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 single building 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. It is possible to identify "unknown" materials but enter the actual date or year of installation or if you don't know. So, if you do not know the material, but can confirm that the line was installed after July, 1, 1989, then provide that information.

Even if a system/service 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.**

General Inventory Instructions

There is a lot of information being asked in the inventory form. Every connection served gets its own row in the document. Since this is the guidance for the single connection inventory, it is unlikely that the system will identify more than one row of the document. 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 template, the column headings have red text, and when you start entering an address, the required cells have orange highlighting flagging it is required until that cell is filled in. Inventories with incomplete information in the "required" columns will not be approved.

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.

**Inventory Background for Single building systems:**

Systems such as schools or condominiums all under one "roof" and no other satellite or accessory buildings *with water service* must use the single building system template.

Systems need to identify the material(s) supplying water from the source to the building inlet.

There are a few different ways this can happen:

- A well supply line goes into a building, through a meter, through treatment (if applicable) then to the storage tank.
  - Since we need to know what is connecting the source to the building inlet, the service line inventory would identify the supply pipe between the well and the meter. See Figure 1.

Figure 1
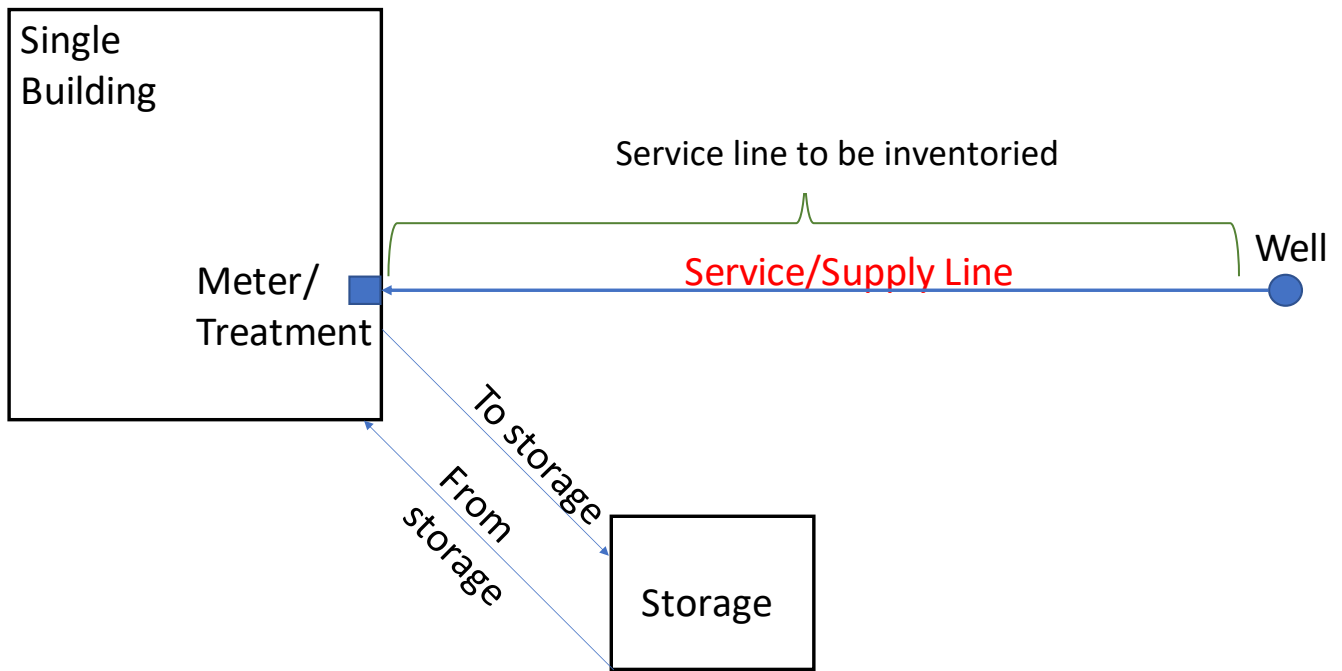
- A well goes to a buried storage tank, then into the building, where it goes through a meter, maybe through treatment, and then branches off to serve the building.
  - The inventory would include the piping connecting the well to the storage tank (segment 1 in Figure 2 below), the piping connecting the storage tank to a pump, if there is one, and then the piping from the tank/pump to the meter (segment 2 below). See Figure 2 below.
  - If the storage tank also has a designated fire protection or process water line (dashed orange line in Figure 2 below), the system completes the inventory as identified the in bullet above and the non-potable line needs to be listed on the non-potable inventory. In this case, the system would provide two inventories, each with one line completed. See Figure 2 below.

Figure 2
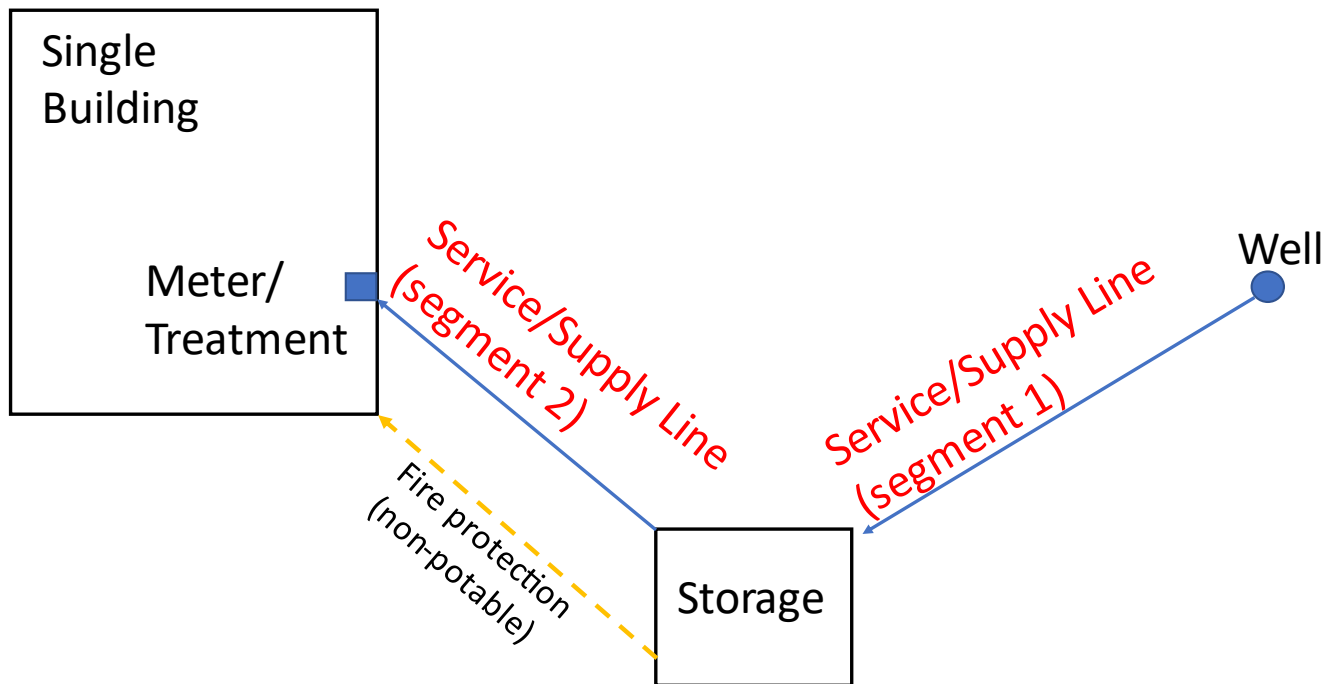
Locational information:

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 the service line/supply pipe connects to the building. The preference is to provide both the E-911 address and the latitude and longitude as listed on the form. For single building systems, this should be easy to identify. ***Do not put the resident/owner/business/tenant name*** since this information may change 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" one time with the mouse on the location will provide the latitude and longitude. Be careful to write it down completely and correctly. The longitude MUST contain the minus sign, "-", before the number.

Figure 3 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 3
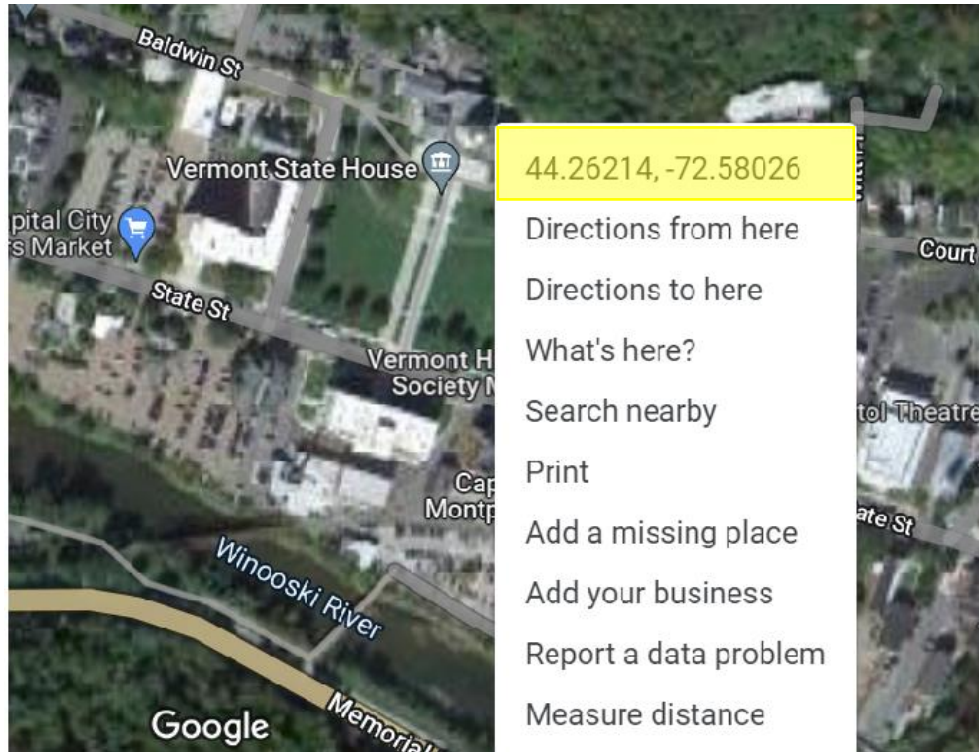
Latitudes in Vermont should be between 42.7 and 45.1. Longitudes should be between -73.5 and -71.2. If the numbers are off from these ranges, the location will not identify as being located within Vermont. For the most specificity, include at least 4 decimal places in the response. For example, 44.26214/-72.58026. 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 use as many possible options as they have available to identify as much as they can. Table 1 below identifies likely different sources of information to create the inventory. For single building systems, there is space for two different materials. If the pipe is the same material throughout, you only need to fill out the "Current building service line material (1)" column then select "Not Applicable" in "Current building service line material (2)" column. If there are two different materials used for the makeup of the service line, use both the "Current building service line material (1)" and the "Current building service line material (2)" columns. If any of this piping is lead, enter that in the "Current building service line material (1)" column. If there are more than two materials, identify any that are lead; if there is no lead, identify and record the materials of the two longest lengths of pipe.

Systems need to identify whether the gooseneck/pigtail is lead or not. The gooseneck/pigtail is the piece of pipe connecting the source of water and the service line; sometimes it also connects the service line to the meter. It is defined as being less than 2-feet in length. It is unlikely that single building systems will have lead goosenecks/pigtails, but if they are identified, they must be listed.

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 after the Vermont lead plumbing ban of July 1, 1989. When

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entering dates, put in the following format: MM/DD/YYYY, for example: 07/04/1776 or just the year of 1776. If the service line has been replaced, put the date of the replacement, not 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]:

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

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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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due to not enough information or conflicting information, choose to answer on the side of "unknown" if there is no clear material identified.
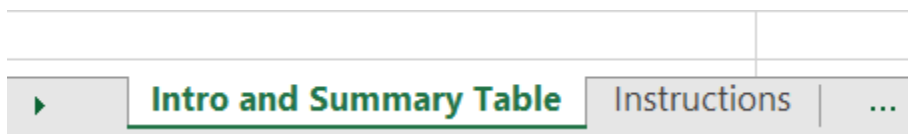
Use of multiple tabs in the document:

There are 3 tabs in the inventory document, "Intro and Summary Table", "Instructions", and "Single building inventory". Start with the "Intro and Summary Table" Tab.
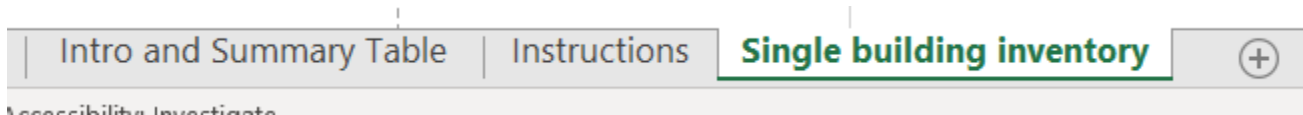
If this tab is not available, click on the small arrow at the bottom of the document to switch between the tabs:
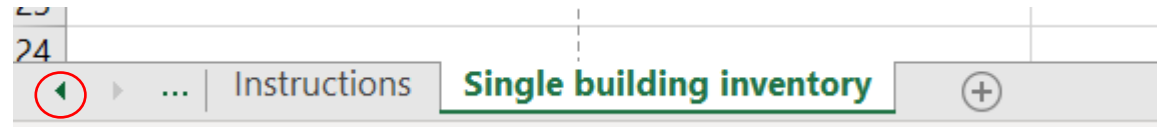
Then you should see the "Intro and Summary Table" tab:

Enter the WSID on the top row and the water system name. Once the inventory is completed, 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.

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 above. There are other training materials online should you require additional assistance in completing the inventory.

When you are ready to begin filling out the template, select the "Single building inventory" tab and begin typing with the address.

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