



MUB

Morgantown Utility Board
2017 Consumer Confidence Report
PWSIDWV3303111 Reporting Period: Calendar Year 2017

<http://mub.org>

MORGANTOWN UTILITY BOARD
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Morgantown, WV 26505

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To our customers, neighbors and friends:

2017 was a tremendous year for Morgantown Utility Board. We continued our strong tradition of providing world-class water service to our customers, continued our industry leading work in source water protection planning, actively engaged the public in planning for significant infrastructure upgrades, and did all of this while maintaining the most affordable rates in our state. Our updated Source Water Protection Plan was approved by the Bureau of Public Health, and was the first such plan in West Virginia to achieve that distinction since the passage of SB 373 in 2014. As West Virginia's largest publicly owned utility, these things are important. They demonstrate our steadfast commitment to safeguarding public health and unwavering devotion to managing costs.

Our performance has been recognized with several awards. We won the "Taste Test" and were chosen as the best tasting drinking water at the West Virginia section meeting of the American Water Works Association in May of 2016. More recently, the Bureau of Public Health selected us to receive EPA's prestigious Area Wide Optimization Program (AWOP) award, which recognizes systems who have achieved exceptional drinking water quality through optimized filtration plant performance.

Naturally, none of this would be possible without our staff. The Morgantown area is fortunate to have the dedicated professionals of MUB working to ensure that water and wastewater services remain affordable and of extremely high quality. It's our people that make us an industry leader and an organization for which all of Morgantown can be proud.

For these reasons we are pleased to present our 2017 Consumer Confidence Report. What you will find within the report is that our drinking water not only satisfies all state and federal drinking water standards, but in most cases surpasses those requirements. Our water is of an extremely high quality.

Of course, none of this would be possible without the support of our local residents. Together, we are successfully protecting our water resources and the overall health of our community. Together, we are ensuring our community has capacity to grow.

So please take time to review this year's CCR. In addition to test results and other notices, it contains a host of other information. This includes total water treated during the year 2017, information on our water sources, explanations of likely sources of contamination for various chemicals, and definitions. The report also shows the condition of our raw water, the quality of our treated water, and compares our results against federal and state standards.

If you have questions or comments regarding this report or your water, please feel free to contact Treatment and Production Manager Greg Shellito at (304) 599-2111, visit our website at <http://mub.org>, or follow us on one of our social media sites. In addition, remember that you are always welcome at MUB board meetings, held on the third Monday of each month in Morgantown City Hall at 5:30 p.m. Your input at these meetings is extremely important as we continue to invest in our system.

We thank you for continuing to support MUB's efforts in protecting our water resources and delivering world-class water. Your support makes a tremendous difference.

Sincerely,



J.T. Straface, Chairman



Timothy L. Ball, General Manager

**MUB's annual water quality report is also
available for viewing online and download at**

<http://mub.org/ccr>

Water Standards

To ensure that tap water is of the highest quality, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Drinking water, including bottled water, may be reasonably expected to contain small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

The source of drinking water (both tap and bottled water) includes rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land or through the ground, it dissolves naturally-occurring minerals, and in some cases radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Therefore, water testing standards are established and enforced by the West Virginia Bureau of Public Health and the EPA. The following definitions are the federally regulated standards of comparison for tested contaminants:

Definitions of terms and abbreviations used in the table or report:

- **MCLG** - Maximum Contaminant Level Goal, or the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **MCL** - Maximum Contaminant Level, or the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technique.
- **MRDLG** - Maximum Residual Disinfectant Level Goal, or the level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect benefits of use of disinfectants to control microbial contaminants.
- **MRDL** - Maximum Residual Disinfectant Level, or the highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of disinfectant is necessary to control microbial contaminants.
- **AL** - Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
- **TT** - Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.
- **ND** - Non-Detectable, the amount of analyte present is below the level that could be detected or reliably quantified using a particular EPA approved analytical method.

Abbreviations that may be found in the table:

- ppm - parts per million or milligrams per liter
- ppb - parts per billion or micrograms per liter
- NTU - Nephelometric Turbidity Unit, used to measure cloudiness in water
- NE - not established
- N/A - not applicable

Important note!

Some people may be more vulnerable to contaminants in drinking water than the general public. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

In 2017, MUB treated and distributed
3,670,000,000 gallons of water

If you were to place that water in one gallon milk jugs and place those milk jugs side-by-side, they would go around the circumference of the continental United States 37 times!



Inorganic Chemicals

Inorganic contaminants, such as salts and metals, may be naturally occurring or the result of urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

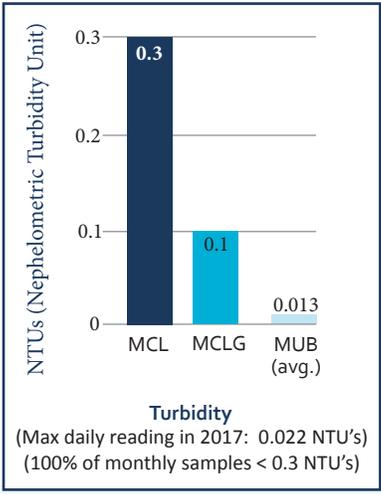
The tables to the right present our testing for inorganic chemicals, including the likely sources of contamination for each parameter. **Values listed as ND (non-detectable) were too small to be detected. Non-detectable means that the amount present, if any, was so small that it cannot be detected using the prescribed testing protocol established by the United States Environmental Protection Agency. That result is excellent and is what we would expect.** One part per million (ppm) means that one pound of a substance can be detected in a million pounds of water. In other words, one part per million is approximately one drop per 10 gallons of water. One part per billion (ppb) is approximately one drop per ten thousand gallons of water.

Parameter	Units	MCL	MCLG	MUB's Range of Results
Nitrate	ppm	10	10	0.40 - 0.59
Likely sources: Runoff from fertilizer use, leaching from septic tanks sewage, erosion of natural deposits				
Barium	ppm	2	2	0.0241 - 0.0470
Likely sources: Discharge from drilling wastes, discharge from metal refineries, erosion of natural deposits				
Fluoride	ppm	4	4	0.54 - 0.63
Likely sources: Erosion of natural deposits: additive to water to promote strong teeth: discharge from fertilizer and aluminum factories				

In addition to the parameters listed in the table above, MUB also tested for Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cyanide, Mercury, Nickel, Selenium and Thallium and all were found to be Non-Detectable.

Turbidity

Turbidity is generally thought of as the cloudiness of water. It is one way to measure the removal or inactivation of certain targeted microorganisms. At high levels it can impair the disinfection process.



Parameter	Units	MCL	MCLG	MUB's Annual Average
Alkalinity	ppm	N/A	N/A	57.8
Hardness	ppm	N/A	N/A	113.6
Iron	ppm	0.3	N/A	0.012
Manganese	ppm	0.05	N/A	0.015
pH	std units	6.5-8.5	N/A	7.90
Total Dissolved Solids (TDS)	ppm	500	N/A	183

Parameter	Units	MRDL	MRDLG	MUB's Annual Average
Chlorine *	ppm	4	4	1.24 **

* Water additive used to control microbes

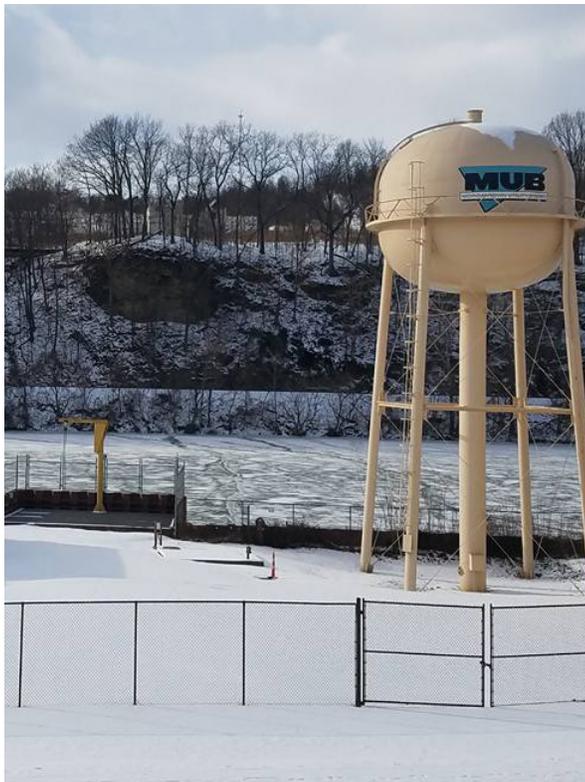
** Range of daily readings in 2017: 1.60 to 0.8 mg/l

Lead and Copper

Lead and copper analysis is performed once every three (3) years on water samples throughout our water distribution system. Our analysis for 2016 showed that the 90th percentile of the ranked analysis results were, 2.0 ppb for lead and 0.0140 ppm for copper. All results were found to be well below the action levels as set by our state health department. Our next scheduled sampling for lead and copper is set for 2019. Information on our efforts to reduce the potential for lead contamination may be found at <http://mub.org/lead>. Results of our latest testing can be found at the below links:

- Lead: <http://mub.org/ccr-lead>
- Copper: <http://mub.org/ccr-copper>

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The system is responsible for providing high quality drinking water but can not control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap water 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.



No matter the weather or time of day, MUB water treatment staff are on the job, protecting public health!

Radiological

Certain naturally occurring minerals are radioactive and may emit a form of radiation known as alpha radiation. Typical sources include oil and gas drilling operations as well as mining activities. MUB's most recent testing, conducted in 2013, for alpha activity and Radium 226 & Radium 228, were below detectable limits.

Coliform Bacteria - Coliform bacteria is generally thought of as an indicator bacteria. Its presence may indicate that other potentially harmful bacteria may be present. Of the 720 samples taken during 2017, all showed 0% presence of Coliform bacteria.

Cryptosporidium - The Morgantown Utility Board is required under the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) to sample and analyze our drinking water source (raw water) for bacteriologic contaminants. Under the first round of this rule, during 2008 and 2009, we sampled monthly for Cryptosporidium, a protozoan that can cause gastrointestinal illness. The second round of sampling under the LT2 rule was started in September 2015 and concluded in October 2017. Our results have shown only 1 (one) occurrence of this contaminant, in our source water, during the 24 month sampling interval. It should be noted that this data indicates only a minute and isolated presence of crypto in the raw water. Our treatment system uses a multi-barrier approach, including granular and membrane filtration. Membrane filtration provides a positive physical barrier to these pathogens, ensuring their removal so that the finished drinking water meets all federal and state criteria. A full list of results for this sampling can be found at <http://mub.org/ccr-crypto>.

Organic Contaminants - Organic chemical contaminants, including synthetic and volatile organic chemicals, may be by-products of industrial processes and petroleum production. They may also come from gas stations, urban storm water runoff and septic tanks.

Total Organic Carbon - Total organic carbon is naturally present in the environment. Our finished water average for 2017 was 2.00 mg/l.

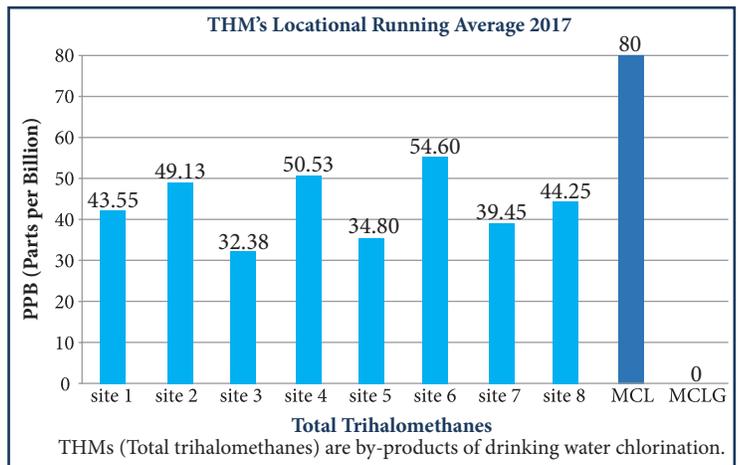
Regulated Volatile Organic Contaminants - Of the 24 regulated VOCs required to be tested all were Non Detectable for the 2017 analysis. Data from this analysis can be found at <http://mub.org/ccr-voc>.

Regulated Synthetic Organic Contaminants (Pesticides, PCBs, Herbicides, etc.) - Regulated synthetic organic chemicals are tested twice every 3 years. Our latest analysis, done during the 2015 year, showed that all chemicals analyzed for were non-detectable. The next scheduled sampling will occur in 2018. Data from the latest analysis can be found at <http://mub.org/ccr-soc>.

Stage 2 THMs and HAA5s - Stage 2 sampling for Trihalomethanes (THM's) and Haloacetic Acids (HAA5's), began in 2012. Sampling and reporting now consists of 8 separate sites and a running 4 quarter average for each individual site. MUB is in full compliance, at all sample locations, with the regulatory limits established by the EPA of 80 ppb for TTHMs and 60 ppb for HAA5s.

THM's

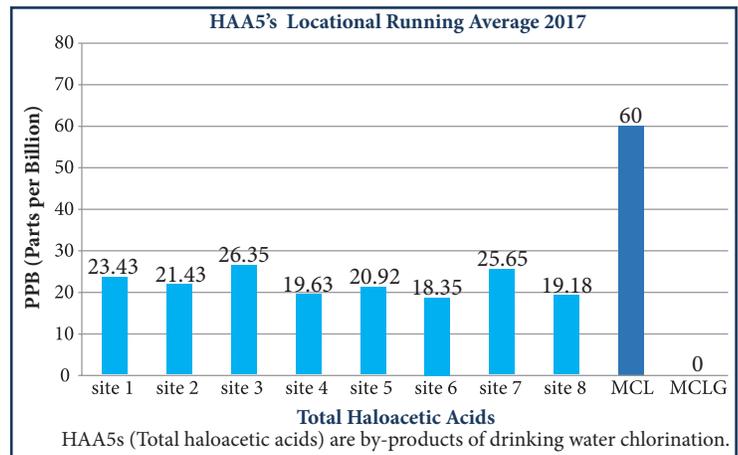
2017 Sample Results			
	Range	Running Avg	Units
Site 1	19.8 - 69.5	43.55	ppb
Site 2	21.1 - 72.4	49.13	ppb
Site 3	12.6 - 51.3	32.38	ppb
Site 4	19.1 - 68.4	50.53	ppb
Site 5	12.0 - 63.9	34.80	ppb
Site 6	24.1 - 84.5	54.60	ppb
Site 7	12.4 - 72.4	39.45	ppb
Site 8	13.2 - 92.7	44.25	ppb



Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or nervous system, and may have an increased risk of getting cancer.

HAA5's

2017 Sample Results			
	Range	Running Avg	Units
Site 1	15.5 - 34.3	23.43	ppb
Site 2	15.0 - 29.6	21.43	ppb
Site 3	10.2 - 51.8	26.35	ppb
Site 4	15.4 - 23.9	19.63	ppb
Site 5	9.67 - 27.1	20.92	ppb
Site 6	16.1 - 22.7	18.35	ppb
Site 7	10.9 - 37.3	25.65	ppb
Site 8	11.1 - 28.8	19.18	ppb



Unregulated Contaminants

Round 3 for the unregulated contaminates monitoring commenced in 2013 and concluded in 2014. This information can be found at <http://mub.org/ccr-ucmr3>. Round 4 for the unregulated contaminant monitoring will commence in 2019.

Our Water Source

In 2017, MUB produced 3.67 billion gallons of drinking water, an average of 10.042 million gallons per day. The main source of drinking water for the Morgantown area is surface water from the Monongahela River, which supplied 76.7 percent of the area's drinking water. The remaining 23.3 percent of our raw water supply was taken from the Cobun Creek reservoir.

To ensure a safe and acceptable product to our customers the Utility constantly monitors our two sources of raw water. The average results of these analyses are shown in the chart to the right. Results for special monitoring related to nearby gas wells are available at on MUB's website by visiting <http://mub.org - Services - then under Water Resource Protection or by visiting http://mub.org/mip>.

MUB works through various water industry associations and watershed groups to promote best management practices, to support important programs and improvements to protect the water environment, and to contribute to improved policy making and regulation affecting our water quality.

Source Water Assessment

During 2017 MUB continued its efforts to protect our source water. During that time progress was made to continue upstream water monitoring, develop plans for the installation of a continuous upstream monitoring station, development of a more accurate water model to predict flow rates and time of travel in the Monongahela river. During 2018 the source water protection plan will be updated and submitted to the WV Department of Health and Human Resources (WVDHHR). A public version is available at <http://mub.org/swpp>.

Parameter	Units	Average Results	
		River	Cobun
Silver (Ag)	ppm	ND	ND
Aluminum (Al)	ppm	0.343	0.192
Arsenic (As)	ppm	ND	ND
Barium (Ba)	ppm	0.042	0.078
Cadmium (Cd)	ppm	ND	ND
Copper (Cu)	ppm	0.035	0.056
Iron (Fe)	ppm	0.502	0.539
Manganese (Mn)	ppm	0.078	1.276
Sodium (Na)	ppm	19.56	8.70
Lead (Pb)	ppm	ND	ND
Selenium (Se)	ppm	ND	ND
Zinc (Zn)	ppm	0.005	0.002
Fluoride (F)	ppm	0.10	0.04
Sulfate	ppm	85.0	16.6
Total Phosphorus (as P)	ppm	0.015	0.02
Nitrate Nitrogen (NO3-N)	ppm	0.52	0.43
Total Recoverable Phenolics	ppm	0.001	0.000
Hardness (as Calcium Carbonate)	ppm	104.8	67.2
Total Dissolved Solids	ppm	192.5	121.5
Hexavalent Chromium (CrVI)	ppm	ND	ND
Chloride	ppm	6.77	12.5
Alkalinity (Total)	ppm	45.2	49.2
Mercury (Hg)	ppm	ND	ND
pH	std units	7.14	6.55
Turbidity	NTU	9.37	8.76

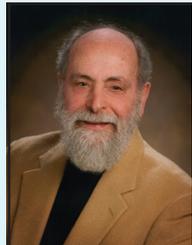
MUB Board of Directors and General Manager



Chairman J. T. Straface



John Ganz



Frank Scafella *



Ron Bane



William Rice



Tom Witt *



General Manager
Tim Ball

* Tom Witt filled the membership vacancy upon the retirement of Frank Scafella.

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