliform measurements](#)).

This high reading is most likely caused by indicator organisms growing in the plumbing due to the nutrients in the food bits in the sink. Does this mean pathogens also breed? If so, extra caution is warranted, if not, then not.

This question can and should be resolved by comparing indicator to pathogen levels at different points in the plumbing; the sink, the trap, the outlet.

Even if pathogens do breed in the kitchen sink plumbing, the levels are still 98% less than the 5,000,000 typical fecal coliform level in raw sewage, so the kitchen sink water could reasonably be handled by a more stringently designed greywater system.

### **Contacts**

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The [Water Conservation Alliance of Southern Arizona](#) provided the impetus behind the rationalization of grey water laws in Arizona.

**More Arizona grey water links:**

- [Update Program for Onsite Systems Rule:](#)  
<http://azdeq.gov/environ/water/permits/index.html#update>
- [Arizona composting toilet and kitchen greywater code](#)  
This covers the composting toilet/ kitchen sink and greywater issues.
- [Presale Inspection Program Information and Forms:](#)  
<http://azdeq.gov/environ/water/permits/wastewater.html#new>
- [Compliance and Enforcement Handbook:](#)  
<http://azdeq.gov/lead/osc/handbook.html>
- [ADEQ Website:](#) <http://azdeq.gov>