HOW LONG CAN WE HOLD SAMPLES?

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Over the years, during our training, it has been drummed into us the hazards and expense of improper or poor sampling techniques. While teaching the Laboratory class, we stress common sampling techniques and how to avoid sampling errors. However, we have neglected considering laboratory preferred disinfection techniques, holding times, sample preservation, and sample containers used for our routine sampling (we've revised this oversight).

After chlorine, probably the most common sample we Water Operations Specialist collect is the bact-T or coliform sample. Back in the day, first thing we did was flame the tap, insuring the faucet was free of potential contamination. Then we graduated to using a 1:10 chlorine to water ratio. Recently several labs are suggesting we use an isopropyl alcohol solution to disinfect the sample point.

Bact-T sample containers have come a long way. I may be dating myself. When I started, we were using the old "Whirl-Pak®" bags (pictured right) for coliform sampling. Later on, the 100 milliliter pre-inculcated sodium thiosulfate plastic vessels were introduced (pictured left). Since then, the 120 milliliter vessel has been introduced. The labs decant 20 milliliter sample from the vessel, verifying the thiosulfate has destroyed the chlorine. Preservation and hold times remain unchanged – it is recommended samples be chilled and stored <10 °C and chlorinated samples preserved with sodium thiosulfate and analyzed within thirty hours. What a change from the old days with what was essentially a sandwich bag to high-tech bottles.

Many systems have to sample for lead and copper this year. Typically most labs supply us with their preferred sample bottles. Most labs usually provide plastic bottles and use HNO3 lowering the pH to ≤2. Lowering the pH allows the aliquot to be held six months prior to analysis.

Another common sample sent out is the BOD5, CBOD5 and (TSS) Total Suspended Solids. These samples are usually six or twenty-four hour composite and stored in plastic at ≤6 °C. They must be annualized within forty-eight hours.

How about turbidity? Most of us collect the sample and analyze it immediately. However, turbidity can be collected in a plastic, glass or teflon container – chilled ≤6 °C and held for forty-eight hours.

When in doubt, call your lab and ask what their protocols are or go online to ELAP, find Item #242 to verify container type, preservation type and hold times. 💧💧💧