Drinking Water and Groundwater Protection Division

Inventory Background:

The Lead and Copper Rule Revisions require every Community and Non-Transient Non-Community public drinking water system to develop a service line inventory for all connections on the system.

Inventories are intended to be living documents and will need to be updated frequently based on the system's monitoring schedule and any changes that occur as lines are identified and/or replaced. As maintenance is performed, the system must be diligent about going back and updating the inventory.

There are two different inventory templates, one for systems that serve a single building and one that serves multiple buildings. There is also a non-potable inventory for connections to buildings for reasons other than providing drinking water. This guidance document goes through the requirements for the multiple building (and non-potable) inventory.

Lead in Plumbing:

The amount of lead allowed in plumbing equipment has changed over time. Lead service lines were prohibited from use in Vermont after July 1, 1989. If a water system can confirm that the service line was installed after this date, it cannot be lead. So, if you do not know the material, but can confirm that the line was installed after July, 1, 1989, identify the date (month/day/year or at least the year of the installation).

Even if a system was constructed after July 1, 1989, they still need an inventory to document and substantiate the information to be submitted to EPA. **There is no "waiver" from the requirement to complete the service line inventory.**

Goosenecks and pigtails are not considered service lines, but if there are confirmed lead goosenecks or pigtails, there is a place in the inventory to document their presence. Systems need to identify whether the gooseneck/pigtail is lead or not. When present, the gooseneck/pigtail is the piece of pipe connecting the water main and the service line; sometimes it also connects the service line to the meter inside the building. The gooseneck/pigtail is defined as being less than 2-feet in length.

NOTE: Having a lead gooseneck/pigtail is **not** considered having a lead service line. Also, lead goosenecks/pigtails that are or were formerly upstream of galvanized pipes do **not** categorize that galvanized pipe as "requiring replacement".

General Inventory Instructions:

There is a lot of information being asked in the inventory form. Every connection gets its own row in the document. If a connection has multiple services, they all need to be provided with some distinguishing information. If the connection has a non-potable service (such as for process water or designated fire protection system separate from the drinking water service) the system must list those entries on the "Non-Potable" document and submit both completed documents.

Not every column is *required* to have an approvable inventory. The columns required to have an approvable inventory are identified as "required" in the instructions portion of the inventory document, the column headings have red text, and when you start entering an address, the required cells have orange highlighting until the cell is filled in. Inventories with incomplete information in the "required" columns will not be approved.

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Other information being asked in the inventory form may not be necessary to have an approvable inventory, but it is needed for compliance with other parts of the rule. It is ***strongly*** recommended that all columns in the form be completed to make future rule compliance easier in the future.

Most of the columns have a drop-down menu to make filling it out faster and save you from needing to type the same thing over and over. If a column does not have a drop-down menu, then type in the information necessary to satisfy that portion.

Some water systems do not own portions of service lines at all. In the drop-down menus there are options for either "N/A Customer owns 100% of service line" – to be used when the system does not own any part of the service line and "N/A System owns 100% of service line" to be used when the customer does not own any part of the service line. By selecting these "N/A" options, the remaining "required" columns for the system or customer portion do <u>not</u> need to be completed.

There are no "shared service lines" allowed in the inventory. If there is part of a system with a pipe that supplies water to multiple individual connections, that pipe is regarded as a water main for the purpose of the inventory; only after the split/Tee to serve each respective connection is the pipe considered a service line. In the Figure 1 below, the service lines are the black lines after the "Tee"/Y off the water main, going to only a single building.

Figure 1
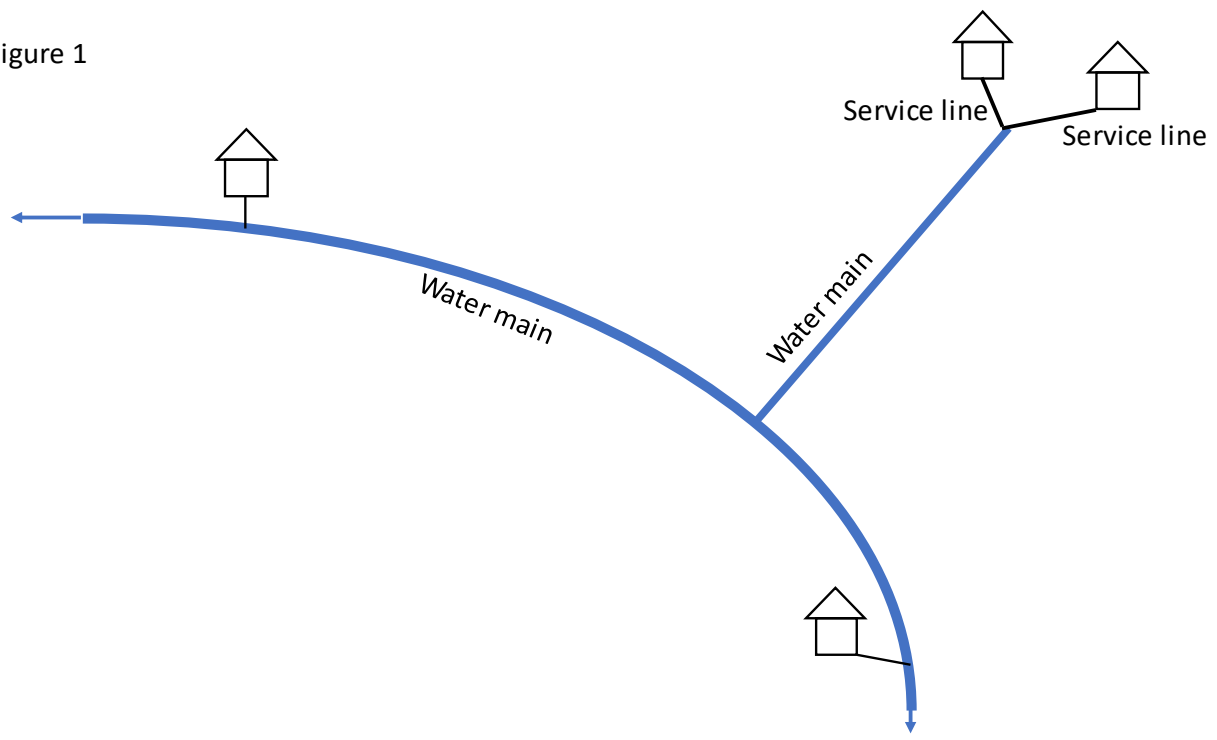
**Inventory Background for Multi-building systems:**

Systems such as fire districts, homeowners' associations, municipalities, or schools with accessory buildings with water service (like Town Hall or the Library, etc.) are required to identify the composition of the piping that connect the water main to the building/structure (see Figure 2 below, lines 1-20 are service lines to be inventoried). For the purposes of the inventories, a water main is a pipe that serves more than one connection. The service line serves only one connection.

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Figure 2
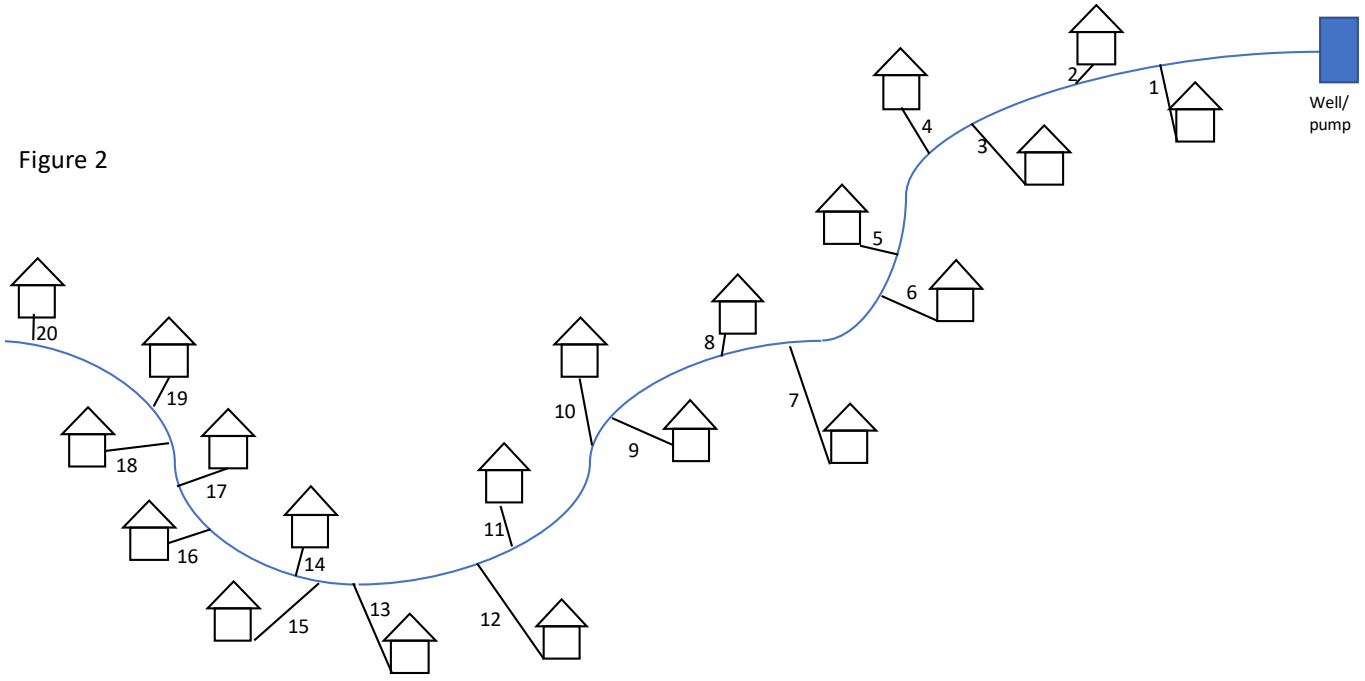
If there is a multiple building system and each building contains multiple units, such as condominiums or townhomes, identify what the piping material is connecting each building to the rest of the system, to the building inlet, so the first internal valve or "Tee" within the building. The inventory does **not** include internal plumbing once it branches off to serve uses within the building. Referring to Figure 3 below, the system would identify lines #1, 2, 3, and 4, coming from the well/treatment house as service lines and not the distribution main, #5 (which is distribution). None of the internal plumbing in the building are considered part of the inventory.


Figure 3
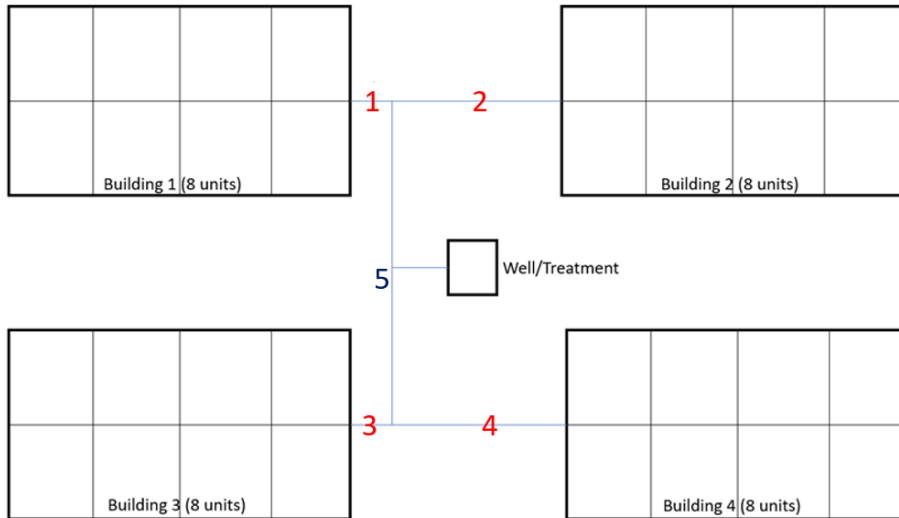
Locational information:

Every connection served by the water system is required to be identified on the inventory and have a means of providing identifying information. This can mean either the full E-911 address or the latitude and longitude of the building AND where it connects to the water main. The preference is to provide both the E-911 address and the latitude and longitude as listed on the form. ***Do not put the resident/owner/tenant name*** since this information may change

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over time. We have also provided a column to enter the SPAN to keep things clear if/when systems need to update their inventories in the future. SPAN can be located here: https://tax.vermont.gov/span-finder

How to identify Latitude/Longitude: The latitude and longitude must be identified down to at least **4 decimal places**. An easy way to identify the latitude and longitude of a location is to go on an online mapping program such as Google Maps. In Google Maps, "right clicking" with the right mouse button on the location in question will provide the latitude and longitude. Be careful to write it down completely and correctly. The longitude <u>MUST</u> contain the minus sign, "-", before the number. The Figure 4 below shows what clicking the right button of the mouse on the Vermont State House on Google maps. The Latitude is 44.26214 and the Longitude is -72.58026.

Figure 4
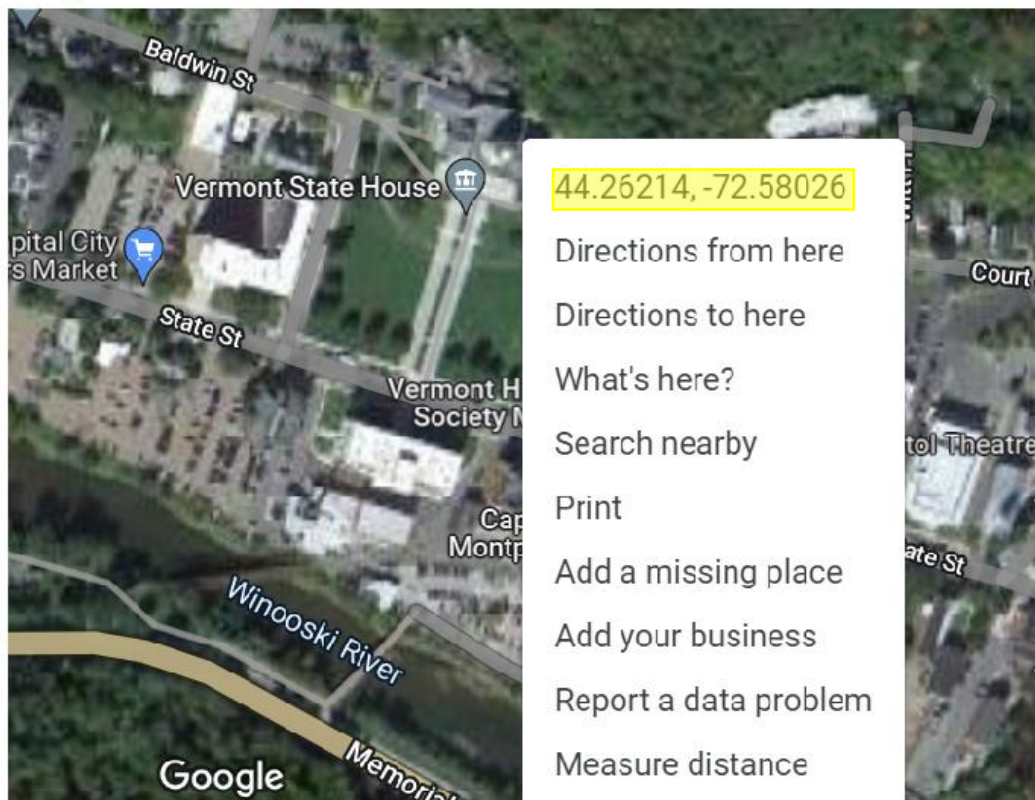
Latitudes in Vermont should be between 42.7 and 45.1. Longitudes should be between -73.5 and -71.2. If the numbers are off from these ranges, the location will not identify as being located within Vermont. For the most specificity, include <u>at least</u> 4 decimal places in the response. For example, 44.26214/-72.58026. The inventory document will flag an error if a number is entered outside of this range.

Service line information:

The material(s) for the entirety of the service line may not be known, but systems are required to exhaust resources to identify as much as they can. Table 1 below identifies the different sources to identify the service line materials. The Multiple connection inventory form has space to put one material type for the system portion and one material type for the private portion. If either portion is contains lead, identify that portion as lead. If there is no lead, identify the material making up the longest portion. Figure 5 below shows the components and service line portions for most (not all) water system distribution systems.

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Figure 5   Example of typical service
line configuration.
Note that not every
system is the same or fits
into this example.
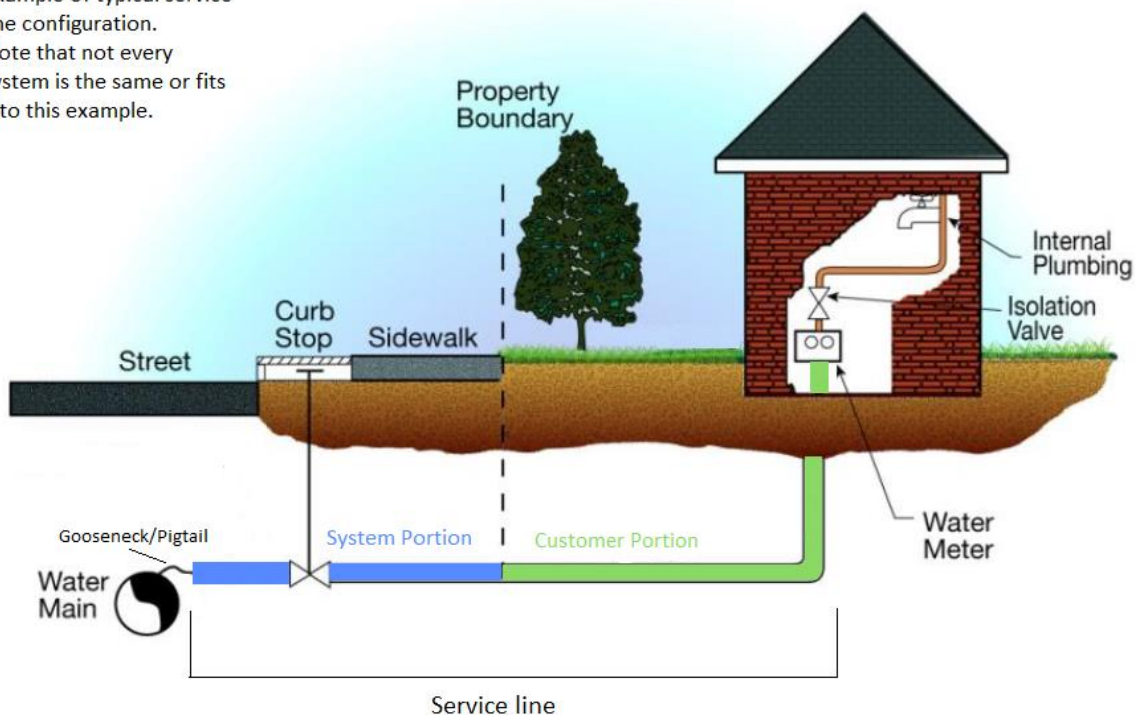
Service Line Change in Ownership:

In most circumstances, the ownership of the service line changes as the line travels onto/across private property. All aspects of the service line must be accounted for (see more about the portions of service lines below). Figure 5 above shows which the portions of the service line needing to be inventoried.

The portions of the service line in Figure 5 above are color-coded in the template document to match the diagram above. The blue is the system portion, the green is the customer portion. The point of change in ownership and what each portion of line may be different based on your system.

Systems need to identify whether the gooseneck/pigtail, (i.e. the shorter portion of piping connecting the service line to the main), is lead or not.

The inventory form has a place to enter the installation date for the service line. If you do not know the exact day, put the **month and year** or **just the year** it was installed. While the date is not required to have an approvable inventory, it will be needed to create the sampling plan later and is in the system's best interest to complete this as best as possible. It can also help to identify if unknown lines were installed before or after the Vermont lead plumbing ban of July 1, 1989. When entering dates, put in the following format: MM/DD/YYYY, for example: 07/04/1776 or just the year 1776 if that is all you know. If the service line has been replaced, enter the replacement date, not the date of the original installation.

Resources to identify service line materials and information:

The inventory has drop-down options to identify the source of information used to identify the material for each connection. Below lists those options and provides some examples[1]:

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[1] The DWGPD is developing training that will identify ways to tell if a service line is lead. Materials will be available on the DWGPD website when they are complete.

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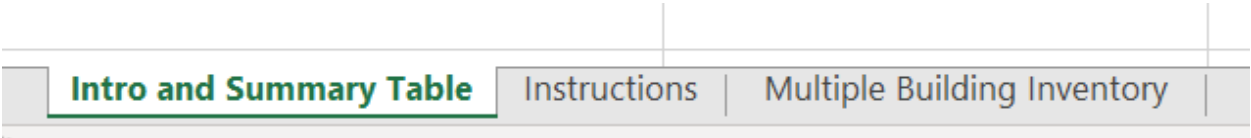| Table 1	
Source of information	Examples
Water System Maps/Drawings	As-built Record Drawings, distribution system maps, other maps or drawings believed to be accurate and complete.
Local/State Permits	Act 250 Permits, Wastewater System and Potable Water Supply Permits, Building permits, etc.
Asset Management Plan	Plans identifying the equipment, their materials, their age, etc.
Water System/Municipal Records	Tie cards, meter inspection records, lister information, other records believed to be accurate and correct.
Visual Inspection – Water System	Visual inspection by water system personnel or personnel contracted by the State or water system. Information/photographs verified by system personnel.
Visual Inspection – Other	Visual inspection from plumbers, homeowners, or other non-system personnel
Swab Test	Using swabs to test the metal of the pipe for lead content.
Local Codes/Regulations	Codes or by-laws prohibiting lead or requiring certain materials after a certain date.
Other	Other resources believed to be accurate and complete.

Most of the service line materials in the drop-down menu are self-explanatory. The Lead and Copper Rule Revisions introduce a new term: "Galvanized Requiring Replacement". "Galvanized Requiring Replacement" are either 1) galvanized lines that are confirmed to be or at any point have been downstream of a lead line or 2) galvanized lines that are downstream of unknown lines or whose history is unknown. If it cannot be certified that the lines are/have not been downstream of lead at any point, they are considered "Galvanized Requiring Replacement". The document will flag those Galvanized Requiring Replacement based on the information provided for each line.

Historic water quality samples CAN NOT be used to identify whether the service line is lead. The Division may approve a sampling framework on a system-by-system basis to use water quality sampling to help identify lines identified as "unknown", but this is not required to complete the inventory.

If the system uses multiple sources to identify the service line material, which is expected, rely on the weight of the evidence. If original permits and purchase orders identify the line as being lead but an interview of pervious staff say they haven't seen lead in that neighborhood, weigh those resources and information provided. When in doubt either due to not enough information or conflicting information, choose to answer on the side of "unknown" if there is no clear material identified.

Use of multiple tabs in the document:

There are 3 tabs in the inventory document shown below: "Intro and Summary Table", "Instructions", and "Multiple Building Inventory". Start with the "Intro and Summary Table" Tab and work your way to the right.

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If the "Intro and Summary Tab" is not available, click the small arrow at the bottom left of the document to switch between the tabs:
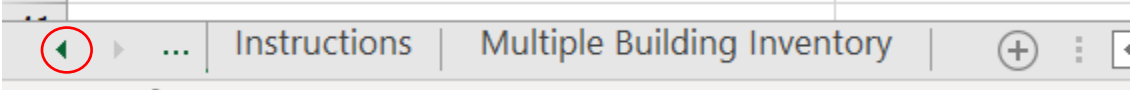
Then you should see the "Intro and Summary Table" tab:

Enter the WSID on the top row of the "Intro and Summary Table" tab and the water system name. Once the inventory is completed, be sure to enter the date. Because the system will need to make updates to the inventory, the date is very important. If you have information behind some of the resources or other comments that would be helpful for us to understand why something was completed the way it was, you can use the optional comment box. This is especially helpful if you select "Other" for the source of information used to identify the service line material(s).

Disregard the information at the bottom of the "Intro and Summary Table", it will fill in automatically as you work through the inventory.

Inventory Instructions
The "Instructions" tab has cell-by-cell instructions of how to complete the inventory. It also identifies the required portions of the inventory. Most of this information is spelled out in this guidance document above also. There are other training materials online should you require additional assistance in completing the inventory.

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