



Division of Drinking  
and Ground Waters  
Lazarus Government Center  
PO Box 1049  
Columbus OH 43216-1049  
Phone (614)644-2752  
Fax (614)644-2909

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# FACT SHEET

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## Filter Backwash Recycling



The Filter Backwash Recycling Rule (FBRR) regulates the recycling of filter backwash water within the treatment process of public water systems. The FBRR requires surface water systems to review their recycle practices and to modify any recycle practices that may compromise microbial control or contribute to violations of the drinking water regulations. Recycle flows can be a source of concentrated microbial pathogens and chemical contaminants.

## Which public water systems must comply with the FBRR?

The FBRR applies to all public water systems that meet all of the following criteria:

- i Are surface water, including groundwater under the direct influence of surface water (GWUDI) as designated by the director in accordance with OAC Rule 3745-81-76;
- i Use conventional filtration treatment or direct filtration treatment; and
- i Recycle spent filter backwash water, sludge thickener supernatant, or liquids from dewatering processes back into the drinking water treatment.

## What are the requirements of the FBRR?

The FBRR requires that recycled filter backwash water, sludge thickener supernatant, and liquids from dewatering processes be returned to a location prior to all processes of conventional or direct filtration treatment. Surface water systems may request that the director approve alternative locations to recycle the flows through a plan approval.

By December 8, 2003, a surface water system or GWUDI must notify the director through their district office in writing that they recycle flows within the treatment processes. When notifying their district office, systems must provide the following information:

- i A plant schematic showing the origin of all recycle flows, the hydraulic conveyance used to transport them, and the location where they are recycled back into the plant; and
- i The typical recycle flow, the highest observed plant flow during the previous twelve months, and design flow for the treatment plant. All flows must be reported in gallons per minute. The reported highest observed plant flows should represent the highest instantaneous flow encountered during the previous twelve months, as measured by meters or other means, considering both raw water influent flow rate and any recycle return flows contributing to the plant flow. It should not be an average of daily values or a maximum day production expressed down to gallons per minute.

By June 8, 2004, a surface water system or GWUDI that recycles spent filter backwash water, sludge thickener supernatant, or a liquid from a dewatering process are required to return these flows to a location prior to all processes of existing conventional filtration treatment or direct filtration treatment, or through an alternative location that is approved by the director in a plan approval. Failure to comply is a treatment technique violation.

Also, by June 8, 2004, a surface water system must collect and maintain the following information:

- i A copy of the recycle notification and information that was submitted to the Ohio EPA;
- i A list of all recycle flows and the frequency with which they are returned;
- i The average and maximum backwash flow rate through the filters and the average and maximum duration in minutes of the filter backwash;
- i The typical filter run length and a written summary of how filter run length is determined;
- i The type of treatment provided for the recycle flow; and
- i Data on the physical dimensions of any recycle flow equalization and treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and, if applicable, frequency that solids are removed.

## **What are some of the design criteria for recycling?**

It is recommended that filter backwash water should not be recycled when the raw water contains excessive algae, when finished water taste and odor problems are encountered, or when disinfection byproduct concentrations in the distribution system may exceed the maximum contaminant level. It is recommended that filter backwash water be returned at a rate of less than 10% of the raw water flow rate entering the plant. Particular attention must be given to the presence of protozoans such as *Giardia* and *Cryptosporidium* concentrating in the wastewater stream.

Additionally, provisions should be available to dispose the recycle flow if it causes a treatment upset, or the raw water contains excessive algae, or it causes taste and odor concerns or it contributes to a violation of the drinking water quality of the finished water. The appropriate recycle flow percentage depends on the specific water quality and treatment conditions and consultation with the district office staff is recommended. Moreover, the recycle processes will be subject to review as part of a plan approval.

Examples of the criteria that may be used to evaluate an alternative recycle location include (but are not limited to):

- i Is an alternative recycle location required to maintain optimal finished water quality?
- i Does the plant have unique treatment requirements or processes that require the return of recycle streams to an alternative location?
- i Have treatment technique violations of the combined filter effluent turbidity or individual filter turbidity exceedances been reported?
- i What effect would the use of the alternative recycle location have on treatment processes and finished water quality?

### Is funding available to assist public water systems?

The Ohio Drinking Water Assistance Fund is available to provide financial assistance to eligible public water systems. Due to the limited funding available and the process to fulfill program requirements, any public water system considering this funding option should apply as early as possible. Pre-applications and information about the loan program and eligibility requirements are available at the Ohio EPA website — [www.epa.state.oh.us/ddagw/dwaf.html](http://www.epa.state.oh.us/ddagw/dwaf.html).

### Need more information about the FBRR?

For information on the FBRR, call your Ohio EPA district office, or call the Safe Drinking Water Hotline, at (800) 426-4791, or visit the USEPA website — [www.epa.gov/safewater/filterbackwash.html](http://www.epa.gov/safewater/filterbackwash.html).

Northwest District Office	(419) 352-8461
Northeast District Office	(330) 963-1200
Southwest District Office	(937) 285-6357
Southeast District Office	(740) 385-8501
Central District Office	(614) 728-3778

