

Notice of Violation - Disinfection byproducts (Trihalomethane- THM)

The Village of Whitehouse Municipal Water System requires testing for certain disinfection byproducts in our drinking water. These disinfection byproducts are the result of applying chlorine to the finished drinking water to kill off any remaining potentially harmful bacteria and make the water safe for consumption. The chlorine reacts with any remaining organic material in the finished water and forms these byproducts.

The Village of Whitehouse is required to test quarterly for two groups of these disinfection byproducts: Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). The Village's testing months are February, May, August, and November. When the Village does not meet the predetermined levels permissible, we are issued a "Violation of Maximum Contaminant Level for TTHM" by the Ohio EPA. This notice requires the Village to notify our customers of the violation within 30 days and also to report the violation(s) in the Village's annual Consumer Confidence Report. The results of this testing are reported as a running annual average. This running annual average is what is reported in any notice of violation letter the Village sends to our customers.

In May of 2017, the Village of Whitehouse was issued such notice and is working to resolve these issues in a timely manner. The Village will continue to test and monitor for disinfection byproducts, follow all required public notifications if needed, and continue to research all available options to provide our customers the safest drinking water possible. We appreciate your patience while this matter is being resolved.

The attached fact sheet gives additional information on disinfection byproducts, and as always, you can contact Steve Pilcher at 419-877-5383 if you should have any additional questions.



Disinfection Byproducts in Public Drinking Water

What are disinfection byproducts?

Most drinking water must be treated with disinfectants in order to kill germs. Disinfection byproducts (DBP) form when disinfectants such as chlorine, chlorine dioxide or ozone react with organic and inorganic substances present in the raw water. The primary organic DBP precursors are derived from terrestrial and aquatic plants. Bromide ion is the main inorganic precursor for disinfection byproducts.

Which disinfection byproducts are regulated?

There are hundreds of different disinfection byproducts that can be formed in drinking water. The type and quantity depend in part on the source water quality, type of disinfectant and distribution system operation. The following disinfection byproducts are regulated with a monitoring requirement and a maximum contaminant level:

- total trihalomethanes (TTHM)
- bromate
- five haloacetic acids (HAA5)
- chlorite

What levels of disinfection byproducts are allowed in drinking water?

There are four maximum contaminant levels for disinfection byproducts: total trihalomethanes may be present at 0.080 milligrams per liter (mg/L); five haloacetic acids at 0.060 mg/L; bromate at 0.010 mg/L; and chlorite at 1.0 mg/L.

How often is monitoring required?

The frequency of monitoring varies depending on the public water system population size, source type and type of disinfectant used. Past levels of disinfection byproducts may also result in either an increase or decrease in monitoring. Monitoring can be required daily, monthly, quarterly, annually or once every three years.

What happens when the maximum contaminant level is exceeded?

A maximum contaminant level (MCL) violation is issued to any public water system that exceeds the MCL for one or more disinfection byproducts. Failure to reduce these levels may result in an enforcement action by Ohio EPA.

What are the health effects of disinfection byproducts?

There have been many studies on the health effects of exposure to disinfection byproducts. Although some studies indicate the potential for both short- and long-term adverse health effects, others do not. Some potential health effects include cancer, as well as reproductive and developmental disorders. There is still a lot of uncertainty regarding any one individual's risk when exposed to levels of disinfection byproducts above the maximum contaminant level.

Can drinking water be treated to remove disinfection byproducts?

Yes. There are a variety of treatments available to public water systems to reduce the level of disinfection byproducts in drinking water. Treatment is typically one of two types:

- reduction in the levels of compounds that cause disinfection byproducts; or
- the removal of already-formed byproducts;

Home treatment, such as activated carbon, may also be helpful in reducing the levels of disinfection byproducts in your drinking water. Additional information on home treatment units can be obtained through the National Sanitation Foundation's (NSF) website at [nsf.org](http://www.nsf.org). NSF is an organization that certifies that products have been independently tested for effectiveness according to their manufacturers' claims.

For more information

For more information, call Ohio EPA's Division of Drinking and Ground Waters at (614) 644-2752.

Whitehouse Water Quality

12/21/2017

Notice of Violation – **UPDATE**

During the time leading up to the required fourth quarter testing for Trihalomethane (THM) in the Village of Whitehouse water distribution system, staff performed ongoing flushing of the distribution system. The results proved beneficial to the overall system and returned fourth quarter testing well below the range of concern for public health. The results of the testing are below:

Sample site	1st Qtr.	2 nd Qtr.	3 rd Qtr.	4 th Qtr.	Running Annual Average
Entry Point Texas St.	25.9	74.7	35.4	26.9	40.73
Entry Point Dutch Rd.				24.1	
Sample site 1	61.9	125.0	95.2	49.8	83.0
Sample site 2	76.2	117.0	69.0	48.5	77.7
Water Tower – Gilead St.				38.5	
Water Tower – Finzel Rd.				34.0	

*All values are ug/L

Due to high test results in the 2nd quarter of 2017 at both sampling locations and one high test result in the 3rd quarter of 2017 at one sampling location, the reporting requirements reflect a running annual average of all testing sites. The Village is once again required to inform our customers that the distribution system is in Notice of Violation for Disinfection Byproducts.

As you can see in the test results above, the 4th quarter at all sites fell well below the maximum contaminate limit (MCL) which is set at 80 ug/L or .080 mg/L by OEPA.

Whitehouse contracted with Poggemeyer Design Group of Bowling Green, Ohio to perform a flow model study of the water distribution system. Additional test sample sites were used and are reflected in the table above. The study revealed areas where additional flushing may be beneficial. These recommendations along with water tower mixing to prevent the formation or growth of THM's in the distribution system as well as an option for aeration of the water tower to participate the release of TMH's in the towers are being considered. We are currently developing a timeline for the installation of a permanent solution for THM removal.

Attached are the latest test results from our testing lab.

We will continue to flush the distribution system and test for disinfection byproducts quarterly.

If you have any questions or need clarification, please call Steve Pilcher, Director of Public Service, at 419-877-5383.

Certificate of Analysis - Fax Copy

MASI ENVIRONMENTAL SERVICES
 P. O. Box 1440
 Dublin, Ohio 43017
 (614) 873-4654

Page: 1
 Date: 11/22/17

WHITEHOUSE VILLAGE OF
 STEVE PILCHER
 PO BOX 2476

 WHITEHOUSE OH 43571-0000

Client No: 0000000606
 AR Sheet No: 0540117-AR
 MASI Dublin Laboratory: 877
 MASI Cincinnati Laboratory: 4100
 PWS ID No: 4801612
 STU ID No: DS1
 PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: WHITEHOUSE VILLAGE OF
 Sampler Name: MIKE HILL
 Sample Date: 11/13/17
 Sample Time: 10:15
 Sample Matrix: POTABLE
 Sample Monitoring Point: DS202
 Sample Tap: HYDRANT
 Sample Type:
 Sample Address: 7344 HELLER RD WHITEHOUSE
 Sample ID:

Public
 County: LUCAS
 Chlorinated:
 Repeat No:
 C12 Total:
 C12 Free:
 C12 Combined:

Test Requested Test Result	Lab Number	Method Number	Analyst Number	Date Analyzed
Trihalomethane LISTED BELOW ug/l	71276	524.2	2597	11/15/17
Haloacetic acid 5 LISTED BELOW ug/l	71277	EPA 552.3	5582	11/20/17
CHLOROFORM 32.4 ug/l	71159	524.2	2597	11/15/17
BROMOFORM 1.3 ug/l	71160	524.2	2597	11/15/17
BROMODICHLOROMETHANE 9.6 ug/l	71161	524.2	2597	11/15/17
DIBROMOCHLOROMETHANE 5.2 ug/l	71162	524.2	2597	11/15/17
TTHM 48.5 ug/l	71163	524.2	2597	11/15/17

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Client No: 0000000606
 AR Sheet No: 0540117-AR
 MASI Dublin Laboratory: 877
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 PWS ID No: 4801612
 STU ID No: DS1
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WHITEHOUSE OH 43571-0000

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 Sampler Name: MIKE HILL
 Sample Date: 11/13/17
 Sample Time: 10:15
 Sample Matrix: POTABLE
 Sample Monitoring Point: DS202
 Sample Tap: HYDRANT
 Sample Type:
 Sample Address: 7344 HELLER RD WHITEHOUSE
 Sample ID:

Public
 County: LUCAS
 Chlorinated:
 Repeat No:
 C12 Total:
 C12 Free:
 C12 Combined:

Test Requested Test Result	Lab Number	Method Number	Analyst Number	Date Analyzed
MONOCHLOROACETIC ACID <2.0 ug/l	71164	552.3	5582	11/20/17
DICHLOROACETIC ACID 5.5 ug/l	71165	552.3	5582	11/20/17
TRICHLOROACETIC ACID <1.0 ug/l	71166	552.3	5582	11/20/17
MONOBROMOACETIC ACID <1.0 ug/l	71167	552.3	5582	11/20/17
DIBROMOACETIC ACID 1.8 ug/l	71168	552.3	5582	11/20/17
TOTAL HALOACETIC ACIDS (HAA5) 7.3 ug/l	71169	552.3	5582	11/20/17

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WHITEHOUSE VILLAGE OF
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 PO BOX 2476

Client No: 000000606
 AR Sheet No: 0540118-AR
 MASI Dublin Laboratory: 877
 MASI Cincinnati Laboratory: 4100
 PWS ID No: 4801612
 STU ID No: DS1
 PO No:

WHITEHOUSE OH 43571-0000

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: WHITEHOUSE VILLAGE OF	Public
Sampler Name: MIKE HILL	County: LUCAS
Sample Date: 11/13/17	Chlorinated:
Sample Time: 10:40	Repeat No:
Sample Matrix: POTABLE	C12 Total:
Sample Monitoring Point: DS201	C12 Free:
Sample Tap: HYDRANT	C12 Combined:
Sample Type:	
Sample Address: 7125 BERKEY SOUTHERN RD WHITEHOUSE	
Sample ID:	

Test Requested Test Result	Lab Number	Method Number	Analyst Number	Date Analyzed
Trihalomethane LISTED BELOW ug/l	71278	524.2	2597	11/15/17
Haloacetic acid 5 LISTED BELOW ug/l	71279	EPA 552.3	5582	11/20/17
CHLOROFORM 33.7 ug/l	71172	524.2	2597	11/15/17
BROMOFORM 1.4 ug/l	71173	524.2	2597	11/15/17
BROMODICHLOROMETHANE 9.6 ug/l	71174	524.2	2597	11/15/17
DIBROMOCHLOROMETHANE 5.1 ug/l	71175	524.2	2597	11/15/17
TTHM 49.8 ug/l	71176	524.2	2597	11/15/17

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 WHITEHOUSE OH 43571-0000

Client No: 0000000606
 AR Sheet No: 0540118-AR
 MASI Dublin Laboratory: 877
 MASI Cincinnati Laboratory: 4100
 PWS ID No: 4801612
 STU ID No: DS1
 PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: WHITEHOUSE VILLAGE OF	Public
Sampler Name: MIKE HILL	County: LUCAS
Sample Date: 11/13/17	Chlorinated:
Sample Time: 10:40	Repeat No:
Sample Matrix: POTABLE	C12 Total:
Sample Monitoring Point: DS201	C12 Free:
Sample Tap: HYDRANT	C12 Combined:
Sample Type:	
Sample Address: 7125 BERKEY SOUTHERN RD WHITEHOUSE	
Sample ID:	

Test Requested Test Result	Lab Number	Method Number	Analyst Number	Date Analyzed
MONOCHLOROACETIC ACID <2.0 ug/l	71177	552.3	5582	11/20/17
DICHLOROACETIC ACID 5.6 ug/l	71178	552.3	5582	11/20/17
TRICHLOROACETIC ACID <1.0 ug/l	71179	552.3	5582	11/20/17
MONOBROMOACETIC ACID <1.0 ug/l	71180	552.3	5582	11/20/17
DIBROMOACETIC ACID 2.1 ug/l	71181	552.3	5582	11/20/17
TOTAL HALOACETIC ACIDS (HAA5) 7.7 ug/l	71182	552.3	5582	11/20/17

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WHITEHOUSE VILLAGE OF
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 PO BOX 2476

Client No: 000000606
 AR Sheet No: 0540119-AR
 MASI Dublin Laboratory: 877
 MASI Cincinnati Laboratory: 4100
 PWS ID No: 4801612
 STU ID No: DS1
 PO No:

WHITEHOUSE OH 43571-0000

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: WHITEHOUSE VILLAGE OF	Public
Sampler Name: MIKE HILL	County: LUCAS
Sample Date: 11/13/17	Chlorinated:
Sample Time: 11:00	Repeat No:
Sample Matrix: POTABLE	C12 Total:
Sample Monitoring Point: DS000	C12 Free:
Sample Tap: INSIDE SILCOCK	C12 Combined:
Sample Type:	
Sample Address: 6763 GILEAD ST WHITEHOUSE SPECIAL	
Sample ID:	

Test Requested Test Result	Lab Number	Method Number	Analyst Number	Date Analyzed
Trihalomethane LISTED BELOW ug/l	71282	524.2	2597	11/15/17
CHLOROFORM 24.1 ug/l	71197	524.2	2597	11/15/17
BROMOFORM 1.3 ug/l	71198	524.2	2597	11/15/17
BROMODICHLOROMETHANE 8.3 ug/l	71199	524.2	2597	11/15/17
DIBROMOCHLOROMETHANE 4.8 ug/l	71200	524.2	2597	11/15/17
TTHM 38.5 ug/l	71201	524.2	2597	11/15/17

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Client No: 0000000606
 AR Sheet No: 0540120-AR
 MASI Dublin Laboratory: 877
 MASI Cincinnati Laboratory: 4100
 PWS ID No: 4801612
 STU ID No: 4855849
 PO No:

WHITEHOUSE OH 43571-0000

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: WHITEHOUSE VILLAGE OF	Public
Sampler Name: MIKE HILL	County: LUCAS
Sample Date: 11/13/17	Chlorinated:
Sample Time: 11:25	Repeat No:
Sample Matrix: POTABLE	Cl2 Total:
Sample Monitoring Point: EP001	Cl2 Free:
Sample Tap: SINK	Cl2 Combined:
Sample Type:	
Sample Address: 6010 N TEXAS ST WHITEHOUSE BASELINE EP	
Sample ID:	

Test Requested Test Result	Lab Number	Method Number	Analyst Number	Date Analyzed
Trihalomethane LISTED BELOW ug/l	71274	524.2	2597	11/15/17
Haloacetic acid 5 LISTED BELOW ug/l	71275	EPA 552.3	5582	11/20/17
CHLOROFORM 14.2 ug/l	71146	524.2	2597	11/15/17
BROMOFORM 1.2 ug/l	71147	524.2	2597	11/15/17
BROMODICHLOROMETHANE 7.0 ug/l	71148	524.2	2597	11/15/17
DIBROMOCHLOROMETHANE 4.5 ug/l	71149	524.2	2597	11/15/17
TTHM 26.9 ug/l	71150	524.2	2597	11/15/17

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Client No: 0000000606
 AR Sheet No: 0540120-AR
 MASI Dublin Laboratory: 877
 MASI Cincinnati Laboratory: 4100
 PWS ID No: 4801612
 STU ID No: 4855849
 PO No:

WHITEHOUSE OH 43571-0000

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: WHITEHOUSE VILLAGE OF	Public
Sampler Name: MIKE HILL	County: LUCAS
Sample Date: 11/13/17	Chlorinated:
Sample Time: 11:25	Repeat No:
Sample Matrix: POTABLE	C12 Total:
Sample Monitoring Point: EP001	C12 Free:
Sample Tap: SINK	C12 Combined:
Sample Type:	
Sample Address: 6010 N TEXAS ST WHITEHOUSE BASELINE EP	
Sample ID:	

Test Requested Test Result	Lab Number	Method Number	Analyst Number	Date Analyzed
MONOCHLOROACETIC ACID <2.0 ug/l	71151	552.3	5582	11/20/17
DICHLOROACETIC ACID 3.8 ug/l	71152	552.3	5582	11/20/17
TRICHLOROACETIC ACID <1.0 ug/l	71153	552.3	5582	11/20/17
MONOBROMOACETIC ACID <1.0 ug/l	71154	552.3	5582	11/20/17
DIBROMOACETIC ACID 2.4 ug/l	71155	552.3	5582	11/20/17
TOTAL HALOACETIC ACIDS (HAA5) 6.2 ug/l	71156	552.3	5582	11/20/17

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WHITEHOUSE VILLAGE OF
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PO BOX 2476

Client No: 0000000606
AR Sheet No: 0548232-AR
MASI Dublin Laboratory: 877
MASI Cincinnati Laboratory: 4100
PWS ID No: 4801612
STU ID No: DS1
PO No:

WHITEHOUSE OH 43571-0000

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: WHITEHOUSE VILLAGE OF Public
Sampler Name: MIKE HILL County: LUCAS
Sample Date: 11/13/17 Chlorinated:
Sample Time: 11:40 Repeat No:
Sample Matrix: POTABLE C12 Total:
Sample Monitoring Point: DS000 C12 Free:
Sample Tap: HYDRANT C12 Combined:
Sample Type:
Sample Address: 6317 FINZEL RD WHITEHOUSE SPECIAL
Sample ID:

Test Requested	Lab Number	Method Number	Analyst Number	Date Analyzed
Trihalomethane LISTED BELOW ug/l	71280	524.2	2597	11/15/17
CHLOROFORM 20.1 ug/l	71184	524.2	2597	11/15/17
BROMOFORM 1.2 ug/l	71185	524.2	2597	11/15/17
BROMODICHLOROMETHANE 8.0 ug/l	71186	524.2	2597	11/15/17
DIBROMOCHLOROMETHANE 4.7 ug/l	71187	524.2	2597	11/15/17
TTHM 34.0 ug/l	71188	524.2	2597	11/15/17

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 WHITEHOUSE OH 43571-0000

Client No: 000000606
 AR Sheet No: 0548233-AR
 MASI Dublin Laboratory: 877
 MASI Cincinnati Laboratory: 4100
 PWS ID No: 4801612
 STU ID No: 4855849
 PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: WHITEHOUSE VILLAGE OF	Public
Sampler Name: MIKE HILL	County: LUCAS
Sample Date: 11/13/17	Chlorinated:
Sample Time: 12:00	Repeat No:
Sample Matrix: POTABLE	C12 Total:
Sample Monitoring Point: EP002	C12 Free:
Sample Tap: HOSE BIB	C12 Combined:
Sample Type:	
Sample Address: 8770 DUTCH RD WHITEHOUSE SPECIAL	
Sample ID:	

Test Requested Test Result	Lab Number	Method Number	Analyst Number	Date Analyzed
Trihalomethane LISTED BELOW ug/l	71281	524.2	2597	11/15/17
CHLOROFORM 11.8 ug/l	71190	524.2	2597	11/15/17
BROMOFORM 1.3 ug/l	71191	524.2	2597	11/15/17
BROMODICHLOROMETHANE 6.6 ug/l	71192	524.2	2597	11/15/17
DIBROMOCHLOROMETHANE 4.4 ug/l	71193	524.2	2597	11/15/17
TTHM 24.1 ug/l	71194	524.2	2597	11/15/17