

PFAS Field Blanks

PFAS REFERENCE METHOD EPA 533

Pre-Collection Information

- One field blank is required at each public water system (PWS), regardless of the number of samples taken, according to guidance developed by the Public Health Laboratory (PHL).
- PHL will provide reagent water used to take the field blank sample.
- After preparing the field blank at the first sampling location, the sample bottle must be opened at each subsequent sample location at the PWS during sample collection.

Bottle Information

- One field blank bottle label is printed for each PWS.
 - You do not need to write anything on the bottle, “Field Blank” on the pre-printed label serves as the unique identifier.
- If pre-printed bottle labels are not available, you must write the PWS identification (PWSID), PWS name, and the unique identifier on the field blank bottle label.

Chain of Custody (COC) Information

- You must write “Field Blank” on a line of the COC. You must mark PFAS Method 533 analysis.
 - PHL uses this information to log the field blank into their database, track it throughout the lab, and analyze it as a quality control sample.
- Do not enter anything in the Location ID field.
- You must write down a time on the COC and the field blank bottle labels that a sample is collected.
 - The time should be the same time as the time the first PFAS sample is collected.
 - If you chose to use a field number as the unique identifier, you must write that on the COC and the field blank bottle labels.

Field Number	Time Collected	Location ID	Sampling Point
XYZ123A	1:15	E01	Well #1 Entry Point
XYZ123B	1:15		Field Blank
Field Number	Time Collected	Location ID	Sampling Point
Field Number	Time Collected	Location ID	Sampling Point

INORGANIC	4	METALS	1	2	3	4	ORGANIC	1	2	3	4
Unpreserved							BNA (Na_2SO_4) EPA 545				
Alkalinity SM 2320B							BNA (Na_2SO_4/HCl) EPA 525				
Bromide EPA 300.1							Carbamates ($Na_2S_2O_8/Na_2SO_4$ & $C_6H_5K_2O_4$) EPA 531.1/531.2				
Chloride EPA 300.1							Glyphosate ($Na_2S_2O_8$) EPA 547				
Conductivity SM 2510B		Lead EPA 300.8					Herbicides (Na_2SO_4) EPA 515.4				
DOC SM 5310C		Manganese EPA 300.8					VOCs, Low Level ($HCl/H_2O_2/C_6H_5O_4$) EPA 524.3				
Fluoride SM 4500-F-C		Sodium EPA 300.7					THMs (Ascorbic/HCl or HCl) EPA 524.3				
Nitrite-N SM 4500-NO2-B		Ca as $CaCO_3$ EPA 200.7					HAA (NH_4Cl) EPA 552.2				
pH SM 4500-HB		Mg as $CaCO_3$ EPA 200.7					PFC Expanded (Unpreserved) MDH 555				
Silica SM 4500-SiO2-C		Hardness EPA 200.7					PFAS ($NH_4C_2H_4O_4$) EPA 533	X	X		
Sulfate EPA 300.1		Metals Scan (Non-Regulatory)									

Unique COC Examples

- If a COC already has four sample points identified, the field blank must be documented on a second COC.

PFAS FIELD BLANKS - PFAS REFERENCE METHOD EPA 533

- In this case it is necessary to mark the COC “1 of 2” and “2 of 2”.
- Ship or drop off both COCs and containers in the same box to PHL.
- The images below show examples. You can write across the Sample Point section or you can write in the Sampler Comment section.

1	2		3		4																																																																																																																																																																																					
Minnesota Department of Health Chain-of-Custody Form																																																																																																																																																																																										
Program Code IJ	PWSID XXXXXXXX	System Name ABC System		City, Town, Township Any City																																																																																																																																																																																						
Date Collected (for all samples on form)		Collector ID XXXX	Collector Name (please print) XXXXXXXXXXXX		Original Sample Number	Comm. Date																																																																																																																																																																																				
Sample Type X	Your Chlorine Residual Result mg/l		Sampler Comments																																																																																																																																																																																							
1	Field Number XYZ123A	Time Collected 1:15	Location ID E01	Sampling Point Well #1 Entry Point																																																																																																																																																																																						
2	Field Number XYZ123B	Time Collected 1:35	Location ID E02	Sampling Point Well #2 Entry Point																																																																																																																																																																																						
3	Field Number XYZ123C	Time Collected 2:10	Location ID E03	Sampling Point Well #3 Entry Point																																																																																																																																																																																						
4	Field Number XYZ123D	Time Collected 2:40	Location ID E04	Sampling Point Well #4 Entry Point																																																																																																																																																																																						
<table border="1"> <thead> <tr> <th colspan="1">INORGANIC</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th colspan="1">METALS</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th colspan="1">ORGANIC</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td><i>Unpreserved</i></td> <td></td> <td></td> <td></td> <td></td> <td><i>HNO₃ Preserved</i></td> <td></td> <td></td> <td></td> <td></td> <td>BNA (Na₂SO₃) EPA 505</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Alkalinity SM 2120B</td> <td></td> <td></td> <td></td> <td></td> <td>Arsenic EPA 300.8</td> <td></td> <td></td> <td></td> <td></td> <td>BNA (Na₂SO₃/HCl) EPA 525</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bromide EPA 300.1</td> <td></td> <td></td> <td></td> <td></td> <td>Copper EPA 300.9</td> <td></td> <td></td> <td></td> <td></td> <td>Carbonates (Na₂S₂O₈/Na₂SO₃ & CaH₂Cl₂) EPA 531.1/531.2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Chloride EPA 300.1</td> <td></td> <td></td> <td></td> <td></td> <td>Iron EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td>Glyphosate (Na₂S₂O₇) EPA 547</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Conductivity SM 2510B</td> <td></td> <td></td> <td></td> <td></td> <td>Lead EPA 300.8</td> <td></td> <td></td> <td></td> <td></td> <td>Herbicides (Na₂SO₃) EPA 515.4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DOC SM 5310C</td> <td></td> <td></td> <td></td> <td></td> <td>Manganese EPA 300.9</td> <td></td> <td></td> <td></td> <td></td> <td>VOCs, Low Level (HCl/H₂O/CaCl₂) EPA 524.3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Fluoride SM 4500-F-C</td> <td></td> <td></td> <td></td> <td></td> <td>Sodium EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Nitrite-N SM 4500-NO2-B</td> <td></td> <td></td> <td></td> <td></td> <td>Ca as CaCO₃ EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td>TriMs (AscorbicHCl or HCl) EPA 524.3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>pH SM 4500-H+H</td> <td></td> <td></td> <td></td> <td></td> <td>Mg as CaCO₃ EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td>HAA (NH₄Cl) EPA 552.2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Silica SM 4500-SiO2-C</td> <td></td> <td></td> <td></td> <td></td> <td>Hardness EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td>PFC Expanded (Unpreserved) MDH 555</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sulfate EPA 300.1</td> <td></td> <td></td> <td></td> <td></td> <td>Metals Scan (Non-Regulatory)</td> <td></td> <td></td> <td></td> <td></td> <td>PFAS (NH₄-H₂O₂) EPA 533</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>							INORGANIC	1	2	3	4	METALS	1	2	3	4	ORGANIC	1	2	3	4	<i>Unpreserved</i>					<i>HNO₃ Preserved</i>					BNA (Na ₂ SO ₃) EPA 505					Alkalinity SM 2120B					Arsenic EPA 300.8					BNA (Na ₂ SO ₃ /HCl) EPA 525					Bromide EPA 300.1					Copper EPA 300.9					Carbonates (Na ₂ S ₂ O ₈ /Na ₂ SO ₃ & CaH ₂ Cl ₂) EPA 531.1/531.2					Chloride EPA 300.1					Iron EPA 300.7					Glyphosate (Na ₂ S ₂ O ₇) EPA 547					Conductivity SM 2510B					Lead EPA 300.8					Herbicides (Na ₂ SO ₃) EPA 515.4					DOC SM 5310C					Manganese EPA 300.9					VOCs, Low Level (HCl/H ₂ O/CaCl ₂) EPA 524.3					Fluoride SM 4500-F-C					Sodium EPA 300.7										Nitrite-N SM 4500-NO2-B					Ca as CaCO ₃ EPA 300.7					TriMs (AscorbicHCl or HCl) EPA 524.3					pH SM 4500-H+H					Mg as CaCO ₃ EPA 300.7					HAA (NH ₄ Cl) EPA 552.2					Silica SM 4500-SiO2-C					Hardness EPA 300.7					PFC Expanded (Unpreserved) MDH 555					Sulfate EPA 300.1					Metals Scan (Non-Regulatory)					PFAS (NH ₄ -H ₂ O ₂) EPA 533				
INORGANIC	1	2	3	4	METALS	1	2	3	4	ORGANIC	1	2	3	4																																																																																																																																																																												
<i>Unpreserved</i>					<i>HNO₃ Preserved</i>					BNA (Na ₂ SO ₃) EPA 505																																																																																																																																																																																
Alkalinity SM 2120B					Arsenic EPA 300.8					BNA (Na ₂ SO ₃ /HCl) EPA 525																																																																																																																																																																																
Bromide EPA 300.1					Copper EPA 300.9					Carbonates (Na ₂ S ₂ O ₈ /Na ₂ SO ₃ & CaH ₂ Cl ₂) EPA 531.1/531.2																																																																																																																																																																																
Chloride EPA 300.1					Iron EPA 300.7					Glyphosate (Na ₂ S ₂ O ₇) EPA 547																																																																																																																																																																																
Conductivity SM 2510B					Lead EPA 300.8					Herbicides (Na ₂ SO ₃) EPA 515.4																																																																																																																																																																																
DOC SM 5310C					Manganese EPA 300.9					VOCs, Low Level (HCl/H ₂ O/CaCl ₂) EPA 524.3																																																																																																																																																																																
Fluoride SM 4500-F-C					Sodium EPA 300.7																																																																																																																																																																																					
Nitrite-N SM 4500-NO2-B					Ca as CaCO ₃ EPA 300.7					TriMs (AscorbicHCl or HCl) EPA 524.3																																																																																																																																																																																
pH SM 4500-H+H					Mg as CaCO ₃ EPA 300.7					HAA (NH ₄ Cl) EPA 552.2																																																																																																																																																																																
Silica SM 4500-SiO2-C					Hardness EPA 300.7					PFC Expanded (Unpreserved) MDH 555																																																																																																																																																																																
Sulfate EPA 300.1					Metals Scan (Non-Regulatory)					PFAS (NH ₄ -H ₂ O ₂) EPA 533																																																																																																																																																																																

1	2		3		4																																																																																																																																																																																					
Minnesota Department of Health Chain-of-Custody Form																																																																																																																																																																																										
Matrix Drinking Water																																																																																																																																																																																										
Program Code IJ	PWSID XXXXXXXX	System Name ABC System		City, Town, Township Any City																																																																																																																																																																																						
Date Collected (for all samples on form)		Collector ID XXXX	Collector Name (please print) XXXXXXXXXXXX		Original Sample Number	Comm. Date Sanitary Survey																																																																																																																																																																																				
Sample Type X	Your Chlorine Residual Result mg/l		Sampler Comments																																																																																																																																																																																							
1	Field Number XYZ123E	Time Collected 1:15	Location ID	Sampling Point Field Blank																																																																																																																																																																																						
2	Field Number	Time Collected	Location ID	Sampling Point																																																																																																																																																																																						
3	Field Number	Time Collected	Location ID	Sampling Point																																																																																																																																																																																						
4	Field Number	Time Collected	Location ID	Sampling Point																																																																																																																																																																																						
<table border="1"> <thead> <tr> <th colspan="1">INORGANIC</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th colspan="1">METALS</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th colspan="1">ORGANIC</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td><i>Unpreserved</i></td> <td></td> <td></td> <td></td> <td></td> <td><i>HNO₃ Preserved</i></td> <td></td> <td></td> <td></td> <td></td> <td>BNA (Na₂SO₃) EPA 505</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Alkalinity SM 2120B</td> <td></td> <td></td> <td></td> <td></td> <td>Arsenic EPA 300.8</td> <td></td> <td></td> <td></td> <td></td> <td>BNA (Na₂SO₃/HCl) EPA 525</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bromide EPA 300.1</td> <td></td> <td></td> <td></td> <td></td> <td>Copper EPA 300.9</td> <td></td> <td></td> <td></td> <td></td> <td>Carbonates (Na₂S₂O₈/Na₂SO₃ & CaH₂Cl₂) EPA 531.1/531.2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Chloride EPA 300.1</td> <td></td> <td></td> <td></td> <td></td> <td>Iron EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td>Glyphosate (Na₂S₂O₇) EPA 547</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Conductivity SM 2510B</td> <td></td> <td></td> <td></td> <td></td> <td>Lead EPA 300.8</td> <td></td> <td></td> <td></td> <td></td> <td>Herbicides (Na₂SO₃) EPA 515.4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DOC SM 5310C</td> <td></td> <td></td> <td></td> <td></td> <td>Manganese EPA 300.9</td> <td></td> <td></td> <td></td> <td></td> <td>VOCs, Low Level (HCl/H₂O/CaCl₂) EPA 524.3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Fluoride SM 4500-F-C</td> <td></td> <td></td> <td></td> <td></td> <td>Sodium EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Nitrite-N SM 4500-NO2-B</td> <td></td> <td></td> <td></td> <td></td> <td>Ca as CaCO₃ EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td>TriMs (AscorbicHCl or HCl) EPA 524.3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>pH SM 4500-H+H</td> <td></td> <td></td> <td></td> <td></td> <td>Mg as CaCO₃ EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td>HAA (NH₄Cl) EPA 552.2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Silica SM 4500-SiO2-C</td> <td></td> <td></td> <td></td> <td></td> <td>Hardness EPA 300.7</td> <td></td> <td></td> <td></td> <td></td> <td>PFC Expanded (Unpreserved) MDH 555</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sulfate EPA 300.1</td> <td></td> <td></td> <td></td> <td></td> <td>Metals Scan (Non-Regulatory)</td> <td></td> <td></td> <td></td> <td></td> <td>PFAS (NH₄-H₂O₂) EPA 533</td> <td></td> <td></td> <td></td> <td>X</td> </tr> </tbody> </table>							INORGANIC	1	2	3	4	METALS	1	2	3	4	ORGANIC	1	2	3	4	<i>Unpreserved</i>					<i>HNO₃ Preserved</i>					BNA (Na ₂ SO ₃) EPA 505					Alkalinity SM 2120B					Arsenic EPA 300.8					BNA (Na ₂ SO ₃ /HCl) EPA 525					Bromide EPA 300.1					Copper EPA 300.9					Carbonates (Na ₂ S ₂ O ₈ /Na ₂ SO ₃ & CaH ₂ Cl ₂) EPA 531.1/531.2					Chloride EPA 300.1					Iron EPA 300.7					Glyphosate (Na ₂ S ₂ O ₇) EPA 547					Conductivity SM 2510B					Lead EPA 300.8					Herbicides (Na ₂ SO ₃) EPA 515.4					DOC SM 5310C					Manganese EPA 300.9					VOCs, Low Level (HCl/H ₂ O/CaCl ₂) EPA 524.3					Fluoride SM 4500-F-C					Sodium EPA 300.7										Nitrite-N SM 4500-NO2-B					Ca as CaCO ₃ EPA 300.7					TriMs (AscorbicHCl or HCl) EPA 524.3					pH SM 4500-H+H					Mg as CaCO ₃ EPA 300.7					HAA (NH ₄ Cl) EPA 552.2					Silica SM 4500-SiO2-C					Hardness EPA 300.7					PFC Expanded (Unpreserved) MDH 555					Sulfate EPA 300.1					Metals Scan (Non-Regulatory)					PFAS (NH ₄ -H ₂ O ₂) EPA 533				X
INORGANIC	1	2	3	4	METALS	1	2	3	4	ORGANIC	1	2	3	4																																																																																																																																																																												
<i>Unpreserved</i>					<i>HNO₃ Preserved</i>					BNA (Na ₂ SO ₃) EPA 505																																																																																																																																																																																
Alkalinity SM 2120B					Arsenic EPA 300.8					BNA (Na ₂ SO ₃ /HCl) EPA 525																																																																																																																																																																																
Bromide EPA 300.1					Copper EPA 300.9					Carbonates (Na ₂ S ₂ O ₈ /Na ₂ SO ₃ & CaH ₂ Cl ₂) EPA 531.1/531.2																																																																																																																																																																																
Chloride EPA 300.1					Iron EPA 300.7					Glyphosate (Na ₂ S ₂ O ₇) EPA 547																																																																																																																																																																																
Conductivity SM 2510B					Lead EPA 300.8					Herbicides (Na ₂ SO ₃) EPA 515.4																																																																																																																																																																																
DOC SM 5310C					Manganese EPA 300.9					VOCs, Low Level (HCl/H ₂ O/CaCl ₂) EPA 524.3																																																																																																																																																																																
Fluoride SM 4500-F-C					Sodium EPA 300.7																																																																																																																																																																																					
Nitrite-N SM 4500-NO2-B					Ca as CaCO ₃ EPA 300.7					TriMs (AscorbicHCl or HCl) EPA 524.3																																																																																																																																																																																
pH SM 4500-H+H					Mg as CaCO ₃ EPA 300.7					HAA (NH ₄ Cl) EPA 552.2																																																																																																																																																																																
Silica SM 4500-SiO2-C					Hardness EPA 300.7					PFC Expanded (Unpreserved) MDH 555																																																																																																																																																																																
Sulfate EPA 300.1					Metals Scan (Non-Regulatory)					PFAS (NH ₄ -H ₂ O ₂) EPA 533				X																																																																																																																																																																												

Post-Collection Information

- If a PFAS sample arrives at the PHL without a field blank or with a field blank that is canceled, the PFAS sample will **not** be canceled. It will be analyzed and the data qualified if needed.
- If a field blank is documented on the COC but no time is documented, PHL will contact MDH staff and request a time. In these cases, the field blank and the sample will **not** be canceled.
- PWSs may see two data qualifiers (B6 and B7) associated with field blanks on their final reports. If you receive questions about these, please refer the PWS to the PFAS Project Manager. Information about what the new data qualifiers mean:
 - B6: The analyte was found in both field blank and sample.
 - B7: The result is suspect. It was not confirmed as a positive detection because there was no trip blank to evaluate for possible contamination.

If you have questions, call 651-201-4700, or email health.drinkingwater@state.mn.us.

Minnesota Department of Health
 Drinking Water Protection
 651-201-4700
health.drinkingwater@state.mn.us
www.health.state.mn.us

June 2024

To obtain this information in a different format, call 651-201-4700.