pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRINKING WATER NEWS

TOM WOLF, GOVERNOR • PATRICK MCDONNELL, DEP SECRETARY

January 2020

The Pennsylvania Department of Environmental Protection (DEP) Bureau of Safe Drinking Water is proud to provide updates, information, explanations and reminders to you with this edition of the Drinking Water News. In this issue:

- What is an Operator-in-Responsible-Charge?
- The Importance of System Mapping
- Maintaining an Effective Operator's Daily Log
- Distribution System Investigations
- Alarms and Shutdowns
- Interconnections and USSP
- Health Advisory Levels: Manganese
- Trending Your Data: What Do the Numbers Say About Your System?
- We're Glad You Asked: Lead and Copper Rule Revisions (LCRR)

Your feedback and suggestions are welcome and can be submitted to dagrube@pa.gov.

What is an Operator-in-Responsible-Charge?

Lori Wise, Water Program Specialist, Central Office

Title 25 Pa. Code 302.101 defines an *available operator* as "A certified operator who is onsite or able to be contacted as needed to make process control decisions in a timely manner to protect public health and the environment." Chapter 302.101 also defines an *operator-in-responsible-charge* as "An individual designated by the owner to be the certified operator who makes the process control decisions that directly impact the quality or quantity, or both, of water." These definitions mean that a person designated to be an operator-in-responsible-charge (ORC) must be an available operator, which means they must hold all the relevant classifications (for average gallons per day produced as well as distribution system) and subclassifications for any treatments which the system uses.

For instance, if an operator holds classification WE and works at a particular water system, but the facility has an average flow of 100,000 gallons per day and requires subclassifications 7—Corrosion Control and Sequestering, 9—Ion Exchange and Green Sand, and 12—Non-gaseous Chemical Disinfection, that operator cannot be considered an available operator or an ORC for the system unless the operator meets certification requirements for WD—7, 9, and 12 and submits the appropriate application to the DEP.

It is recommended that all systems designate at least one ORC to clearly define operator duties. For systems that wish to use Standard Operating Procedures (SOPs), §302.1204 requires SOPs to be written and signed by the ORC. As a reminder, operators that do not meet the definition of an available operator (i.e. they are not appropriately certified for the system), may make process control decisions **only** as directed using SOPs approved by an operator in-responsible-charge. If the SOPs do not contain procedures regarding specific treatment objectives, then an available operator or the ORC must be available for making process control decisions.

Water Classes

Class A – Greater than 5 MGD
Class B – Greater than 1 MGD but less than or equal to 5 MGD
Class C – Greater than 100,000 gpd but less than or equal to 1 MGD
Class D – Less than or equal to 100,000 gpd
Class E – Distribution and Consecutive Water Systems
Class Dc – Must meet all of the following conditions:

- System serves less than 500 individuals or has no more than 150 connections, whichever is less; the source of water for the system is exclusively groundwater, requires only disinfection, and is not in violation of DEP rules and regulations.

Class Dn – Meets all the conditions of Dc and does not have any disinfection

Water Subclasses

Subclassification 1 – Conventional filtration
Subclassification 2 – Direct filtration
Subclassification 3 – Diatomaceous earth filtration
Subclassification 4 – Slow sand filtration
Subclassification 5 – Cartridge or bag filtration
Subclassification 6 – Membrane filtration
Subclassification 7 – Corrosion control and sequestering
Subclassification 8 – Chemical addition
Subclassification 9 – Ion exchange and green sand
Subclassification 10 – Aeration and Activated Carbon Adsorption
Subclassification 11 – Gaseous chlorination disinfection
Subclassification 12 – Non-gaseous chemical disinfection
Subclassification 13 – Ultraviolet disinfection
Subclassification 14 – Ozonation
Subclassification 15 – Laboratory Supervisor

For more information on classes and subclasses please visit our website. Questions may be directed to Lori Wise, Water Program Specialist, lowise@pa.gov, 717-772-4056.

The Importance of System Mapping

Andrew Kaufman, Compliance Specialist, Southwest Region

It's underestimated how useful of a tool something as simple as a map can be, and when it comes to a Public Water System, even a basic map of your system is an important and helpful resource to have at hand. Mapping of geographical areas dates back further than the establishment of the first American colony, and it can be just as valuable of a resource today as it was back then.

With a Public Water System, the maps are specifically designed to be of use to the operators in both times of normal operations and in emergencies. The level of detail and information on a system's map can vary from a basic layout of the system's water lines to more in-depth charts of elevations, pipe sizing, pressure zones, valve locations, pressure releases, blow off locations, and any more useful pieces of information.

In an emergency, a valve or section of piping which needs to be located quickly can be found by anyone with an up-to-date map. They are useful in routine care and maintenance of the distribution system when preforming flushing and valve exercises. A detailed map is useful when evaluating a system for upgrades, or expansion. They can even be utilized to help with asset management.

Maps are also valuable in passing down information, data, and important locations of all the components of your system from operator to operator over the years. With some systems being more than 200 years old, such as the Philadelphia Water Department which was established in 1801, system maps have surely been imperative in passing knowledge of the system down through the centuries.

Originally system maps were large charts that took up drawers of space in order to provide the level of detail needed for a system to glean the required information, and actually many systems still maintain and utilize this tried and true method. However now with the advancement of technology, and more specifically GPS (Global Positioning System) and computing capabilities, GIS (Geographic Information System) mapping has risen as an invaluable tool to add to traditional mapping methods. Now, with this innovation, Public Water Systems can specifically pinpoint the physical locations of their utility components, such as pipes, valves, pumps, meters and other facilities. With GIS systems they are able to better care for their utilities by being able to identify trends in water main breaks which allows a system to prioritize pipe replacement and rehabilitation projects.

GIS also opens other opportunities to track the health of a system, such as being able to pair it with hydraulic and hydrologic modeling which can then show system performance and allow identification of areas for necessary improvement. Both preventative maintenance like system flushing and reactive maintenance like water line repair can be improved with an accurate map. Tracking aging infrastructure can also be made easier to help improve a system's asset management which could even help a system save money by allowing for accurate and appropriate replacement of aging system components before they fail, and even help prevent accidental premature replacement of other components before their lifespan is reached. GIS can even allow for system maps to be accessed in the field from multiple devices by multiple system workers, which can lead to faster more efficient repair and maintenance.

Overall the usage and maintenance of system mapping can greatly help in the care and operation of any system by allowing anyone associated with it to readily answer important questions such as: where on earth is said component, what size is it, when was it installed and how long will it last, quantity and type, how does it interact with everything else, what might happen if we do this, and lastly the most important question of all, what has changed over time and why.

Finally, as a reminder, the 2018 General Update to the Chapter 109 Safe Drinking Water regulations added specific requirements to the system mapping provisions found in Title 25 Pa. Code §109.706(b). System maps should contain the following elements: source and treatment plant locations; size and location of storage facilities; pump station locations; size, location and construction material of pipes; pressure zones; interconnections with other public water systems; and monitoring locations.

Maintaining an Effective Operator's Daily Log

Richard Kirby, Compliance Specialist, Northwest Region

Maintenance of a good Operator's Daily Log (ODL) is an essential task. This record serves three purposes: to ensure water safety for the consumer, to meet monthly reporting requirements, and to track and monitor the effectiveness of your treatment processes. The ODL format may consist of individual monthly log sheets or a logbook containing all required information. Large facilities, with multiple treatment processes, may maintain several ODLs. The ODL will be used to record Accreditation-by-Rule parameters and data required for the monthly operational report.

Used to record Accreditation-by-Rule parameters such as analysis of disinfectant residual, the ODL should contain the analyst name or initials, sample collection location, analysis date, analysis time, and result. Handwritten records should be made in permanent ink. Changes made to records should only be done in a way that the original entry remains visible, includes the initials of the person making the changes, and reasons for the changes. These requirements apply to both entry point samples and distribution samples used for compliance or performance monitoring.

To comply with the requirement to prepare a monthly operational report, the ODL should contain all the information listed above as well as the daily water production, daily treatment chemicals (gallons or pounds of each chemical used), clearwell and storage tank water levels, maintenance performed, and operational problems. Under maintenance performed, the operator should record all maintenance, which includes calibration, replacement of chemical feed pumps and turbidimeters, addition of chemicals to day tanks, chemical deliveries, and any maintenance on treatment plant components.

Effective operators use the information contained in the ODL to track the overall condition of the water treatment plant, sources of supply, and treatment processes by looking for trends in the data collected. The ODL is essential in alerting for situations:

- If chlorine demand is increasing, a change in the quality of the source such as a failure of a well casing or contamination of a surface water source may have occurred.
- If iron or manganese treatment is installed and levels are increasing, an issue with the backwash process or the need for media replacement may be indicated.
- If a chemical feed pump foot valve or injector clogs every 4 months, the operator can be proactive and schedule cleaning or replacement of the parts every three months to prevent future failures.

The ODL should be maintained onsite for no less than 2 years (although some components such as records of calibrations may need to be kept longer) and be made accessible to the Department for review at any time. The ODL helps everyone meet our common goal—safe, potable water for everybody.

As a reminder, the results of analyses are required to be reported to the Department through DWELR by the 10th of the month following the end of the required monitoring period. Sample results submitted after the 10th of the month will result in monitoring or reporting violations.

Distribution System Investigations

Patricia Miller, Compliance Specialist, Southwest Region

Your Public Water System may have recently been notified that it needed to submit a Distribution System Investigation or DSI. But what caused your system to trigger a DSI and what exactly are you required to do when notified to submit a DSI?

A DSI is triggered when your system reports disinfectant levels that do not meet the minimum of 0.2 mg/l at a single location in your distribution system for two months in a row. This is a new requirement under the Disinfection Requirements Rule and is formalized in Title 25 Pa. Code 109.710(e)(5) of the Rules and Regulations. But why was this new requirement included in the new regulations? Because it's an important measure to ensure that your customers receive water from your distribution system that is protective of public health. Finished water can become contaminated in your distribution system through line breaks, leaks or corrosion or even altered by physical, chemical or biological reactions. Maintaining a disinfectant residual of 0.2 mg/l can help control microbial growth in the distribution system. Having low disinfectant levels for two months in a row at the very same location indicates a problem in your distribution system that needs to be investigated and addressed promptly to protect public health. The DSI will do just that.

By conducting a DSI, your system will investigate the cause(s) of the low disinfectant levels at specific sites within your distribution system and determine corrective actions to address the underlying cause of the low disinfectant levels. Per §109.710(e)(5), your completed DSI must be submitted to the Department within 60 days after the second non-compliant sample. The Department has developed a form that will guide you through your DSI, titled the Distribution System Investigation (DSI) and Corrective Action form 3930-FM-BSDW0567 on the Department's eLibrary.

While you are not required to use this specific form, the Department highly encourages it to ensure that you take all necessary steps to conduct a thorough and complete investigation. Section 3 of the DSI form, titled Investigation Questions, is particularly helpful. It includes three sections that are specific to your type of system, including questions for a plumbing system with only a single service connection, for a distribution system with multiple service connections and for distribution system storage facilities. Each section contains detailed questions specific to that particular type of system and can give you valuable suggestions to identify issues leading to decreased disinfection residuals. By using this form, you should be able to identify the cause of low disinfection residuals and determine your corrective measures to prevent a recurrence.

Points to remember:

- A DSI is triggered when two samples taken at the *same* location in the distribution system fail to meet the minimum disinfectant residual level of 0.2 mg/l for *two consecutive months*.
- A DSI needs to be completed and sent to the Department within 60 days of triggering the DSI.
- A DSI needs to determine the cause of low disinfectant residual and identify corrective actions.
- You are encouraged to use the DEP DSI form to complete your DSI. This form can be located by searching under forms for document number 3930-FM-BSDW0567 on the Department's eLibrary.
- As always, contact your local Sanitarian if you have any questions.

Alarms and Shutdowns

Zachary Duchow, Compliance Specialist, Southcentral Region

As of August 20, 2019, *all filter plants* treating a surface or GUDI source must be equipped with *alarms*. Furthermore, any filter plant that is not continually staffed while the plant is operating must also be equipped with *shutdown* capabilities. Alarms must be capable of notifying the operator on duty of events triggering alarms and shutdowns. Alarms should include audible and visual notification. These alarms (and shutdowns) are required to be set at levels no less stringent than specified in the regulations (Title 25 Pa. Code 109.602).

This list includes:

- All applicable MCLs, MRDLs and Treatment Techniques
- Individual Filter Effluent Turbidity (IFE)
- Combined Filter Effluent Turbidity (CFE)
- Entry Point Disinfectant Residual
- Water Levels to Maintain Adequate CT for *Giardia* Inactivation

All setpoints must be established in your operation and maintenance (O&M) plan.

Please note that the maximum CFE turbidity level in 95% of monthly samples is dependent upon filtration technology and any permit special condition(s). However, the Department has set optimization goals through its Filter Plant Performance Evaluation (FPPE) program of ≤ 0.10 NTU in at least 95% of all samples. All filter plants are encouraged to meet or perform better than this goal.

When determining alarm set points, ask yourself: What are my typical values? Your alarms should let you know when your plant has been upset and is operating outside the norm. Let's take turbidity for example.

Consider a conventional plant that typically produces a CFE turbidity of 0.05 NTU. Setting the alarms at the regulatory limit of 0.30 NTU is not ideal – that's 6 times its normal turbidity!

Operators often ask what values they should use for their minimum chlorine residual and clearwell level. There is no one size fits all answer since every plant is unique. Operators are encouraged to utilize the *Giardia* and Virus Inactivation Excel Spreadsheet to help them find appropriate setpoints. Use your current alarm setpoint values and create a "worst case" calculation to determine if at least 1.0 log *Giardia* inactivation is achieved. Remember to use the highest observed pH and lowest temperature when calculating worst case. Give yourself a little wiggle room; don't have your system alarm at exactly 1.0 log. Make it a little higher to allow yourself more time to respond to a situation and avoid a Boil Water Advisory.

Once you have your alarms and shutdowns appropriately established, the regulations require you to test them at least every quarter (more often is encouraged!). Simulated testing of shutdown capabilities is acceptable. *Remember to document your work!*

If you have any questions your FPPE staff and local Sanitarian will be happy to help!

Interconnections and USSP

John Cairnes, Compliance Specialist, Southeast Region

Beginning in 2019, all community water systems are required to develop an Uninterrupted System Service Plan (USSP), ensuring that water meeting all applicable MCLs, MRDLs, treatment techniques and system pressure requirements are continuously served to customers under emergencies in which the system may experience a power loss (Title 25 Pa. Code 109.708). Systems are required to identify critical facilities – facilities necessary to maintain water quality and quantity – and plan on provisions needed to maintain continuous operations.

One of the available provisions is the use of one or more interconnections with other water systems. While it is not an option for all systems, many water systems already have them in place. This has led to some questions among consecutive water suppliers about their use in a USSP. For example, if a water system purchases all of its water from another system, and relies on the seller to maintain an adequate supply and chlorine residual, does the purchasing system still need to complete a USSP? The answer is: yes. All community water systems must complete a USSP, even if they obtain all of their water from another system.

Another frequent question is: If the interconnection is in constant use, can it be considered both a critical facility and an emergency provision? The answer to that question is also yes. Whether it is the system's sole source of water, or one of many, its use will be vital under emergency conditions.

To best incorporate an interconnection into a USSP, consider first how it functions as a critical facility. Is it the system's only source of water or one of multiple interconnections or other sources? If a system has a combination of interconnections and other source types, can the interconnections alone supply an adequate quantity to meet system needs in all pressure zones if the other sources are temporarily inoperable? Can the seller provide adequate pressure and chlorine residual, or does the purchaser rely on distribution pumps, storage tanks and chlorine booster stations? Additional provisions may be needed to make your USSP effective.

If a system relies entirely on one or more interconnections for its supply, DEP recommends that the responsible officials of the purchasing system confer with their counterparts in the selling system to find out what provisions in their USSP the seller is employing to maintain a continuous supply to the purchaser. Knowing the details of your seller's USSP can help you to optimize your own.

If your interconnection is primarily for emergency use, ensure that it is regularly tested, so that it can be put into use quickly and efficiently during an emergency. A summary of your testing plan and the date the interconnection was last tested should be included in the USSP.

Another consideration, which may be overlooked in the initial draft of your USSP, is the extent and duration of historically documented emergencies and how they relate to the proximity between the selling system and the purchasing system. Is there a likelihood that a single, catastrophic weather event could cause power losses at both systems simultaneously? If this has happened in the past, or is likely to happen, a cooperative planning strategy for both systems may be the solution. This strategy may include personnel and resource sharing, revisions to purchasing agreements and rental contracts for portable generators, among other options.

Finally, your system may not have an interconnection, but you are considering installing one as an alternative provision in your USSP. Be aware that this modification will require a permit from DEP, to ensure that blending pre-treated water from another source does not create water quality or simultaneous compliance problems. Contact DEP Technical Service Division in your region for more information.

Health Advisory Levels: Manganese

Gina Kellett, Compliance Specialist, Northeast Region

Manganese is one of the most abundant metals on earth. It is found in soil, rock, and as it leaches out of the earth's crust, it makes its way into the groundwater. Once in the groundwater, the manganese can contaminate drinking water supplies.

In drinking water, manganese is generally known as a nuisance that can stain laundry, leave black marks on plumbing fixtures, and impart an unpleasant taste in beverages. Historically, these cosmetic issues were the primary focus of manganese treatment. However, recently the focus has widened to include the potential health effects of manganese.

The United States Environmental Protection Agency (EPA) developed a health advisory program that publishes concentrations of contaminants at drinking water specific risk level concentrations for cancer, and concentrations of contaminants at which non-cancer health effects are not anticipated to occur over specific exposure times. Health advisory levels are not legally enforceable federal standards, but they serve as informal guidance for unregulated drinking water contaminants to assist in the protection of public health. However, the Pennsylvania SDWA and Chapter 109 SDW regulations give DEP the authority to require water systems to take corrective actions for unregulated contaminants when levels are above a known health advisory level.

EPA established a Health Advisory for manganese in 2004. The advisory provides guidance on the concentrations below which potential health problems would be unlikely to occur. This Drinking Water Health Advisory does not mandate a standard for action; rather it provides practical guidelines for addressing manganese found in drinking water. For reference:

- EPA's 10-day Health Advisory manganese value for bottle-fed infants younger than 6 months is 0.3 mg/L (or 300 µg/L).
- The one-day and 10-day value for adults and children older than 6 months is 1 mg/L (or 1000 µg/L).
- The lifetime Health Advisory value is 0.3 mg/L, or 300 µg/L.

The potential health effects from over-exposure to manganese are dependent on several factors; the route of exposure, the chemical form of the manganese, age at the time of exposure, and an individual's nutritional state/diet. Much of the data surrounding the potential health effects of manganese are related to inhalation of high amounts of the metal. There is currently limited data on the health effects of manganese when oral exposure occurs. However, there are some cases that report neurological effects in subjects after oral exposure to large amounts of manganese, but the direct causation of these results could not be determined in those cases. Manganism, the condition caused by the over-exposure of manganese, has symptoms similar to that of Parkinson's Disease. These symptoms include weakness, muscle pain, slow speech, apathy, mask-like facial expression, and slow/clumsy movement of limbs. The effects of Manganism are irreversible.

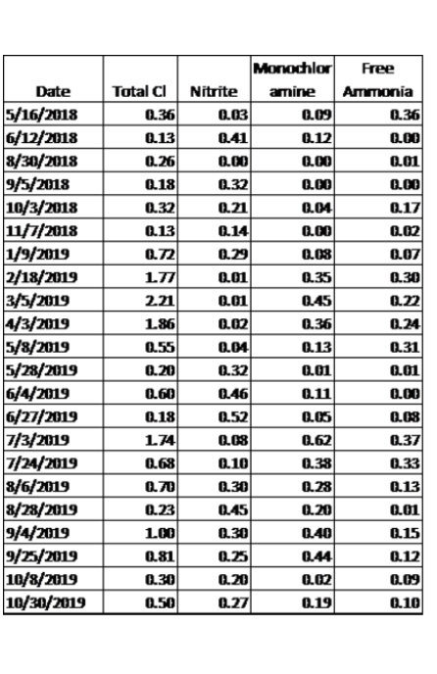
The Pennsylvania Department of Environmental Protection regulates manganese as a secondary contaminant with a maximum contaminant level of 0.05 mg/L. The Department also follows the guidance set by the EPA health advisory levels. The Department considers exceedances of the one-day and 10-day health advisory levels Tier 1 situations requiring the issuance of a Field Order and a Tier 1 "Do Not Drink" Water Supply Warning. NOTE: The lifetime health advisory of 0.3 mg/L is also an acute (10-day) health advisory for infants younger than 6 months. Public water systems that exceed the health advisory levels need to contact the Department within one hour of receiving notification that the health advisory level was exceeded. The Department may then direct initial follow up actions such as confirmation and sampling and public notification as needed. Additionally, water systems that exceed the health advisory levels may be required to obtain a permit to install manganese removal treatment.

Trending Your Data: What Do the Numbers Say About Your System?

Dennis Harney, Coordinator of the Outreach Assistance Provider Program

We all know that more samples are required to be taken than ever before. From daily chlorine residuals at the entry point (at smaller systems) to weekly chlorine samples in the distribution system--and everything from Alachlor to Xylenes in between--how do you make sense of it all? Is it just a bunch of numbers on the page of an operator's log book or on a computer screen? And how do you get your message across to your board members, manager, and customers when there are so many numbers in the way?

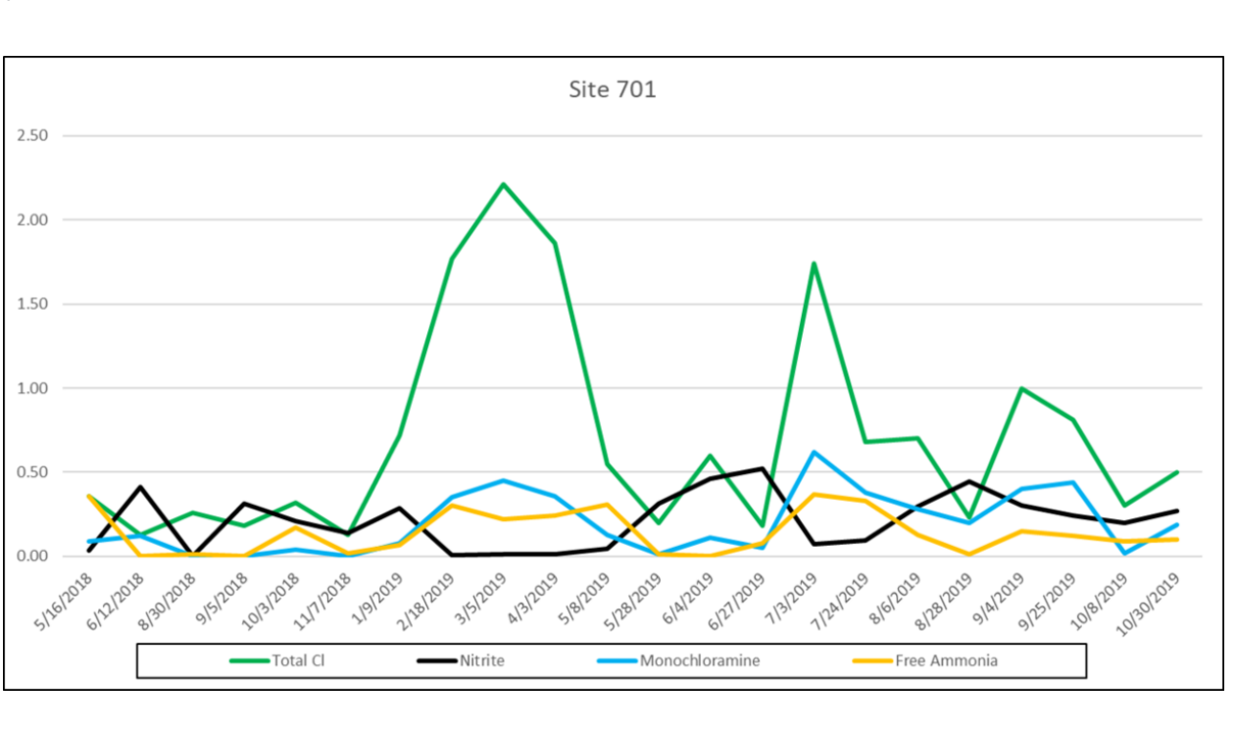
Take a look at the sample results in the table to the right. What is your first reaction? Someone might think "OK great! Every box is filled in, no samples were missed, and everything looks fine." Another person might scan down each column and identify that here or there a result could be better, but no big deal.



Date	Total Cl	Nitrite	Monochloramine	Free Ammonia
5/16/2018	0.36	0.03	0.09	0.36
6/12/2018	0.13	0.41	0.12	0.00
8/30/2018	0.26	0.00	0.00	0.01
9/5/2018	0.18	0.32	0.00	0.00
10/3/2018	0.32	0.21	0.04	0.17
11/7/2018	0.13	0.14	0.00	0.02
1/9/2019	0.72	0.29	0.08	0.07
2/18/2019	1.77	0.01	0.35	0.30
3/5/2019	2.21	0.01	0.45	0.22
4/3/2019	1.86	0.02	0.36	0.24
5/8/2019	0.55	0.04	0.13	0.31
5/28/2019	0.20	0.32	0.01	0.01
6/4/2019	0.60	0.46	0.11	0.00
6/27/2019	0.18	0.52	0.05	0.08
7/3/2019	1.74	0.08	0.62	0.37
7/24/2019	0.68	0.10	0.38	0.33
8/6/2019	0.70	0.30	0.28	0.13
8/28/2019	0.23	0.45	0.20	0.01
9/4/2019	1.00	0.30	0.40	0.15
9/25/2019	0.81	0.25	0.44	0.12
10/8/2019	0.30	0.20	0.02	0.09
10/30/2019	0.50	0.27	0.19	0.10

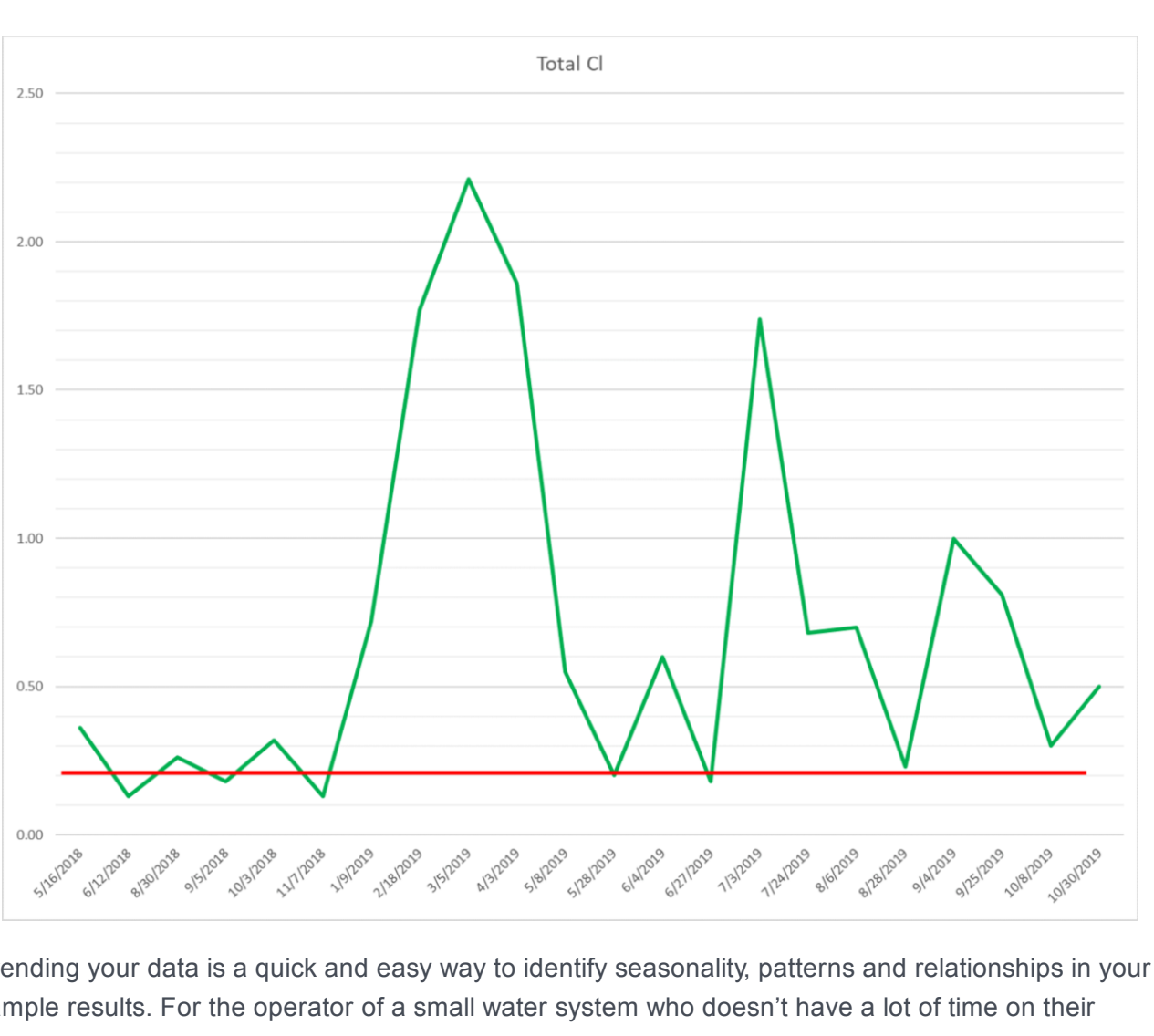
But is this the best way to truly see what's going on in your water system? A lot of numbers in one location can be overwhelming. When you just look at numbers, it's easy to miss something that would otherwise jump out at you. Of course, because you have to report the sample results to DEP, a Sanitarian might call you up when DWELR has flagged one of your results for being out of spec; but, if you already saw that something was going on, could you have taken action instead of missing something that was hiding in the numbers? The answer to this puzzle is *trending your data!*

Here is the same data presented in a graphical way. Take a look at the lines and see if you can spot any trends.



Of course, you can see that each of the lines varies a good bit. For example, the green line in this graph represents the chlorine results, and there is a lot of variability in that line. Still looking at this graph, take a look at how the lines *relate to each other*. When you only had the numbers in front of you while looking at the spreadsheet, did you notice that in this chloraminated system when the chlorine was high, the nitrite was low? While looking at the graph, you probably saw more easily how the black line on the graph (nitrite) was almost at zero when the green line (chlorine) was high, but that may not have jumped out at you just looking at the table of sample results above. In this system, when the yellow line and the black line crisscrossed each other, it illustrated significant changes in water quality, but that would have been nearly impossible to detect just looking at the numbers. As you can see, trending your data can bring new meaning to a large volume of sample results.

But if your system doesn't use chloramines, and if the graph above just looks like a bowl of spaghetti, understand that the same holds true for simpler systems. Trending your data can also help operators who are looking at one data set at a time. What if you looked at this next graph? Would the plot line of just one sample result tell you something? And what if a reference point was added so you could see if you were getting uncomfortably close to noncompliance? How could a graphic like this help you to communicate with decision makers who may not be looking at your sample results as frequently as you are?



Trending your data is a quick and easy way to identify seasonality, patterns and relationships in your sample results. For the operator of a small water system who doesn't have a lot of time on their hands to pore over piles of data in a spreadsheet, it can also be a valuable timesaver. Taking a little time to trend your data can help you make good data-driven decisions *quickly*.

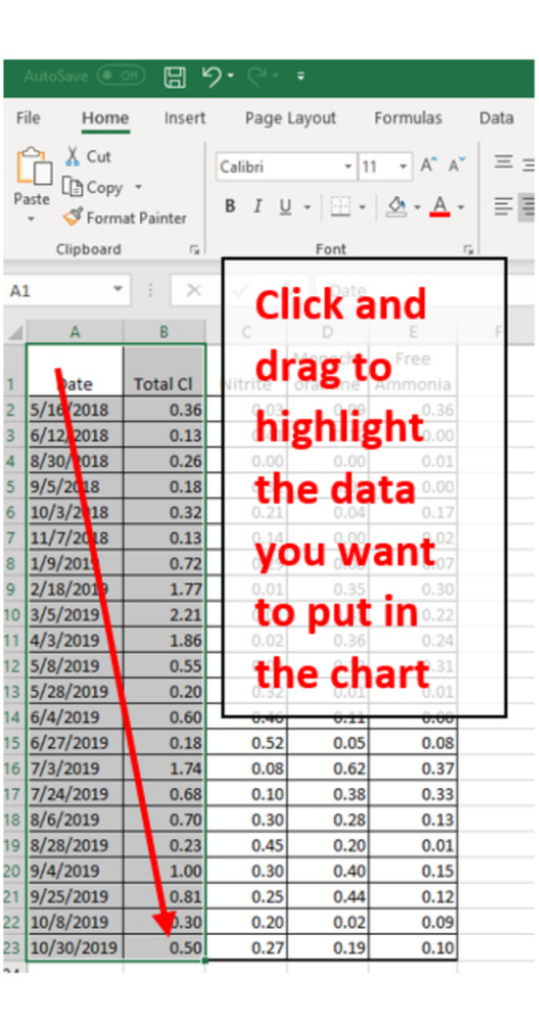
How To Do It:

Let's assume you're working in Microsoft Excel, using the data set from above.

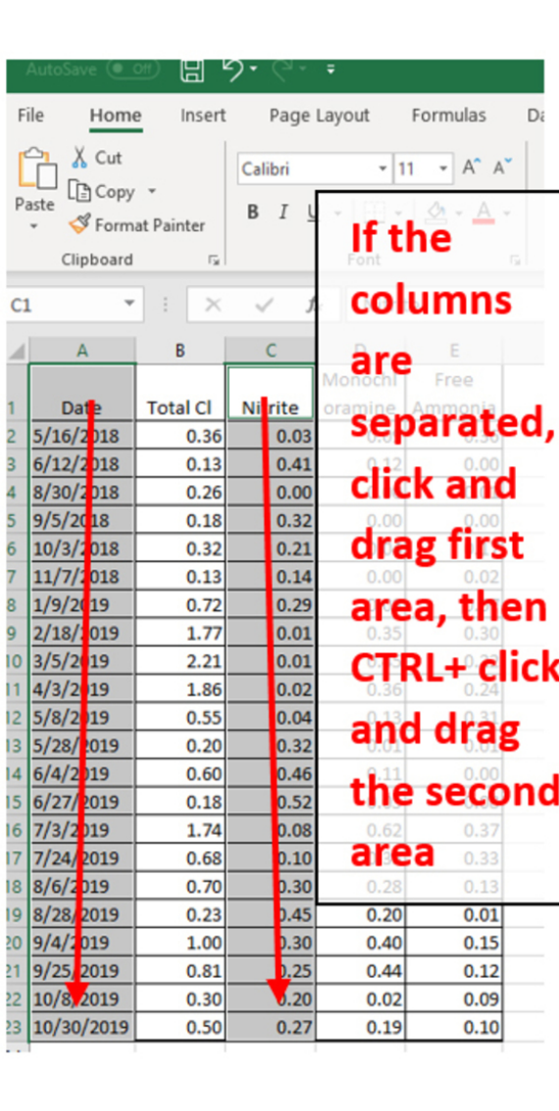
1. Get the data into an Excel spreadsheet. You can do this by manually entering the data into the spreadsheet, or by importing the data from another source; for example, from DWELR or from your continuous chlorine analyzer. Use appropriate column headings, decimal places, and consistent formatting because what shows up on your spreadsheet will show up on the chart.

2. *Select the data* that you would like to graph in your chart. Do this by clicking and dragging your mouse down through the cells containing the desired data in at least two columns; in this case, the cells including the headings *Date* and *Total Chlorine* and the cells including the sample results below those headings.

If two columns of data that you want to put in the chart are not located next to each other, you can select the *Date* heading and the cells below it first, release your mouse button, and then hold down the CTRL button while you select the second range of information; in this example, the data in the *Nitrite* header and the cells beneath it.

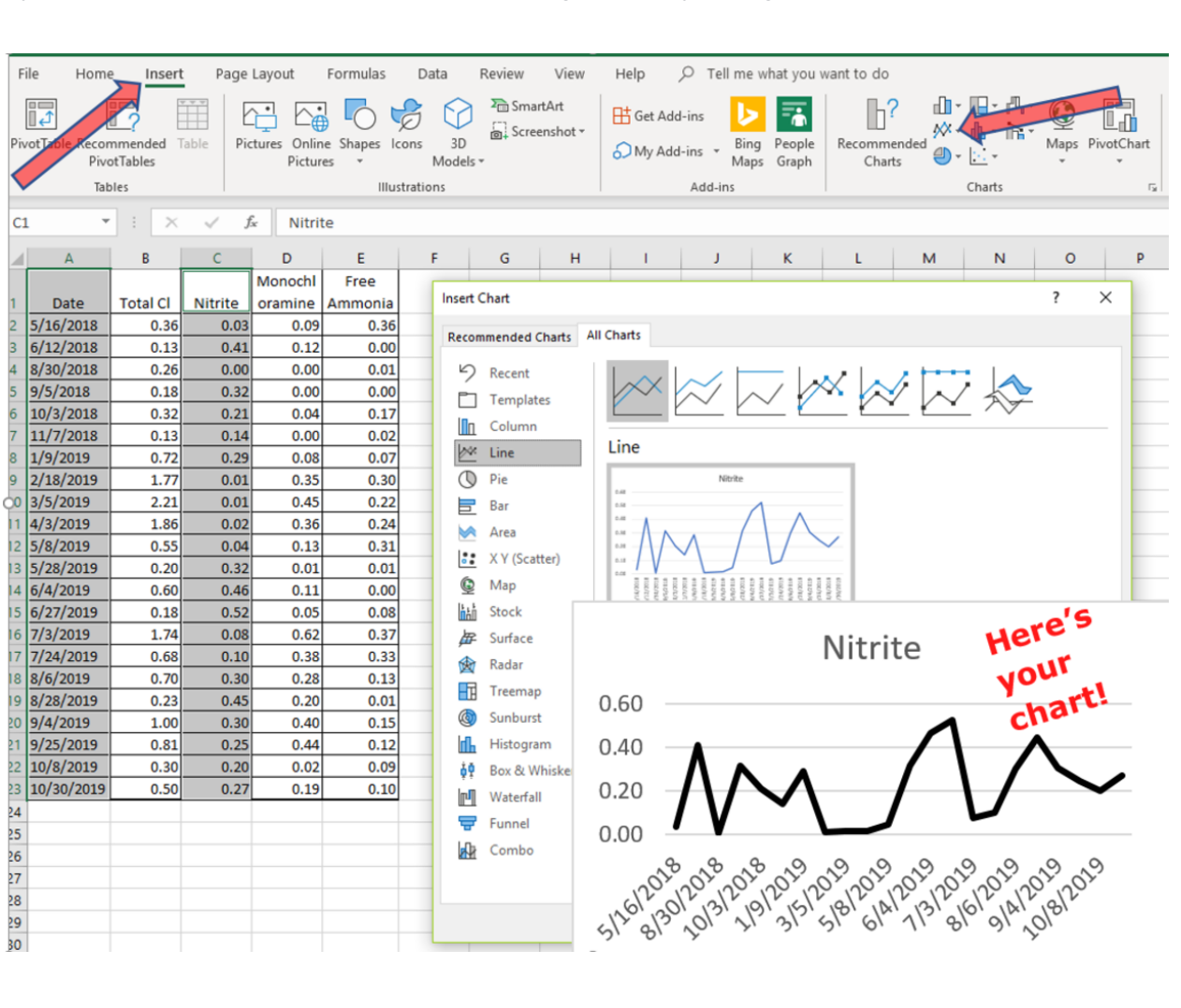


Click and drag to highlight the data you want to put in the chart



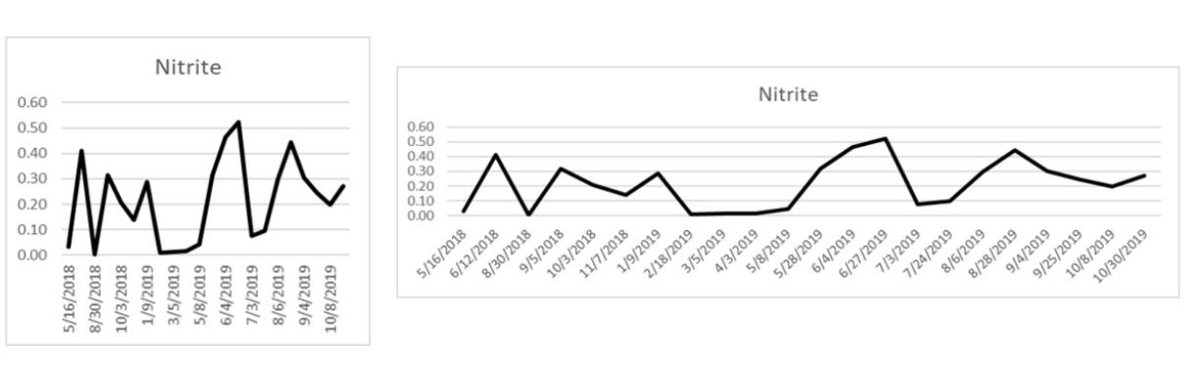
If the columns are separated, click and drag first area, then CTRL+ click and drag the second area

3. Insert the chart into your spreadsheet. One way to do this is to use the *Insert* toolbar. Select a *Line Chart* from the group of Recommended Charts. Excel has easy templates built in, so you're likely to find one that will work well without making too many changes. Here's how:



Here's your chart!

4. *Customize your chart* to help make sense of the information and to communicate your message. You can click and drag the corners of the chart to change the size, to see detail, or to accentuate certain characteristics. One size might highlight variability, while another size might highlight the passage of time, such as we see below. Both of these charts were made using the same data.



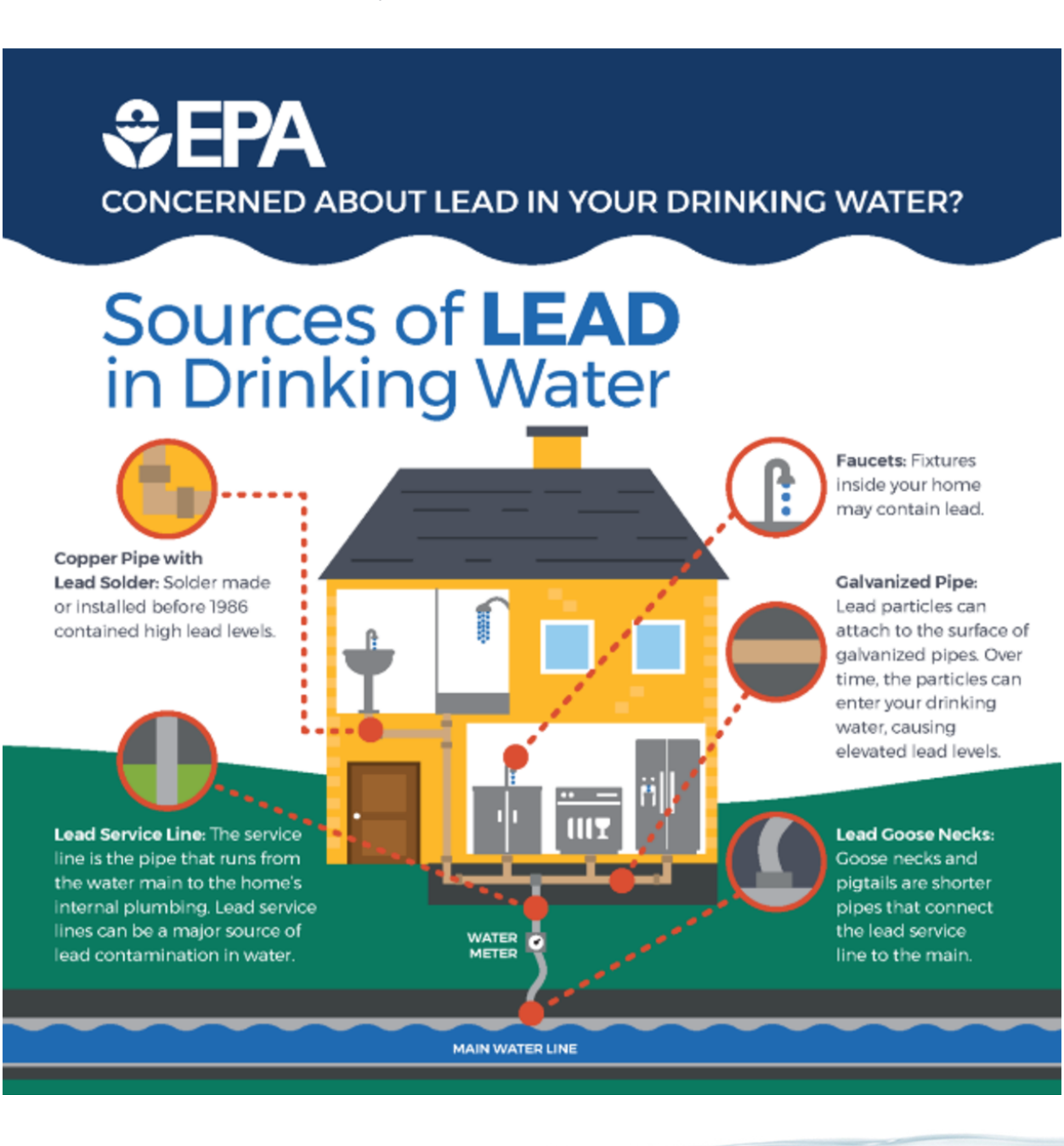
Trending your data is quick and easy and has many benefits, such as readily recognizing issues and trends; and it can help you make better data-driven decisions.

We're so glad you asked!

Q: I heard that EPA published revisions to the lead and copper rule (LCR), is that going to affect my requirements under LCR?

A: You are correct that EPA published *proposed* revisions to the LCR on November 13, 2019, and is currently seeking public comments, which are due on February 12, 2020. The proposed rule can be found here.

While it would be beneficial for you to look at the revised rule to understand what EPA is proposing, this is the beginning stage of the regulatory process and in no way affects the requirements that water systems in PA need to follow. After the public comment period ends, EPA will make edits to the proposed rule based on comments and publish a final rule, which is expected late in 2020. Once the final rule is published, PA DEP will begin to revise its regulations to incorporate the edits to the federal LCR. There may be some early implementation requirements in the federal rule that PA water systems will need to comply with, but most of the changes will occur once PA DEP has published a final rule, several years from now. So, for the time being it is "business as usual" for PA water systems and the LCR, but keep an eye out for articles in future newsletters on this topic.


EPA
CONCERNED ABOUT LEAD IN YOUR DRINKING WATER?
Sources of LEAD in Drinking Water
Copper Pipe with Lead Solder: Solder made or installed before 1986 contained high lead levels.
Faucets: Fixtures inside your home may contain lead.
Galvanized Pipe: Lead particles can attach to the surface of galvanized pipes. Over time, the particles can enter your drinking water, causing elevated lead levels.
Lead Service Line: The service line is the pipe that runs from the water main to the home's internal plumbing. Lead service lines can be a major source of lead contamination in water.
Lead Goose Necks: Goose necks and pigtails are shorter pipes that connect the lead service line to the main.
WATER METER
MAIN WATER LINE

Pennsylvania Department of Environmental Protection, 400 Market Street, Harrisburg, PA 17101

Share this email:

Manage your preferences | Opt out using TrueRemove™
Got this as a forward? Sign up to receive our future emails.
View this email online.

400 Market Street
Harrisburg, PA | 17101 US

This email was sent to .
To continue receiving our emails, add us to your address book.

Subscribe to our email list.