

Standard Operating Procedure

Paragon Laboratories, Inc.
12649 Richfield Court
Livonia, MI 48150

SOP:

N0079

Revision:

0

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Effective Date:

05/16/08 00:00:00

Sampling Drinking Water for Haloacetic Acids (HAA5) Analysis using USEPA Method 552.3

1.0 SCOPE AND APPLICATION

1.1 REFERENCE INFORMATION

Discipline:	Operations, Field, Sampling
Related Documents:	SLP-S0020, SLP-S0021, SOP-N0031, SOP-A0203, SOP-A0217
Applicable Programs:	MDEQ, Drinking Water
Regulatory References:	40CFR141

1.2 HOLDING TIMES

- 1.2.1 The maximum holding time for a sample stored at or below 6 degrees C ($\leq 6^{\circ}\text{C}$) and protected from light is 14 days from sample collection until extraction with methyl tert-butyl ether (MTBE).
- 1.2.2 MTBE extracts must be stored at or below -10 degrees C, protected from light, and analyzed within 21 days of extraction.

2.0 SAFETY

- 2.1 Ammonium chloride (NH_4Cl) is a skin, eye, and respiratory irritant, and may be harmful if inhaled or swallowed. Adequate ventilation and safety glasses are recommended. Flush with plenty of water upon skin or eye contact.

3.0 EQUIPMENT AND SUPPLIES

- 3.1 One 250-mL amber glass bottle with PTFE-lined cap containing 25 mg of granular ammonium chloride (NH_4Cl) is required per sample (1 bottle/sample).
- 3.2 Paper towel
- 3.3 Pen, with water-proof ink

4.0 PROCEDURE

4.1 COLLECT SAMPLES FROM A COLD WATER TAP

- 4.1.1 Remove the aerator/screen from the tap, if there is one present.
- 4.1.2 Open the tap (cold only) and allow the system to flush for about 3-5 minutes at full flow until the water temperature has stabilized and the system has been flushed of stagnant water.

4.2 FILL BOTTLES (DO NOT RINSE OUT BOTTLES)

- 4.2.1 Adjust the water flow to a gentle stream and slowly fill the container to the neck of the bottle ($\frac{1}{2}$ to $\frac{3}{4}$ " from the top) making sure not to flush out the ammonium chloride. Be sure that the inside of the cap and mouth of the bottle do not come in contact with anything but the sample water.
- 4.2.2 Securely cap the container, and gently agitate the sample by hand for 15 seconds so that the ammonium chloride thoroughly mixes with the sample.

4.3 LABEL AND CHILL THE SAMPLE CONTAINER

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- 4.3.1 Dry the label with paper towel if necessary.
- 4.3.2 Using a water-proof ink pen, clearly record the sample ID, date and time of collection, and collector on the label.
- 4.3.3 Immediately chill all samples within 15 minutes of collection to at or below 10 degrees C ($\leq 10^{\circ}\text{C}$) by placing the samples in a sample refrigerator or in a cooler with ice.
- 4.4 COMPLETE THE CHAIN-OF-CUSTODY RECORD
- 4.4.1 Complete the Chain-of-Custody Record provided by the laboratory, making sure to fill in as much information as possible and indicate the analysis requested. Protect the form from getting wet and include it with sample submission.
- 4.5 RETURN SAMPLES TO PARAGON
- 4.5.1 Return samples promptly after collection to avoid approaching maximum holding time.
- 4.5.2 Continue to chill samples during storage, transport, and/or shipment to $\leq 10^{\circ}\text{C}$, and to $\leq 6^{\circ}\text{C}$ after the first 48 hours after collection. Samples must not freeze. Upon receipt by the laboratory, samples must be confirmed to be $\leq 10^{\circ}\text{C}$ (or $\leq 6^{\circ}\text{C}$ after 48 hours), stored at $\leq 6^{\circ}\text{C}$, and protected from light until extraction.
- 4.5.3 When transporting or shipping samples back to Paragon, it is vital that you protect the glass bottles from breakage. Pack securely with an insulation material (styrofoam, bubble wrap, cardboard, etc.) around or between the bottles.
- 4.5.4 When shipping samples, be sure that ice is bagged to prevent leakage from the cooler. Also, be sure there is enough ice for samples to arrive at the laboratory with ice still remaining in the cooler.
- 5.0 REFERENCES**
- 5.1 USEPA. 2003. Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Microextraction, Derivatization, and Gas Chromatography with an Electron Capture Detector. Method 552.3, Revision 1.0. USEPA: Cincinnati, July.
- 5.2 USEPA. 2008. Analytical Requirements. *Code of Federal Regulations*, Title 40, Part 141.131 of Subpart L - Disinfectant Residuals, Disinfection Byproducts, and Disinfection Byproduct Precursors. Washington:GPO (e-CFR).

Revision History

Rev	Description of Change	Originator	Source File	Source SOP	Effective Date
0	Initial Release	SLJ-235	SOP-N0079-R0.doc	N0079	05/16/08

Approvals

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Reason Code: Approved For Use

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