

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Safe Drinking Water

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TITLE: New Source Sampling Requirements for Surface Water Sources

EFFECTIVE DATE: December 14, 2013
Minor revision adding PFAS August 19, 2023.

AUTHORITY: Pennsylvania's Safe Drinking Water Act (35 P.S. § 721.1 *et seq.*) and regulations at 25 Pa. Code Chapter 109.

POLICY: Department of Environmental Protection (DEP) staff will follow the guidance and procedures presented in this document to support implementation of new source sampling activities under the Safe Drinking Water Program.

PURPOSE: The purpose of this document is to establish a rational and reasonable basis for staff decisions which will promote quality, timely and consistent service to the public and regulated community.

APPLICABILITY: This guidance will apply to sampling of all new surface water sources of public water supply.

DISCLAIMER: The policies and procedures outlined in this guidance are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the rules in these policies that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

PAGE LENGTH: 4 pages

DEFINITIONS: See Title 25 Pa. Code Chapter 109

Introduction

This guidance outlines the procedures and lists the minimum sampling requirements for all new surface water sources. According to 25 Pa. Code § 109.503 and 109.505, a public water supply that intends to serve as a community or noncommunity system should conduct an evaluation of the quality of the raw water for all new sources. When appropriate, all water samples should be collected prior to submission of the public water supply construction permit application. The new source sampling requirements do not apply when the new source is finished water obtained from an existing permitted community water system, unless the DEP provides written notice that an evaluation is required. It is recommended that the public water supplier contact the appropriate DEP regional office prior to any sampling to obtain information regarding the specific new source sampling requirements and additional guidance on sampling procedure early in the process.

Sample Collection

Unless otherwise instructed by the DEP, the new source sampling should include a minimum of three individual sampling events. Since surface water quality can vary considerably throughout the year sampling events should be spaced such that high, average and low stream flows can be evaluated. In addition, the samples should be collected over a minimum time interval of six months, but preferably one year. It should be noted that monitoring timescales for cryptosporidium, E. coli and turbidity may be longer.

All samples should be collected by the project applicant or its consultant using a method that best represents the surface water source. Additionally, samples of all volatile organic chemicals (VOCs) should be collected by a person properly trained by a laboratory accredited by the DEP to conduct VOC analysis. In order to achieve reliable laboratory results, proper collection, preparation and storage of water samples and the use of proper sampling equipment and techniques should be followed and documented.

Laboratory Analysis

All analyses of samples should be performed by a laboratory that is certified by the DEP under Subchapter H of 25 Pa. Code Chapter 109. The samples should be submitted to the laboratory in laboratory-issued bottleware, with appropriate chain-of-custody documentation and within the required holding times.

List of Minimum Sampling Requirements

The following tables list the minimum sampling requirements for all new surface water sources. Unless otherwise instructed by the DEP, all samples collected during the three sampling events should be analyzed for the parameters listed below. The DEP may require monitoring of any other contaminant(s) as determined necessary to adequately evaluate the quality of the source.

VOLATILE ORGANIC CHEMICALS (VOCs):

BENZENE CARBON TETRACHLORIDE o-DICHLOROBENZENE para-DICHLOROBENZENE 1,2-DICHLOROETHANE 1,1-DICHLOROETHYLENE cis-1,2-DICHLOROETHYLENE	trans-1,2-DICHLOROETHYLENE DICHLOROMETHANE 1,2-DICHLOROPROPANE ETHYLBENZENE MONOCHLOROBENZENE STYRENE TETRACHLOROETHYLENE	TOLUENE 1,2,4-TRICHLOROBENZENE 1,1,1-TRICHLOROETHANE 1,1,2-TRICHLOROETHANE TRICHLOROETHYLENE VINYL CHLORIDE (See NOTE) XYLENES (Total)
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NOTE: Monitoring for vinyl chloride is only required when one or more of the following two-carbon compounds are detected: trichloroethylene, tetrachloroethylene, trans-1,2-dichloroethylene, cis-1,2-dichloroethylene, 1,2-dichloroethane, 1,1-dichloroethylene, 1,1,1-trichloroethane.

SYNTHETIC ORGANIC CHEMICALS (SOCs):

ALACHLOR ATRAZINE BENZO(A)PYRENE CARBOFURAN CHLORDANE DALAPON DI(2-ETHYLHEXYL) ADIPATE DI(2-ETHYLHEXYL) PHTHALATE DIBROMOCHLOROPROPANE (DBCP) DINOSEB	DIQUAT ENDOTHALL ETHYLENE DIBROMIDE (EDB) ENDRIN GLYPHOSATE HEPTACHLOR HEPTACHLOR EPOXIDE HEXACHLOROBENZENE HEXACHLOROCYCLOPENTADIENE LINDANE	METHOXYCHLOR OXAMYL (VYDATE) PCBs ¹ PENTACHLOROPHENOL PICLORAM SIMAZINE TOXAPHENE 2, 3, 7, 8-TCDD (DIOXIN) ¹ 2, 4-D 2, 4, 5-TP (SILVEX)
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1. Monitoring for PCBs and/or dioxin is required when there is a contamination source within one (1) mile upstream of the new surface water source. Provide details of the assessment in Public Water Supply Module 3B, Part G to support a finding of no sources of contamination.

INORGANIC CHEMICALS (IOCs):

ANTIMONY ARSENIC ASBESTOS (see NOTE) BARIUM BERYLLIUM CADMIUM	CHROMIUM COPPER CYANIDE (as free cyanide) FLUORIDE LEAD MERCURY	NICKEL NITRATE (as Nitrogen) NITRITE (as Nitrogen) SELENIUM THALLIUM
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NOTE: Monitoring for asbestos is required when DEP has reason to believe the source is vulnerable to contamination.

RADIONUCLIDES:

GROSS ALPHA	GROSS BETA (See NOTE)
RADIUM-226, RADIUM-228	URANIUM

NOTE: If the Gross Beta exceeds 50 pCi/L, analyze the same or equivalent sample to identify the major radioactive constituents present.

MICROBIOLOGICAL CONTAMINANTS:

<i>Total Coliforms Concentration</i>	For each <i>total coliform</i> positive sample, analyze the same or equivalent sample for <i>E. coli</i> concentration.
<i>Cryptosporidium/E. coli/Turbidity</i>	<p>a) Systems serving at least 10,000 people should sample their source water for cryptosporidium, <i>E. coli</i> and <i>turbidity</i> at least monthly for 24 months.</p> <p>b) Systems serving less than 10,000 people should sample their source water for <i>E. coli</i> at least once every 2 weeks for 12 months. <i>Cryptosporidium</i> should be sampled at least twice per month for 12 months or at least monthly for 24 months if they meet one of the following:</p> <ol style="list-style-type: none">1. The mean annual <i>E. coli</i> concentration from the source is greater than 100 <i>E. coli</i>/100 mL.2. The system does not conduct <i>E. coli</i> monitoring.

PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS):

PERFLUOROOCTANESULFONIC ACID (PFOS)	PERFLUOROOCTANOIC ACID (PFOA)
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SECONDARY CONTAMINANTS AND OTHERS:

ALKALINITY ALUMINUM CHLORIDE COLOR FOAMING AGENTS	HARDNESS IRON MANGANESE pH (See NOTE) SILVER	SULFATE TEMPERATURE (See NOTE) TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON TURBIDITY (NTU) ZINC
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NOTE: Temperature and pH measurements may be obtained in the field with a calibrated water quality meter within 15 minutes of sample collection.