



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8**

1595 Wynkoop Street  
DENVER, CO 80202-1129  
Phone 800-227-8917  
<http://www.epa.gov/region08>

**JUL - 6 2015**

Ref: 8ENF-W

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Brian Beck, Board Chair  
Rivermeadows Water District  
P.O. Box 510  
Teton Village, WY 83025

Mr. John Ryan, Operator  
Rivermeadows Water District  
P.O. Box 1462  
Jackson, WY 83001

Re: Administrative Order issued to the Rivermeadows Water District Public Water System,  
PWS ID# WY5600786, Docket No. **SDWA-08-2015-0024**

Dear Messrs. Beck and Ryan:

Enclosed is an Administrative Order (Order) issued by the United States Environmental Protection Agency (EPA) under the authority of section 1414(g) of the Safe Drinking Water Act, 42 U.S.C. § 300g-3(g). Among other things, the Order alleges that the Rivermeadows Water District (District), as owner, and Mr. John Ryan, as operator, of the Rivermeadows Water District Public Water System (System), have violated the National Primary Drinking Water Regulations at 40 C.F.R. part 141 (Drinking Water Regulations).

The Order is effective upon the date received. Please review the Order and within 10 days provide the EPA with any pertinent information you believe the EPA may not have (e.g., any monitoring that may have been done but not submitted, any corrective actions that may have been done but not submitted, any public notices issued but not submitted, etc.). If the Order does not correctly state how many people and/or service connections are served by the System, please let the EPA know within 10 days; if the EPA does not hear from you, the EPA will assume this information is correct.

If you comply with the Order, the EPA may close the Order without further action. Failure to comply with the Order may lead to substantial civil penalties and/or a federal court injunction ordering compliance.

Please be aware that you are required to submit to the EPA a plan and schedule for bringing the System into compliance with the Drinking Water Regulations. The EPA's approval of the District's plan and schedule does not substitute for any other approval that may be required by any other governmental

entity for modifying the System. The EPA encourages the District to contact any such governmental agency or agencies regarding any applicable approval requirements.

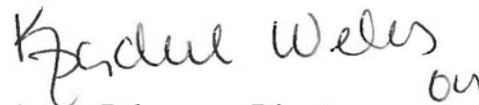
The Order also requires you to notify the public of having violated the Drinking Water Regulations, specifically for failing to correct a significant deficiency within the required time frame. Enclosed please find a public notice template explaining the public notice requirements in more detail. In addition, a second public notice template is enclosed for an August 2014 monitoring violation that is not yet overdue.

The Small Business Regulatory Enforcement and Fairness Act (SBREFA) may apply to this situation. Enclosed is a small business information sheet, outlining compliance assistance resources available to small businesses and small governments, in case these are relevant. SBREFA does not eliminate the responsibility to comply with the Order or the Drinking Water Regulations.

To submit information or request an informal conference with the EPA, please contact Jill Minter at the above address (with the mailcode 8ENF-W), by phone at (800) 227-8917, extension 6084, or (303) 312-6084, or by email at [minter.jill@epa.gov](mailto:minter.jill@epa.gov). Any questions from the District's attorney should be directed to Mia Bearley, Enforcement Attorney, who may be reached at the above address (with the mailcode 8ENF-L), by phone at (800) 227-8917, extension 6554 or (303) 312-6554, or by email at [bearley.mia@epa.gov](mailto:bearley.mia@epa.gov).

We urge your prompt attention to this matter.

Sincerely,

Handwritten signature of Arturo Palomares in black ink, with the initials "on" written below the signature.

Arturo Palomares, Director  
Water Technical Enforcement Program  
Office of Enforcement, Compliance  
and Environmental Justice

Enclosures

1. Order
2. Public Notice Templates
3. Tech Tips: #24 Mesh Non-corrodible Screen
4. Tech Tips: Vents and Overflows
5. SBREFA Information Sheet

cc: WY DEQ/DOH (via email)  
Ms. Tina Artemis, EPA Regional Hearing Clerk



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JUL - 6 2015

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Teton County Commissioners  
Melissa Turley, Chair  
P.O. Box 3594  
Jackson, WY 83001

Re: Notice of Safe Drinking Water Act Enforcement Action against the Rivermeadows Water District Public Water System, PWS ID # WY5600786

Dear Commissioners:

The Safe Drinking Water Act (Act) requires that the U.S. Environmental Protection Agency (EPA) notify locally elected officials of certain enforcement actions taken in their area.

An Administrative Order (Order) is being issued to the Rivermeadows Water District, which owns the Rivermeadows Public Water System (System), located in Teton County, WY, directing it to comply with the National Primary Drinking Water Regulations. The violations alleged in the Order include: failure to correct significant deficiencies, failure to monitor for total coliform bacteria, failure to prepare and distribute annual Consumer Confidence Reports by July 1, failure to notify the public of certain violations, and failure to report certain violations to the EPA.

For more details, a copy of the Order is enclosed. **The Order does not require any response or action by the County Commission.** If you have any questions regarding this Order, please contact Jill Minter at (303) 312-6084 or [minter.jill@epa.gov](mailto:minter.jill@epa.gov).

Sincerely,

A handwritten signature in black ink that reads "Arturo Palomares" followed by a small flourish.

Arturo Palomares, Director  
Water Technical Enforcement Program  
Office of Enforcement, Compliance  
and Environmental Justice

Enclosure:

Administrative Order

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8

2015 JUL -6 AM 8:29

IN THE MATTER OF: )  
 )  
Rivermeadows Water District, )  
 )  
and )  
 )  
John Ryan, )  
 )  
 )  
 )  
Respondents. )

Docket No. **SDWA-08-2015-0024**

FILED  
EPA REGION VIII  
HEARING CLERK

**ADMINISTRATIVE ORDER**

1. This Order is issued under the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by section 1414(g) of the Safe Drinking Water Act (Act), 42 U.S.C. § 300g-3(g), as properly delegated to the undersigned officials.
2. The Rivermeadows Water District is a public body, created by or pursuant to Wyoming law, and John Ryan is an individual, that owns and/or operates the Rivermeadows Public Water System (System), which provides piped water to the public in Teton County, Wyoming, for human consumption. Rivermeadows Water District and John Ryan are collectively referred to as “Respondents” in this Order.
3. The System is supplied by a groundwater source accessed by three wells. The water is disinfected with sodium hypochlorite solution prior to storage.
4. The System has approximately 53 service connections used by year-round residents and/or regularly serves an average of approximately 50 year-round residents. Therefore, the System is a “public water system” and a “community water system” as defined in 40 C.F.R. § 141.2 and section 1401 of the Act, 42 U.S.C. § 300f.
5. Respondents are subject to the Act and the National Primary Drinking Water Regulations (Drinking Water Regulations) at 40 C.F.R. part 141. The Drinking Water Regulations are “applicable requirements” as defined in section 1414(i) of the Act, 42 U.S.C. § 300g-3(i).
6. The Drinking Water Regulations include monitoring requirements. The EPA has sent Respondents annual notifications of the specific monitoring requirements that apply to the System.

**VIOLATIONS**

7. Respondents are required to monitor the System’s water monthly for total coliform bacteria. 40 C.F.R. § 141.21(a). Respondents failed to monitor the System’s water for total coliform bacteria during August 2014 and, therefore, violated this requirement.
8. Respondents are required to consult with the EPA regarding the appropriate corrective action within 30 days of receiving written notice from the EPA of a significant deficiency. 40 C.F.R.



§ 141.403(a)(4). Respondents failed to consult with the EPA by August 17, 2013, after receiving written notice of significant deficiencies on July 18, 2013, and therefore, violated this requirement.

9. Respondents are required to complete corrective actions to correct significant deficiencies or be in compliance with an EPA approved corrective action schedule within 120 days of receiving written notification from the EPA of any significant deficiency. 40 C.F.R. § 141.404(a). Respondents also are required to notify the EPA within 30 days of completion of significant deficiency corrective actions. 40 C.F.R. § 141.405(a)(2). The Respondents received a letter from the EPA on July 18, 2013, that detailed two significant deficiencies: lack of a proper #24-mesh non-corrodible screen on the overflow pipe and failure of the overflow pipe to be at an elevation of between 12 and 24 inches above the ground surface. Respondents failed to complete corrective actions for these significant deficiencies or be in compliance with an EPA approved corrective action schedule within 120 days after receiving the July 18, 2013, letter from the EPA that detailed significant deficiencies, or by November 15, 2013, and therefore, violated these requirements.

10. Respondents are required to prepare and deliver an annual Consumer Confidence Report (CCR) to the System's customers by July 1<sup>st</sup> of each year and to certify to the EPA of having done so. The CCR is to include information about the quality of the System's water using data collected during, or prior to, the previous calendar year. 40 C.F.R. §§ 141.151-141.155. Among other things, the CCR must include information on drinking water violations and significant deficiencies that occurred during the year covered by the report. 40 C.F.R. § 141.153. Respondents failed to prepare and deliver the annual 2012 CCR to the System's customers and failed to certify such preparation and delivery to the EPA. Additionally, Respondents were late in preparing and delivering the annual 2013 CCR to the System's customers by July 1, 2014, but rather submitted the 2013 CCR to the EPA on September 30, 2014. Respondents also failed to include the uncorrected significant deficiencies violations, in paragraph 9, above, in the 2013 CCR. Therefore, Respondents violated these requirements.

11. Respondents are required to notify the public of certain violations of the Drinking Water Regulations. 40 C.F.R. §§ 141.201-141.211. Respondents failed to notify the public of the significant deficiency violations cited in paragraph 9, above, within 30 days and, therefore, violated this requirement.

12. Respondents are required to report any failure to comply with any coliform monitoring requirement to the EPA within 10 days after discovering the violation. 40 C.F.R. § 141.21(g)(2). Respondents failed to report the violation cited in paragraph 7, above, to the EPA and, therefore, violated this requirement.

13. Respondents are required to report any failure to comply with any Drinking Water Regulation to the EPA within 48 hours (except where the Drinking Water Regulations specify a different time period). 40 C.F.R. § 141.31(b). Respondents failed to report the violations cited in paragraphs 8 through 11, above, to the EPA and, therefore, violated this requirement.



**ORDER**

Based on the above violations, Respondents are ordered to perform the following actions upon Respondents' receipt of this Order (unless a different deadline is specified below):

14. Respondents shall monitor the System's water monthly for total coliform bacteria and, if any sample is positive for total coliform, conduct repeat and additional routine monitoring, as required by 40 C.F.R. § 141.21. Respondents shall report analytical results to the EPA within the first 10 days following the month in which Respondents receive sample results, as required by 40 C.F.R. § 141.31(a). Respondents shall report any violation of coliform monitoring requirements in 40 C.F.R. part 141 to the EPA within 10 days after discovering the violation, as required by 40 C.F.R. § 141.21(g)(2).

15. Within 15 days after receipt of this Order, Respondents shall consult with the EPA regarding appropriate corrective actions for addressing the following significant deficiencies AND within 30 days of receipt of this Order, Respondents shall submit to the EPA a proposed plan and schedule to bring the system into compliance by completing corrective actions for addressing the following significant deficiencies. 40 C.F.R. §§ 141.403(a)(4) and 403(a)(5).

- a) Overflow must be fitted with a #24-mesh non-corrodible screen, or a properly sealed flapper or duckbill valve to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The existing screen on the overflow was torn and needs to be replaced.
- b) Overflow must be piped to an elevation between 12 and 24 inches above the ground surface and discharged over a drainage inlet structure or a splash pad.

16. The plan shall include proposed modifications to the System and estimated costs of such modifications. The schedule shall include a project start date, interim milestone deadlines, and a final compliance deadline (which shall be within four months of the project start date). Respondents shall not begin construction or modifications to the System before the EPA has approved Respondents' compliance schedule. The EPA's approval of Respondents' schedule does not substitute for any State of Wyoming approvals of plans and specifications that may also be required before any modification may be made to the System.

17. The System shall achieve compliance by completing corrective actions to address significant deficiencies by the final compliance deadline specified in the EPA-approved schedule. If the Respondents' plan fails to achieve permanent compliance, the EPA may order further steps and/or seek penalties for noncompliance. The schedule required by paragraph 15, above, shall be incorporated into this Order as an enforceable requirement upon written approval by the EPA.

18. Respondents shall notify the EPA within 30 days after completion of the corrective actions, as required by 40 C.F.R. § 141.405(a)(2). Respondents shall provide evidence to the EPA, including



photographs of the corrective actions and the following certification signed by a person of authority who represents the System, that the above corrective actions have been completed: "I certify under penalty of perjury that Rivermeadows Water District has completed corrective actions in accordance with the approved schedule to address the significant deficiencies at the Rivermeadows Water District public water system."

19. Respondents shall prepare and distribute an annual CCR which includes all required information, including significant deficiencies, to the System's customers and the EPA by July 1 of each year, and to certify to the EPA of having done so by October 1, as required by 40 C.F.R. §§ 141.151-141.155.

20. Within 30 days after receipt of this Order, Respondents shall notify the public of the violation cited in paragraph 9, above, following the instructions provided with the public notice template enclosed with the Order, and continue to notify the public of any uncorrected significant deficiencies every three months, as required by 40 C.F.R. § 141.203(b)(2). Thereafter, following any future violation of the Drinking Water Regulations, Respondents shall comply with any applicable public notice provisions of 40 C.F.R. part 141, subpart Q. Within 10 days after providing public notice, Respondent shall submit a copy of the notice to the EPA.

21. For any future violation of the Drinking Water Regulations for which this Order does not specify a reporting period, Respondents shall report the violation to the EPA within 48 hours of the violation occurring, as required by 40 C.F.R. § 141.31(b). However, if the Drinking Water Regulations specify a different time period for reporting the particular violation, Respondents shall report the violation to the EPA within that different period.

22. This Order shall be binding on Respondents and any person (e.g., employee, contractor, or other agent) acting in concert with Respondents.

23. If Respondents (a) lease or sell the System to another person or entity, or (b) contract with or hire any other person or entity to operate the System, Respondents shall, no later than the date of such lease, sale, or other contract, provide a copy of this Order to the lessee, purchaser, or contractor. No later than 10 days thereafter, Respondents shall notify the EPA in writing of the lease, sale, or other contract, with such notification to include the name and contact information of the person who has leased, bought, or contracted to operate the System. Respondents shall remain obligated to comply with this Order even if Respondents lease the System to another person or entity or hire another person or entity to operate the System.

24. Respondents shall send all reporting and notifications required by this Order in writing to:

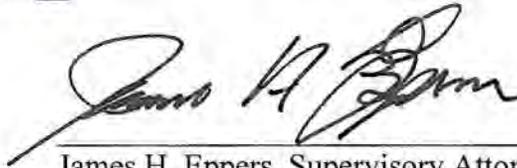
U.S. EPA Region 8 (8P-W-DW)  
1595 Wynkoop  
Denver, Colorado 80202-1129



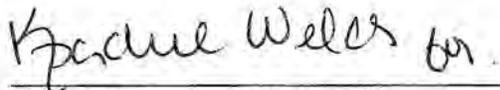
**GENERAL PROVISIONS**

25. This Order shall not constitute a waiver, suspension, or modification of any requirement of the Act or the Drinking Water Regulations. Issuance of this Order is not an election by the EPA to forgo any civil or criminal action.
26. Violation of any part of this Order or the Drinking Water Regulations may subject Respondents to a civil penalty of up to \$37,500 (as adjusted for inflation) per day of violation. 42 U.S.C. § 300g-3; 40 C.F.R. part 19.
27. Respondents may seek federal judicial review of this Order pursuant to section 1448(a) of the Safe Drinking Water Act, 42 U.S.C. § 300j-7(a).
28. This Order is effective upon receipt by Respondents and will continue to be in effect until closed by the EPA.

Issued: July 16, 2015.



James H. Eppers, Supervisory Attorney  
Legal Enforcement Program  
Office of Enforcement, Compliance  
and Environmental Justice



Arturo Palomares, Director  
Water Technical Enforcement Program  
Office of Enforcement, Compliance  
and Environmental Justice





# IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

## Rivermeadows Water District Failed to Correct Significant Deficiencies Within Required Time Frame

Our water system recently violated a drinking water requirement. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

A routine sanitary survey conducted on October 2, 2012, by the U.S. Environmental Protection Agency (EPA) Region 8, found two significant deficiencies in our water system: 1) the existing screen on the overflow was torn and needs to be replaced and 2) the overflow must be piped to an elevation between 12 and 24 inches above the ground surface and discharge over a drainage inlet structure or splash pad.

These significant deficiencies were reported to us in a letter from the EPA on July 18, 2013. As required by EPA's Ground Water Rule, we were required to take action to correct these deficiencies. However, we failed to take this action by the deadline established by the EPA.

### What should I do?

- There is nothing you need to do. You do not need to boil your water or take other corrective actions. However, if you have specific health concerns, consult your doctor.
- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from your health care providers about drinking this water.
- General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

### What does this mean?

This is not an emergency. If it had been, you would have been notified within 24 hours.

*\*Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.\**

These symptoms, however, are not caused only by organisms in drinking water, but also by other factors. If you experience any of these symptoms and they persist, you may want to seek medical advice.

### What is being done?

The EPA has issued an Administrative Order requiring consultation with the EPA and submittal of a corrective action plan and schedule to address the significant deficiencies. We anticipate resolving the problem by \_\_\_\_\_.

For more information, please contact John Ryan, contract operator, at 301-733-3079 or [jryan@ci.jackson.wy.us](mailto:jryan@ci.jackson.wy.us).

*\*Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.\**

This notice is being sent to you by the Rivermeadows Water District. PWS ID# WY5600786.  
Date distributed: \_\_\_\_\_.

## Template on Reverse

A system's failure to take corrective action within the required timeframe or be in compliance with a state-approved corrective action plan and schedule for a fecal indicator-positive ground water source sample or significant deficiency under the Ground Water Rule is a treatment technique violation and requires Tier 2 notification. You must provide public notice to persons served as soon as practical but within 30 days after you learn of the violation [40 CFR 141.203(b)]. You must issue a repeat notice every three months for as long as the violation persists. Your primacy agency may have more stringent requirements for treatment technique violations. Check with your agency to make sure you meet all requirements.

Community systems must use one of the following methods [40 CFR 141.203(c)]:

- Hand or direct delivery
- Mail, as a separate notice or included with the bill

In addition, you must use *another* method reasonably calculated to reach others if they would not be reached by the first method [40 CFR 141.203(c)]. Such methods could include newspapers, e-mail, or delivery to community organizations. If you mail, post, or hand deliver, print your notice on your system's letterhead if available. The notice on the reverse is appropriate for mailing, posting, or hand delivery. If you modify this notice, you must still include all required PN elements from 40 CFR 141.205(a) and leave the mandatory language unchanged (see below).

### Mandatory Language

Mandatory language on health effects (from Appendix B to Subpart Q) must be included as written (with blanks filled in) and is presented in this notice in italics and with an asterisk on either end.

This template also includes mandatory language to encourage the distribution of the public notice to all persons served, where applicable [40 CFR 141.205(d)]. This language is also presented in this notice in italics and with an asterisk on either end.

### Corrective Action

In your notice, describe corrective actions you are taking. Listed below are some steps commonly taken by water systems with Ground Water Rule treatment technique violations. Depending on the corrective action you are taking, you can use one or more of the following statements, if appropriate, or develop your own text:

- Although we did not meet our deadline, we are now in consultation with the state to develop a corrective action plan.
- The significant deficiency has been identified and addressed.
- We have implemented a short term plan to address the immediate issue while we pursue the long-term solution.

### Repeat Notices

For repeat notices, you should state how long the violation has been ongoing and remind consumers of when you sent out any previous notices. If you are making progress with correcting the significant deficiency or addressing the fecal indicator-positive source sample, describe it. Alternatively, if funding or other issues are delaying corrective action, let consumers know.

### After Issuing the Notice

Make sure to send your primacy agency a copy of each public notice and a certification that you have met all public notification requirements within ten days after issuing the notice [40 CFR 141.31(d)]. Public Notification Handbook 107 March 2010. Issue a repeat notice every three months. Each time, complete and sign below and send a copy to the EPA at 1595 Wynkoop St., Attn: Jill Minter, 8ENF-W, Denver, CO 80202 or [minter.jill@epa.gov](mailto:minter.jill@epa.gov). Your July 2015 CCR, to include information on this and any other violations, will count as the 3Q 2015 Public Notice.

### Certification:

Method and Date distributed: \_\_\_\_\_ Signature: \_\_\_\_\_

# PUBLIC NOTICE

Date of Release: \_\_\_\_\_ PWS Number: \_\_\_\_\_

## FAILURE TO MONITOR VIOLATION TOTAL COLIFORM BACTERIA

To All **Rivermeadows Water District** Water Users  
*(Name of water system/business)*

*We are required to monitor your drinking water for total coliform bacteria on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. We did not complete all monitoring for total coliform bacteria and therefore cannot be sure of the quality of our drinking water during that time. Subsequent water samples have been analyzed as safe.*

The table below lists the failure to monitor violations we received for total coliform monitoring during the last year. (Please check the ones that apply to your system)

monitoring period	failure to monitor (1st)	failure to monitor (2 <sup>nd</sup> )	no replacement sample	insufficient number of routines	insufficient additional routines	samples taken early/late	no repeat sampling	repeats taken too late	insufficient quantity of repeats (<3)	insufficient quantity of repeats (<4)
8/2014	X									

What happened? What is being done?

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If you have any questions, please contact Mr. John Ryan at 307-733-3079.  
(Water system contact person) (Phone)

*Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

\_\_\_\_\_  
SAMPLE: Suggested public notice language for FAILURE TO MONITOR FOR TOTAL COLIFORM.  
You may use the above notice sample or write your own.

PWS Operator/Responsible Party:

Since most monitoring violations are included in Tier 3, you must provide public notice to persons served within one year after you learn of the violation. Multiple monitoring violations can be serious, and your primacy agency may have more stringent requirements. Check with your primacy agency to make sure you meet its requirements.

**Community Systems must use one of the following methods:**

- hand or direct delivery
- mail, as a separate notice or included with the bill

**In addition,** both community and non-community systems must use another method reasonably calculated to reach others if they would not be reached by the first method. Such methods could include newspapers, e-mail, or delivery to community organizations. If you post the notice, it must remain posted until the violation is resolved. If the violation has been resolved, you must post the notice for at least one week. If you mail, post, or hand deliver, print your notice on letterhead, if available.

The notice on the reverse is appropriate for distribution after each violation or collectively at the end of the calendar year. If you choose to wait until the end of the year to give notice, the enclosed form can be issued or it can be inserted into your CCR as long as public notification requirements are met.

After issuing the notice, make sure to send your primacy agency a copy of each type of notice and a certification that you have met all the public notice requirements within ten days after issuing the notice.

Send the copy of your notice and dates posted to:

BRE BOCKSTAHLER  
US EPA REGION 8  
PUBLIC WATER SYSTEM PROGRAM - 8P-W-DW  
1595 WYNKOOP ST.  
DENVER CO 80202

Or, you can fax a copy to: Attn: Bre Bockstahler at **877-876-9101**.

If you have questions about your total coliform FTM violation call Bre Bockstahler at 1-800-227-8917, ext. 312-6034 or (303) 312-6034.

**Certification of Public Notification**

I \_\_\_\_\_ certify that the attached public notification was issued  
(PWS Operator/Responsible Party)  
from \_\_\_\_\_ to \_\_\_\_\_.  
(Date) (Date)  
The attached notice was issued by \_\_\_\_\_.  
(Method of delivery)  
Signature \_\_\_\_\_ Date \_\_\_\_\_



# EPA Region 8 Drinking Water Unit Tech Tips

## Sanitary Protection of Drinking Water Storage Tanks: # 24 Mesh Non-corrodible Screen

**Finished Water Storage Sanitary Protection:** EPA, State and industry guidances agree that living things down to the size of insects must be kept out of finished drinking water storage tanks. This public health protection is accomplished by using #24 mesh non-corrodible screen on storage tank vents, overflows and drains, and has been known to the drinking water industry and included in Ten State Standards since 1962.

**Why do insects matter?** Insects are vectors for disease because they carry protozoal, bacterial and viral pathogens on their hairs, mouthparts, vomitus, and feces. A #24 mesh eliminates the potential for increases in endemic diseases (low level of disease in a community) from insects by keeping them out of tanks.

**Example – the house fly:** Houseflies have been demonstrated to carry *Cryptosporidium*, *Giardia Lamblia*, typhoid, cholera, *E. coli* O157:H7, polio and other pathogens.



Flies inside an elevated tank

### Cryptosporidium



A calf infected with Cryptosporidiosis can shed ~ 2 million oocysts.

At 0.00019 inches, a lot of *Cryptosporidium* can be carried by a fly that is 0.315 inches in diameter. Chlorine does not inactivate *Cryptosporidium*.

### Salmonella



Birds and animals are also vectors for disease. *Salmonella* was the cause of outbreaks

from storage tanks at Gideon, Missouri (transported by birds) and Alamosa, Colorado (transported by birds and rodents).

### #24 mesh will keep all insects out of storage tanks, including:



**Black Widow:**  
0.5518 inches



**House fly:**  
0.315 inches



**Deer tick:**  
0.166 inch



**Asian tiger, world's smallest mosquito:**  
0.078 inch



**Noseeums (biting midges):** 0.059 inch

Insects are capable of fitting through areas that are smaller than they are, and #24 mesh protects against this also.

### How big is #24 mesh?

A #24 mesh screen commonly uses a wire diameter of 0.014 inches which produces an opening of 0.0277 inches.



This is the area created with a #4 mesh or 0.2023 inches for a wire diameter of 0.0475 – the fly can enter.

This is the area with a #24 mesh – the fly cannot enter.

Note: Ten State Standards lists a #4 screen for elevated tank vents due to an assumption in the 2003 revision that insects cannot fly to the top of an elevated tank. Experts in the science of insects have provided research that shows insects can easily fly to that height. Tank inspectors have found insects in elevated tanks, and confirmed this research.

### Install #24 mesh non-corrodible screen to prevent insects from entering finished water storage tanks:

- Vents.** Protect elevated tanks from damage caused by extreme inhalation/exhalation events, frost buildup, etc. by using a vacuum-pressure release mechanism. See the Tech Tips on "Vacuum/Pressure Relief Mechanisms".
- Overflows.** Install mechanisms that temporarily give way in an overflow event (e.g., weighted swing valve). EPA still recommends a #24 when a duckbill or flapper valve is used as flapper valves can fail in the open position.
- Drains.** Make the screen removable for cleaning events.

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**Where can small quantities of #24 mesh (wire diameter 0.014 inches for an opening size of 0.0277 inches) be purchased?**

-TWP <http://www.twpinc.com>

-Grainger <http://www.grainger.com>

Disclaimer : EPA does not endorse any products. The vendors listed above can provide small quantities of #24 mesh, this is provided as a convenience to PWSs (if you would like to be added to this list please contact Bob Clement at 303-312-6653). PWSs should use their established procedures and resources to find the best products and prices.



# EPA Region 8 Drinking Water Unit Tech Tips

With special thanks to the Washington State Department of Health's Office of Drinking Water

## Sanitary Protection of Reservoirs (Tanks)- Vents and Overflows

**Finished Water Storage Sanitary Protection:** Storage tanks must have dedicated vents, overflow and discharge pipes, and drain lines to operate. However, to prevent the water supply from being contaminated, you must protect these openings from birds, bats, other animals, insects, rain and windborne contaminants. Be sure to consider the potential for vandalism, physical damage, and ice buildup when choosing a design.

### Vents

You must screen all vents with 24-mesh non-corrodible screen. For below ground (buried or partially buried) storage tanks, vent openings should be 24 to 36 inches above the roof or ground, terminate in an inverted U construction, and be covered with 24-mesh non-corrodible screen. For above ground tanks with non-inverted vents, the vents on flat roof tanks must be elevated at least 24 inches or 3 pipe diameters above the roof; on domed or curved roofs, the vent must be elevated at least 6 inches above the tank roof.



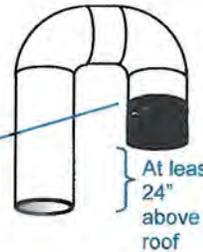
#### Poor Designs

Vents are screened but not protected from rain and windborne contaminants.

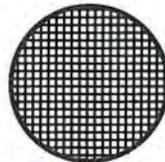
**Non-inverted U** design acceptable solely for ground level or elevated tanks.



24-mesh Screened Openings



It is important to inspect all screens for damage at least weekly.



**24-Mesh**  
non-corrodible screen  
(0.03 inch openings)

#### Good Design

Vents are inverted U construction, screened and are adequately protected from rain and windborne contamination.

### Overflow Lines

**Overflow lines** must be protected with 24-mesh screen OR a mechanical device, such as a properly sealed flapper valve or duckbill valve. If a flapper valve is used, a screen of any size must be placed inside the valve. Overflow lines should extend down to an elevation between 12 and 24 inches above ground level and discharge onto a splash plate or rocked area. Do not connect overflow or drain lines directly to a sewer or storm drain without a properly designed air-gap. Discharge end pipes must be located where they can be routinely inspected.

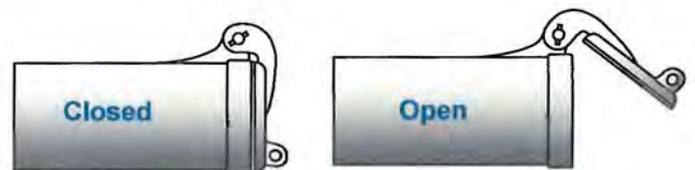
#### Flexible "Duckbill" Check Valves

Rubber check valves are commercially available for overflow and drain lines. Some of the valves are designed to fit inside the pipe and should be installed in the vertical position.



Closed

Open



#### Flapper Valves

Flapper valves are commercially available for overflow and drain lines. They help to exclude birds, bats and other animals and still allow the free flow of water. 24 mesh screen is still recommended inside the flapper valve.

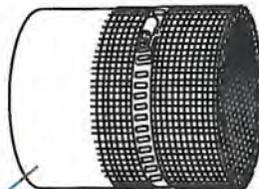
#### Poor Design



#### Good Design



Overflow end is screened with splash plate to direct water away from base of tank.



Bats can squeeze into very small spaces and birds may damage screens to gain entrance into a storage tank.





## U.S. EPA Small Business Resources Information Sheet

The United States Environmental Protection Agency provides an array of resources to help small businesses understand and comply with federal and state environmental laws. In addition to helping small businesses understand their environmental obligations and improve compliance, these resources will also help such businesses find cost-effective ways to comply through pollution prevention techniques and innovative technologies.

### **Small Business Programs**

[www.epa.gov/smallbusiness](http://www.epa.gov/smallbusiness)  
EPA's Office of Small Business Programs (OSBP) advocates and fosters opportunities for direct and indirect partnerships, contracts, and sub-agreements for small businesses and socio-economically disadvantaged businesses.

### **EPA's Asbestos Small Business Ombudsman**

[www.epa.gov/sbo](http://www.epa.gov/sbo) or 1-800-368-5888  
The EPA Asbestos and Small Business Ombudsman (ASBO) serves as a conduit for small businesses to access EPA and facilitates communications between the small business community and the Agency.

### **EPA's Compliance Assistance Homepage**

[www2.epa.gov/compliance](http://www2.epa.gov/compliance)  
This page is a gateway industry and statute-specific environmental resources, from extensive web-based information to hotlines and compliance assistance specialists.

### **EPA's Compliance Assistance Centers**

[www.assistancecenters.net](http://www.assistancecenters.net)  
EPA's Compliance Assistance Centers provide information targeted to industries with many small businesses. They were developed in partnership with industry, universities and other federal and state agencies.

### **Agriculture**

[www.epa.gov/agriculture/](http://www.epa.gov/agriculture/)

### **Automotive Recycling**

[www.ecarcenter.org](http://www.ecarcenter.org)

### **Automotive Service and Repair**

[ccar-greenlink.org/](http://ccar-greenlink.org/) or 1-888-GRN-LINK

### **Chemical Manufacturing**

[www.chemalliance.org](http://www.chemalliance.org)

### **Construction**

[www.cicacenter.org](http://www.cicacenter.org) or 1-734-995-4911

### **Education**

[www.campuserc.org](http://www.campuserc.org)

### **Food Processing**

[www.fpeac.org](http://www.fpeac.org)

### **Healthcare**

[www.hercenter.org](http://www.hercenter.org)

### **Local Government**

[www.lgean.org](http://www.lgean.org)

### **Metal Finishing**

[www.nmfrc.org](http://www.nmfrc.org)

### **Paints and Coatings**

[www.paintcenter.org](http://www.paintcenter.org)

### **Printing**

[www.pneac.org](http://www.pneac.org)

### **Ports**

[www.portcompliance.org](http://www.portcompliance.org)

### **Transportation**

[www.tercenter.org](http://www.tercenter.org)

### **U.S. Border Compliance and Import/Export Issues**

[www.bordercenter.org](http://www.bordercenter.org)

### **EPA Hotlines, Helplines and Clearinghouses**

[www2.epa.gov/home/epa-hotlines](http://www2.epa.gov/home/epa-hotlines)

EPA sponsors many free hotlines and clearinghouses that provide convenient assistance regarding environmental requirements. Some examples are:

### **Clean Air Technology Center (CATC) Info-line**

[www.epa.gov/ttn/catc](http://www.epa.gov/ttn/catc) or 1-919-541-0800

### **Superfund, TRI, EPCRA, RMP and Oil Information Center**

[www.epa.gov/superfund/contacts/infocenter/index.htm](http://www.epa.gov/superfund/contacts/infocenter/index.htm) or 1-800-424-9346

### **EPA Imported Vehicles and Engines Public Helpline**

[www.epa.gov/otaq/imports](http://www.epa.gov/otaq/imports) or 734-214-4100

### **National Pesticide Information Center**

[www.npic.orst.edu/](http://www.npic.orst.edu/) or 1-800-858-7378

### **National Response Center**

**Hotline** to report oil and hazardous substance spills - [www.nrc.uscg.mil](http://www.nrc.uscg.mil) or 1-800-424-8802

### **Pollution Prevention Information Clearinghouse (PPIC) -**

[www.epa.gov/opptintr/ppic](http://www.epa.gov/opptintr/ppic) or 1-202-566-0799

### **Safe Drinking Water Hotline -**

[www.epa.gov/drink/hotline/index.cfm](http://www.epa.gov/drink/hotline/index.cfm) or 1-800-426-4791

### **Stratospheric Ozone Protection Hotline**

[www.epa.gov/ozone/comments.htm](http://www.epa.gov/ozone/comments.htm) or 1-800-296-1996

### **Toxic Substances Control Act (TSCA) Hotline**

[tsc hotline@epa.gov](mailto:tsc hotline@epa.gov) or 1-202-554-1404

### **Small Entity Compliance Guides**

<http://www.epa.gov/sbrefa/compliance-guides.html>  
EPA publishes a Small Entity Compliance Guide (SECG) for every rule for which the Agency has prepared a final regulatory flexibility analysis, in accordance with Section 604 of the Regulatory Flexibility Act (RFA).

### **Regional Small Business Liaisons**

<http://www.epa.gov/sbo/rsbl.htm>  
The U.S. Environmental Protection Agency (EPA) Regional Small Business Liaison (RSBL) is the primary regional contact and often the expert on small business assistance, advocacy, and outreach. The RSBL is the regional voice for the EPA Asbestos and Small Business Ombudsman (ASBO).

### **State Resource Locators**

[www.envcap.org/statetools](http://www.envcap.org/statetools)  
The Locators provide state-specific contacts, regulations and resources covering the major environmental laws.

### **State Small Business Environmental Assistance Programs (SBEAPs)**

[www.epa.gov/sbo/507program.htm](http://www.epa.gov/sbo/507program.htm)  
State SBEAPs help small businesses and assistance providers understand environmental requirements and sustainable business practices through workshops, trainings and site visits.

### **EPA's Tribal Portal**

[www.epa.gov/tribalportal/](http://www.epa.gov/tribalportal/)  
The Portal provides access to information on environmental issues, laws, and resources related to federally recognized tribes.

### **EPA Compliance Incentives**

EPA provides incentives for environmental compliance. By participating in compliance assistance programs or voluntarily disclosing and promptly correcting violations before an enforcement action has been initiated, businesses may be eligible for penalty waivers or reductions. EPA has two such policies that may apply to small businesses:

### **EPA's Small Business Compliance Policy**

[www2.epa.gov/enforcement/small-businesses-and-enforcement](http://www2.epa.gov/enforcement/small-businesses-and-enforcement)  
This Policy offers small businesses special incentives to come into compliance voluntarily.

### **EPA's Audit Policy**

[www2.epa.gov/compliance/epas-audit-policy](http://www2.epa.gov/compliance/epas-audit-policy)  
The Policy provides incentives to all businesses that voluntarily discover, promptly disclose and expeditiously correct their noncompliance.

### **Commenting on Federal Enforcement Actions and Compliance Activities**

The Small Business Regulatory Enforcement Fairness Act (SBREFA) established a SBREFA Ombudsman and 10 Regional Fairness Boards to receive comments from small businesses about federal agency enforcement actions. If you believe that you fall within the Small Business Administration's definition of a small business (based on your North American Industry Classification System designation, number of employees or annual receipts, as defined at 13 C.F.R. 121.201; in most cases, this means a business with 500 or fewer employees), and wish to comment on federal enforcement and compliance activities, call the SBREFA Ombudsman's toll-free number at 1-888-REG-FAIR (1-888-734-3247).

Every small business that is the subject of an enforcement or compliance action is entitled to comment on the Agency's actions without fear of retaliation. EPA employees are prohibited from using enforcement or any other means of retaliation against any member of the regulated community in response to comments made under SBREFA.

### **Your Duty to Comply**

If you receive compliance assistance or submit a comment to the SBREFA Ombudsman or Regional Fairness Boards, you still have the duty to comply with the law, including providing timely responses to EPA information requests, administrative or civil complaints, other enforcement actions or communications. The assistance information and comment processes do not give you any new rights or defenses in any enforcement action. These processes also do not affect EPA's obligation to protect public health or the environment under any of the environmental statutes it enforces, including the right to take emergency remedial or emergency response actions when appropriate. Those decisions will be based on the facts in each situation. The SBREFA Ombudsman and Fairness Boards do not participate in resolving EPA's enforcement actions. Also, remember that to preserve your rights, you need to comply with all rules governing the enforcement process.

*EPA is disseminating this information to you without making a determination that your business or organization is a small business as defined by Section 222 of the Small Business Regulatory Enforcement Fairness Act or related provisions.*