

Sampling Instructions
Method 524.2
Volatile Organics (VOCs) including Total Trihalomethanes (TTHM)

Read instructions carefully. Lab may reject samples if all instructions are not followed.
Confirm scheduling and instructions with lab BEFORE sampling – 303-659-2313

1. **Sample Location:** Use the state-approved location as specified on your Monitoring Schedule. If one has not been designated, select an appropriate location which is representative of the distribution system.

2. **Sampling Materials:**

Trip Blank (for VOC analysis only): 1 40-mL vial labeled “Trip Blank” and dated (The blank serves as an indicator of contamination which may occur during sample transport or storage. Therefore, this vial **must not** be opened and must always travel with the samples.)

VOC's Only

Containers / de-chlorinating agent: Three pre-cleaned 40-mL glass vials with Teflon Septa. Each container will contain ascorbic acid to remove residual chlorine from the sample.

Preservative: 1:1 Hydrochloric acid (HCl), ice.

Other: Labels, marker, safety glasses, phthalate-free gloves.

3. **Safety Concerns:** Caution! Hydrochloric acid is a strong acid and will cause burns. Caution! “Empty” sample vials may contain acid. Open them slowly and carefully.
4. **Sample Collection Procedure** – Fill at least two, preferably three vials as follows:
 - a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
 - b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce the flow so that stream of water is no greater than 1/8 inch in diameter.
 - c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.

- d. Fill the sample container slowly until it is completely full to the rim. Then **gently** add sample to the inverted cap, and **gently** pour sample from the cap to the vial to form water above the rim (meniscus). (This will prevent the formation of an air pocket in the vial.) Gently tap the vial to dislodge any air bubbles. Do not flush out the ascorbic acid.
- e. **Carefully** add 4 drops of 1:1 hydrochloric acid to center of the water surface. The acid will sink to bottom of vial, displacing 4 drops of sample.
- f. **Seal the sample vial** by carefully placing the cap on the container ensuring that the Teflon (shiny) side of the septum liner contacts the sample.
- g. When sampling for VOCs it is critical that there be zero headspace (i.e., no air bubbles) in the container. To check for this, invert the full, capped container and tap the cap. There should be no air bubbles present. If an air bubble larger than a pea is present do the following: **DO NOT EMPTY THE CONTAINER**. Remove the cap. Carefully add the water being sampled until meniscus appears. Replace the cap and check again for headspace. Repeat the above if required.
- h. Repeat steps c-f for each container provided for each sample location. It is important that all containers be filled and properly labeled.
- i. If a sample foams vigorously when HCl is added, discard that sample. Fill the additional vials for that sample location but do not acidify them. These samples must be labeled as "Not Acidified" and must be stored at 4°C or below. These samples must be analyzed within 24 hours of collection.
- j. Fill out the COC form provided. Be sure to include sample date, time, location of sample collection, the tests being requested, and your PWSID number.
- k. Return the samples to Colorado Analytical as soon as possible after sampling. Keep the samples cool (4°C) until delivery. It is recommended that if samples cannot be hand delivered, they be packaged with sufficient ice to ensure that the samples arrive at the laboratory with a substantial amount of ice remaining in the cooler and shipped via the quickest means possible. Call (303) 659-2313 with any questions.

Ship or hand-deliver to:

Colorado Analytical Laboratories
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