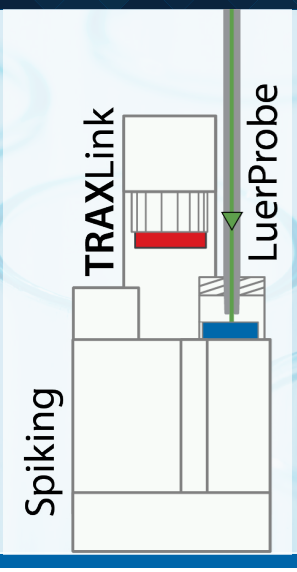
Elemental Scientific

Automating Sample Preservation
***TRAX*Station Uncaps Vessels & Spikes HNO_3**



TRAXStation
Preserving

Produces racks of preserved and mixed samples as outlined in EPA Method 200.2 Section 8.1.

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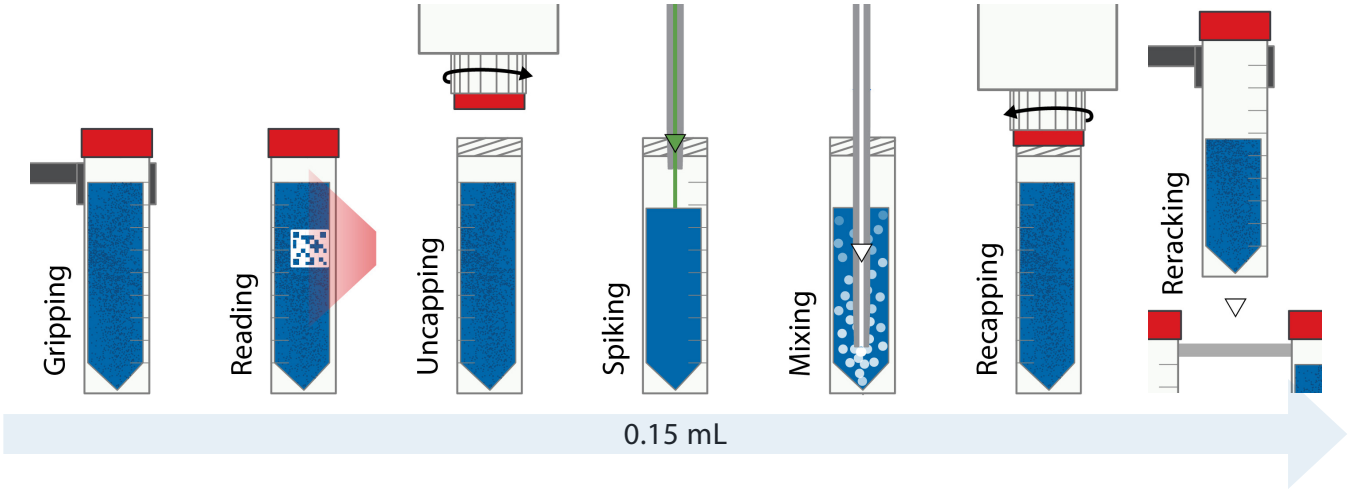
Evaluation of TRAXStation for Preserving Environmental Samples for Metals Analysis

Synopsis

This study uses **TRAX**Station 442 to automatically preserve samples as outlined in EPA Method 200.2, applicable for groundwater, surface water, drinking water, wastewater and other environmental samples. The automation process includes uncapping, barcode reading, acid spiking, mixing, tightly recapping, and reracking. Automatic syringe-driven addition of 1+1 HNO_3 spiked with cobalt was verfied by measuring sample pH sixteen hours after preservation. Reproducibility was confirmed by monitoring the element Co by ICPMS. **TRAX**Station preserves more than one sample per minute or over 1500 samples per 24 hour day.

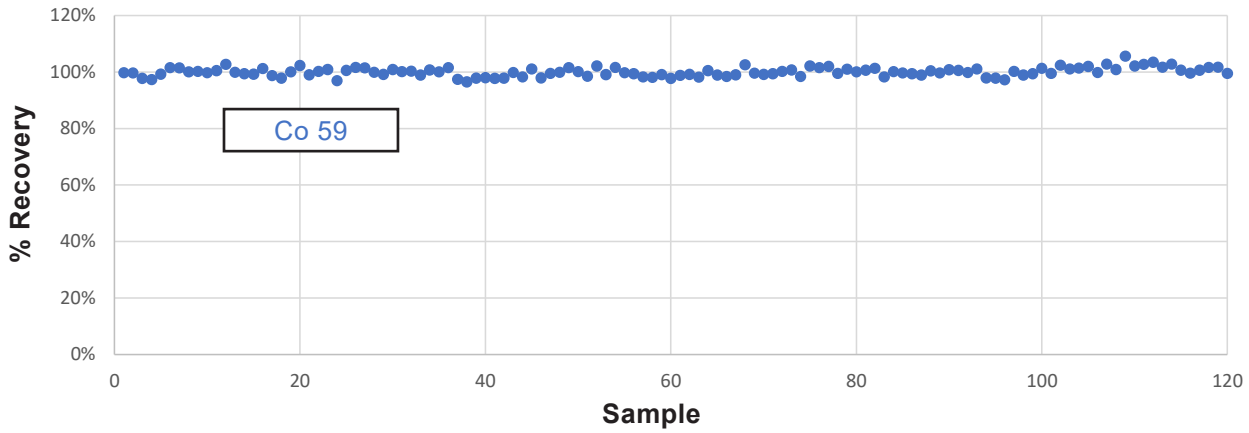


TRAXStation automatically and completely prepares racked samples for preservation. LuerProbe is used for spiking and mixing steps. Other probe options are available.

Learn More

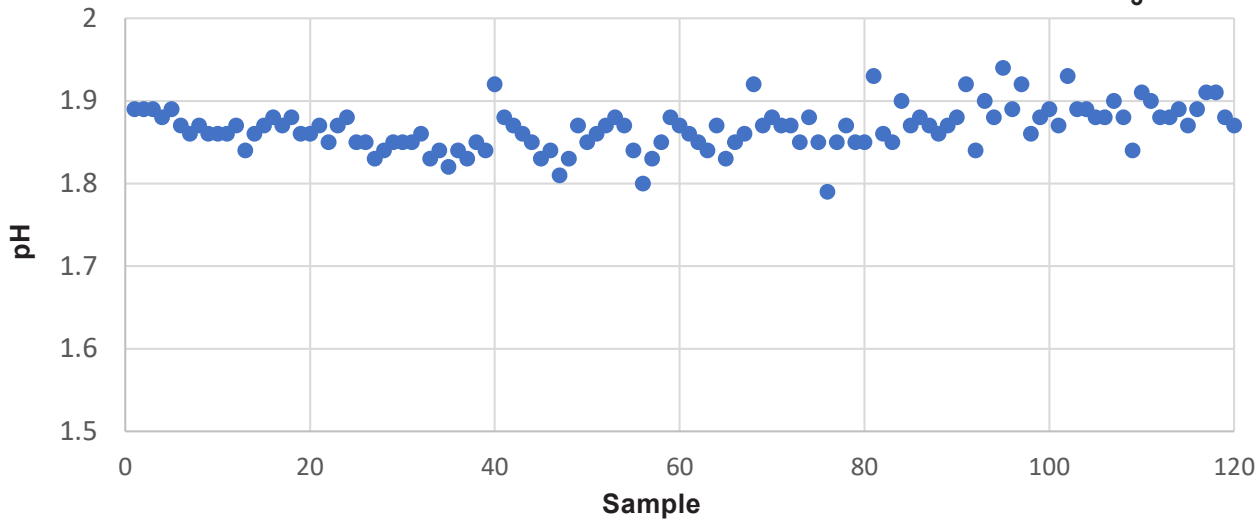
Automatic Sample Preservation by **TRAX**Station

Reproducibility of 0.15 mL Spikes of 1+1 HNO_3 into 120 Water Samples of 50 mL each



Automated preservation of 120 environmental samples using the **TRAX**Station. Each 50 mL water sample was spiked with 0.15 mL of 1+1 HNO_3 (~35% HNO_3) containing 1000 ppb of cobalt. Cobalt was added solely to generate a signal on an ICPMS proportional to the amount of acid spike. As analyzed, the cobalt concentration was expected to be 3 ppb with recovery expressed as the measured concentration divided by the expected concentration. The average spike recovery was 100.06% with an RSD of 1.56%, confirming the reproducibility of the automated sample preservation system.

pH of 120 Preserved Samples Measured 16 Hours after HNO_3 Spiking



After automated preservation using **TRAX**Station, 120 samples were held for 16 hours before pH measurement. These data show that the pH values for all samples were less than 2 (average pH = 1.86 with an RSD of 1.39%), proving that **TRAX**Station effectively preserves water samples as described in EPA Method 200.2, Section 8.1.