FILTER RULES
REPORTING INSTRUCTIONS

for

PUBLIC WATER SYSTEMS USING FILTERED SURFACE WATER OR GROUNDWATER UNDER THE DIRECT INFLUENCE OF SURFACE WATER (GUDI) SOURCES

Technical Guidance Number
XXX-XXXX-XXX

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Safe Drinking Water

DOCUMENT NUMBER: XXX-XXXX-XXX

TITLE: Filter Rules Reporting Instructions for Public Water Systems Using Filtered Surface Water or Groundwater Under the Direct Influence of Surface Water (GUDI) Sources

EFFECTIVE DATE: Upon publication of notice as final in the *Pennsylvania Bulletin*

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

POLICY: The Department of Environmental Protection (DEP) provides laboratory directors of accredited laboratories and public water supply personnel with the information necessary to complete Safe Drinking Water Act (SDWA) forms and to properly report filtered surface water or GUDI turbidity data under the safe drinking water program.

PURPOSE: The purpose of this document is to establish uniform instructions and protocols for completing forms and implementing the drinking water reporting requirements for turbidity and additional treatment technique requirement reporting for systems using surface water or GUDI sources.

APPLICABILITY: This guidance will apply to public water systems that are required to submit surface water turbidity monitoring and source water monitoring reporting to DEP.

DISCLAIMER: The policies and procedures outlined in this guidance document 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 these rules 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: 55 pages

DEFINITIONS: See Title 25 *Pa. Code* Chapter 109

TABLE OF CONTENTS

SECTION 1: INTRODUCTION

The *Filter Rules Reporting Instructions* technical guidance provides instructions for reporting turbidity measurements for public drinking water systems. The *Pennsylvania (PA) Filter Rule* and subsequent revisions (Filter Rules), set forth in 25 *Pa. Code* Chapter 109, require public drinking water monitoring and the reporting of the results to Department of Environmental Protection (DEP).

BACKGROUND

The Filter Rules establish treatment technique requirements for pathogenic bacteria, viruses and protozoan cysts to protect consumers from the adverse health effects of these contaminants. The Filter Rules also provide a series of requirements to strengthen the turbidity requirements, introduce continuous turbidity monitoring of individual filters and combined filter effluent (CFE) for all surface water and GUDI systems, and introduce source water quality monitoring and additional treatment requirements for higher risk water systems, to enhance public health protection against pathogenic microbial contaminants, especially *Cryptosporidium*. The instructions pertain to both the performance monitoring and performance level requirements (PLR) established by the Filter Rules for public water systems (PWSs) using *filtered surface water (SW)* or *filtered groundwater under the direct influence of surface water (GUDI) sources,* as well as turbidity monitoring requirements in the revisions.

GENERAL MONITORING AND REPORTING INFORMATION

Drinking water analysis results are entered into the *Pennsylvania Drinking Water Information System (PADWIS)* via the *Drinking Water Electronic Laboratory Reporting (DWELR)* System. PADWIS is a computerized data management system used by DEP to track drinking water monitoring results. An effective surveillance program requires prompt follow-up to violations for the protection of public health. More instructions about reporting through DWELR are available in Section 3: *Electronic Assistance Tools* in this technical guidance manual and on DEP's website at www.dep.pa.gov (search "DWELR").

Please read the instructions in this technical guidance manual thoroughly. Failure to monitor, analyze and/or report analytical results correctly may result in the water supplier incurring a violation of the Safe Drinking Water Regulations. *DWELR* forms (*SDWA-1* and *SDWA-5*) are used to report turbidity data electronically. Accurate and prompt data reporting is essential. Correct use of the forms is explained in Section 3: *Electronic Assistance Tools,* Section 4: *Reporting Requirements for Turbidity* and Section 5: *Reporting Requirements for LT2 ESWTR Compliance,* of this technical guidance manual.

The monitoring and reporting requirements described in this manual are in addition to other routine monitoring and reporting requirements for PWSs, and do not supersede them.

In summary, the Filter Rules establish performance level monitoring and reporting requirements for the following:

1. Combined filter effluent (CFE) turbidity and individual filter effluent (IFE) turbidities.
2. Continuous turbidity monitoring for CFE and all IFEs (for all surface water and GUDI filter plants).

Monitoring requirements for additional treatment for *Cryptosporidium*, based on the risk category (bin classification) of each source, as established through source water monitoring, include:

1. Reporting the highest bin source utilized during each month.
2. Reporting the Microbial Toolbox Option utilized to provide the required additional treatment for *Cryptosporidium* based on the bin classification and for membrane filter plants using any bin source.
3. Reporting verification of compliance with removal/inactivation requirements.

In addition to the above, the Filter Rules also require monitoring and reporting of the disinfectant residual at entry points to the distribution system, as well as at locations within the distribution system. Refer to the technical guidance document *Laboratory Reporting Instructions for Disinfectants, Disinfection Byproducts and Precursors* (DEP ID: 383-3301-306). The technical guidance manuals are available on the DEP website at www.depgreenport.state.pa.us/elibrary/. Enter "Laboratory Reporting Instructions" into the search.

Refer to Section 4: *Reporting Requirements for Turbidity* for a concise review performance monitoring/reporting requirements and Performance Level Requirements (PLRs) of the Filter Rules for systems with filtered surface water and GUDI sources. For a more detailed description of requirements, refer to Title 25 *Pa. Code* Chapter 109 Safe Drinking Water Regulations available on the web at www.pacode.com.

SECTION 2: RESPONSIBILITIES OF THE WATER SUPPLIER

Under the provisions of Title 25 *Pa. Code* Chapter 109, Safe Drinking Water Regulations, and the authority of the PA SDWA, it is the responsibility of the public water supplier to:

1. Submit to DEP, in an electronic format acceptable to DEP, the results of analyses performed by the supplier under the Safe Drinking Water Regulations.

2. Report the results within either the first 10 days following the month in which the result is determined or the first 10 days following the end of the required monitoring period as stipulated by DEP, *whichever is shorter*, as per 25 *Pa. Code* §109.701(a)(1). ***Failure to report on or before the 10th day of the following month will result in the water supplier being charged with a violation for failure to monitor.***

3. Whenever a *maximum allowable turbidity level is exceeded on a CFE sample*, which indicates a violation of a *treatment technique* requirement for pathogenic bacteria, viruses, and protozoan cysts, the public water supplier must, as per 25 *Pa. Code* §109.701(a)(3)(i):

   (a) Notify the appropriate DEP regional or district office within 1 hour of the determination. DEP and County Health Department (CHD) phone numbers and addresses may be found by searching for form 3930-FM-BSDW0560 in eLibrary at www.depgreenport.state.pa.us/elibrary/.
   (b) Follow the appropriate Tier 1 public notification requirements in 25 *Pa. Code* §109.408.

   Note: This applies to any CFE turbidity value that exceeds the Maximum Allowable Turbidity Level, not just the 15-minute readings used to determine the monthly Performance Level Requirements (PLRs).

4. Whenever the *CFE monthly PLR is not met*, the public water supplier must, as per 25 *Pa. Code* §109.701(a)(3)(i):

   (a) Notify the appropriate DEP district office within 1 hour of the determination.
   (b) Follow the appropriate Tier 2 public notification requirements in 25 *Pa. Code* §109.409.

5. For all surface water and GUDI filter plants, whenever an *individual filter turbidity trigger level* is exceeded, notify DEP within 24 hours of the turbidity exceedance and proceed with the appropriate follow-up activity in accordance with 25 *Pa. Code* §109.714. For additional requirements see the Table 1: *Summary of Individual Filter Follow-up Activities Where DEP Notification is Required* on the following page.

6. SDWA-1 and SDWA-5 form reports are required to be submitted electronically pursuant to DEP's drinking water regulations at *25 Pa. Code* §109.701(j). For example, when reporting turbidity exceedance results, all CFE turbidity measurements that exceeded the maximum allowable turbidity level must be reported on a SDWA-1 form along with the appropriate SDWA-5 form. This is accomplished via a DEP internet website for public water systems, registered environmental laboratories, and accredited laboratories utilizing a secure computer application provided by DEP called the Drinking Water Electronic Laboratory Reporting System (DWELR). See Section 3: *Electronic Assistance Tools* in this technical guidance manual.

7. Turbidity data must be retained by the public water supplier for 5 years in accordance with 25 *Pa. Code* §109.701(d)(1) and be made available upon request. The water supplier should retain plant operational log sheets or continuous analyzer recording charts on file, as a permanent record of plant performance.

Table 1: Summary of Individual Filter Follow-up Activities Where DEP Notification is Required

Individual Filter Event	***Notify DEP* Within:***
Report the occurrence of an exceedance.	24 hours
Report the obvious reasons for the exceedance	24 hours
Produce a filter profile within 7 days of the exceedance (> 10,000 people)	10 days after the end of the month
Conduct a filter self-assessment within 14 days of the exceedance	10 days after the end of the month
Request a Comprehensive Performance Evaluation (CPE)	30 days (60 days if population is < 10,000 people)

* District and CHD addresses, by county, can be found by searching for document 3930-FM-BSDW0560 in eLibrary at www.depgreenport.state.pa.us/elibrary.

SECTION 3: ELECTRONIC ASSISTANCE TOOLS

The following electronic assistance tools are available from DEP:

SUBSECTION A: DRINKING WATER ELECTRONIC LABORATORY REPORTING (DWELR)

All PWSs and laboratories must use DWELR to report electronically, according to 25 *Pa. Code* §109.701(j) and 109.810. DWELR is a DEP GreenPort web application PWSs and accredited laboratories use to upload sample files and/or manually enter sample results on the appropriate entry form. To access DWELR, you need to have a DEP GreenPort user profile. If you do not already have a GreenPort user profile, go to Greenport: www.depgreenport.state.pa.us and "click here to self-register." Please contact the DEP Greenport Helpdesk at 717-787-HELP, if you need help setting up a user account. The DWELR registration form and instructions are available online at www.depgreenport.state.pa.us/elibrary/. Search *DWELR* DEP's Bureau of Safe Drinking Water, PADWIS section may be reached at 717-772-4018 or ra-padwis@pa.gov for more information about DWELR.

DWELR's features allow PWSs or accredited laboratories to:

- Submit data via either upload or data entry.
- Preview the data entered. A DWELR user can *view* all data submitted for the PWS(s) the user represents, regardless of who submitted it, but can only *edit* the data submitted by the user.
- Submit the data ***until the 10th (by 11:59pm)*** of the month. On the 11th of each month, all data is cleared from DWELR and passed to the Pennsylvania Drinking Water Information System (PADWIS) for monthly compliance processing.
- View error reports. Upon submittal, the data is checked and an error report is generated.
- Correct data and resubmit until the 10th of the month.

Detailed instructions are contained in the DWELR web application. Those choosing to upload their data can retrieve the data formats from within DWELR. Accredited laboratories are obligated to provide the sample results to their client (PWS). The format used to report these results is a decision to be determined mutually by the laboratory and the client.

DWELR only stores the data temporarily. While the data remains in DWELR, it can be viewed by the submitting lab and the water system. The data is not available to be viewed by other labs or water systems. After midnight on the 10th of the month (11th), the data is moved from DWELR to PADWIS. Data stored in PADWIS includes drinking water system information, laboratory accreditation information and drinking water sample data.

When a lab submits data, a validation routine is run on the data. This routine includes checks for valid water system and lab ID numbers, analyte and method codes, along with lab accreditation status. Results that are invalid are displayed on the *Error Report* screen. Users should make necessary corrections to the data on this screen and resubmit the records. The routine will be run every time a user submits or re-submits data. Email notifications will be sent to users if they have any uncorrected errors in their data on the 1st, 5th and 9th of every month. The submitting lab is responsible for making any corrections that are necessary.

On the 11th of the month, all data is cleared from DWELR and passed to PADWIS for monthly compliance processing. Sample results, without errors, entered on or before the 10th of the month will be included in the current reporting period. Sample results entered on or after the 11th will be included in the next reporting

period and may result in late reporting violations. After sample results are in PADWIS, they are viewable online through DWRS. Please note: there may be a 2-day lag between when the data are removed from DWELR and when they are available in DWRS.

SUBSECTION B: DWRS AND CONSUMER CONFIDENCE REPORTING SYSTEM

DEP provides the following assistance tools found on the DEP website at www.drinkingwater.state.pa.us:

- ***Drinking Water Reporting System (DWRS)***: Provides dynamic reports on *inventory*, *violations* and *sample* information for water systems from PADWIS. System *monitoring* calendars may also be accessed in DWRS. Instructions on how to use DWRS can be accessed from the DEP Web page.
- ***Consumer Confidence Reporting System***: Provides *detection* and *violation* information from PADWIS to assist community water systems with the preparation of the annual Consumer Confidence Reports.

SECTION 4: REPORTING REQUIREMENTS FOR TURBIDITY

The Filter Rules require all filtered surface water and GUDI systems to ***continuously monitor and record turbidity results at least every 15 minutes at the CFE location*** per 25 *Pa. Code* §109.301(1)(i)(C).

Additionally, the Filter Rules require all filtered surface water and GUDI systems to ***conduct continuous monitoring and record the turbidity results at least every 15 minutes for each individual filter*** per 25 *Pa. Code* §109.301(1)(iii).

COMBINED FILTER EFFLUENT (CFE)

To demonstrate that systems are meeting the treatment technique requirements for pathogenic bacteria, viruses and protozoan cysts, *Performance Level Requirements* (*PLRs)* are established for turbidity. See Table 2: *Performance Level Requirements Based on Filtration Types* below.

Filter performance samples or measurements should be taken from the CFE. The sample tap should be located on the CFE piping immediately after all individual filter effluent pipes have joined into one pipe, before the clearwell, and before post treatment chemical addition. Sample taps located on dead ends or side piping should be avoided. Keep sampling lines as short as possible to avoid a delayed response from the turbidimeter. CFE data that is collected while the filter plant is off line should be tagged or otherwise identified as such and not used for compliance. CFE data collected while the filter plant is in service should be used for compliance. Turbidimeters are required to be calibrated at least every 90 days using a primary standard per 25 *Pa. Code* §109.304(e). Recorded data must match the value on the turbidimeter. Turbidity data must be kept on file by the water supplier for at least 5 years and made available to DEP upon request.

All SW/GUDI filter plants that have physical access to a pipe which provides a sample representative of CFE, must install continuous turbidity monitoring and recording equipment via a representative CFE sample tap on that line by August 20, 2019, per 25 *Pa. Code* §109.301(1)(i)C). If previously permitted filter plants have a design anomaly that prevents physical access to a representative CFE sample tap location (e.g. IFE pipes enter directly into the clear well, CFE pipe is buried under concrete), the Department may approve an alternate CFE monitoring option. For example, DEP may approve individual filter cell measurements to be taken and the arithmetic average of those readings calculated to represent the CFE measurement. The calculated CFE turbidity value would be recorded at least every 15 minutes to comply with the requirement. If the individual filter cell flow rates differ significantly, each individual filter turbidity value will need to be weighted by using a multiplier that represents its portion of the total filter effluent rate (e.g. flow weighted average calculated every 15 minutes). Please note that entry point sample taps are NOT acceptable as CFE monitoring locations due to potential for dilution, settling, and interferences from chemical addition within the clear well; these factors could delay the duration of and/or reduce the magnitude of an actual CFE turbidity spike and/or cause turbidity spikes due solely to post filtration chemical addition.

Table 2: Performance Level Requirements (PLRs) Based on Filtration Types

Filtration Type	*CFE Performance Level Requirements*
Conventional, Direct, Other	*Maximum Allowable = 1 NTU Monthly PLR ≤ 0.3 NTU in 95% of samples
Membrane	*Maximum Allowable = 1 NTU Monthly PLR ≤ 0.15 NTU in 95% of samples
Slow Sand or Diatomaceous Earth filtration	*Maximum Allowable = 2.0 NTU Monthly PLR ≤1.0 NTU in 95% of samples

Notify the local DEP district office within 1 hour of any CFE value exceeding a Maximum Allowable Turbidity Level. This applies to any CFE turbidity value that exceeds the Maximum Allowable Turbidity Level, not just the 15-minute readings used to determine the monthly PLR.

Continuous Analyzer Measurements for CFE Reporting

Read the measurements from the recorder printout or chart. If the continuous turbidity monitoring or recording equipment fails, substitute grab sampling and/or manual recording every 4 hours. Grab sampling/manual recording may not be substituted for continuous monitoring or recording for more than 5 working days after the equipment fails, per 25 *Pa. Code* §109.301(1)(iv). For systems that do not operate continuously, the turbidity shall also be measured at start-up and immediately prior to plant shutdown, per 25 *Pa. Code* §109.301(1)(i)(C).

At the end of the month, on the SDWA-5 form (see Section 5: *Reporting Requirements for LT2 ESWTR Compliance* for details):

- Report the total number of measurements taken for the month. Enter this number into field 6A (Number of Measurements).
- Determine the number of turbidity results that were within the plant's PLR. Enter this number into field 6B (Number of Results Meeting PLR).

INDIVIDUAL FILTER EFFLUENT (IFE)

All surface water and GUDI filter plants are required to *conduct continuous turbidity monitoring and record the results at least every 15 minutes for each individual filter,* per 25 *Pa. Code* §109.301(1)(iii).

Performance samples or measurements should be taken at the Individual Filter Effluent (IFE). The sample tap should be located on the IFE piping immediately after the filter. Sample taps located on dead ends or side piping such as filter-to-waste lines should be avoided. Keep sampling lines as short as possible to avoid a delayed response from the turbidimeter. IFE data that is collected during backwashing, filter-to-waste, or when the filter is off line should be tagged or otherwise identified as such and not used for compliance. IFE data collected while the filter is in service is used for compliance. Section 109.304(e) of 25 *Pa. Code* requires turbidimeters to be calibrated at least every 90 days using a primary standard. Recorded data must match the value on the turbidimeter. Turbidity data must be kept on file by the water supplier for at least 5 years, per 25 *Pa. Code* §109.701(d)(1) and made available to DEP upon request.

Filters that have an A side and a B side, with each side having its own filter effluent, are considered two filters for the purposes of IFE turbidity monitoring and recording requirements. The turbidimeter sample tap for each side should be located on the IFE piping immediately after the filter, prior to any valving and prior to the A and B sides being combined.

Note: Water Suppliers should use the *Individual Filter Follow-up Activities DEP Notification* form (3900-FM-BSDW0002) to report a turbidity exceedance and the associated follow-up activity to the appropriate DEP district office. The form is also available on the DEP website at: http://www.depgreenport.state.pa.us/elibrary/search Enter "*Individual Filter Follow-up Activities*" in the document name search.

The turbidity trigger levels and the required water system follow-up activity are shown in Table 3: *Individual Filter Event*s, for all surface water and GUDI filter plants, on the following page.

Table 3: Individual Filter Events (Applies to all surface water and GUDI filter plants*)

Turbidity Trigger Levels *(on the same filter)*	***Water System Follow-up Activity***
> 1.0 NTU in 2 consecutive measurements taken 15 minutes apart. **OR** > 0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous filter operation after filter has been backwashed or taken off-line for any reason.	For all PWSs: • Notify DEP within 24 hours of the turbidity exceedance. • Using an SDWA-1 form, report the plant ID, filter ID, date, time and NTU value(s). • Report the ***obvious reason*** for the turbidity exceedance within 24 hours. For PWSs serving 10,000 or more people: • If systems do not report the ***obvious reason*** for the turbidity exceedance within 24 hours, they must produce a filter profile within 7 days of the exceedance and report that profile was produced within 10 days following the end of the month, per 25 *Pa. Code* §109.714(1).
> 1.0 NTU in 2 consecutive measurements taken 15 minutes apart in ***3 consecutive months.***	• All activities listed in the first row above. • Conduct a filter self-assessment and write a report within 14 days. For PWSs serving less than 10,000 people: • report the date the self-assessment was triggered and the date it was completed.
> 2.0 NTU in 2 consecutive measurements taken 15 minutes apart in ***2 consecutive months.***	• All activities listed in the first row above. For PWSs serving less than 10,000 people: • Request, within 60 days, that a Comprehensive Performance Evaluation (CPE) be conducted by DEP and ensure that it is submitted to the Department within 120 days of the exceedance. For PWSs serving 10,000 people or more: • Request, within 30 days, that a CPE be conducted by DEP and ensure that it is submitted to the Department within 90 days of the exceedance.

* Membrane filter plant operators need to follow all permit conditions and corrective actions. (ie. When an individual membrane unit has turbidity > 0.15 NTU for 2 consecutive readings (15 minutes apart), the unit is to be taken out of service for Direct Integrity Testing (DIT) and corrective actions performed.)

Report the turbidity data *monthly* on the electronic forms as listed in the following table:

Table 4: Turbidity Data and Correct Reporting Forms

Applies to:	***Purpose***	***Form***
All surface water and GUDI filter plants	Report filter plant operational information, summarized ***CFE*** turbidity results	SDWA-5
All surface water and GUDI filter plants	Report ***individual filter*** turbidity monitoring	SDWA-5
All surface water and GUDI filter plants	Report ***CFE*** turbidity results which exceed 1 NTU for systems using conventional, direct, membrane, or other filtration OR 2.0 NTU for slow sand or diatomaceous earth filtration	SDWA-1
All surface water and GUDI filter plants	Report ***individual filter*** turbidity results that exceed 1.0 NTU in 2 consecutive measurements taken 15 minutes apart OR 0.5 NTU in 2 consecutive measurements taken 15 minutes apart 4 hours after filter is returned to service	SDWA-1

Note: See Section 5: *Reporting Requirements for LT2 ESWTR Compliance* for detailed descriptions of the SDWA-5 and SDWA-1 forms.

SECTION 5: REPORTING REQUIREMENTS FOR LT2 ESWTR COMPLIANCE

Applicability

The Long Term 2 Enhanced Surface Water Treatment Rule (LT2 ESWTR) applies to all public water supplies using surface water and groundwater under the direct influence of surface water (GUDI).

Source BIN Classification for Filtered Systems

All systems are required to conduct source water monitoring and make a bin classification determination pursuant to Chapter 109, Subchapter L and per 40 CFR Part 141, per DEP and EPA requirements. See Table 5 below.

Table 5: Source Water Monitoring and Bin Classification Determination

Cryptosporidium Concentration (oocysts/L)	***Bin Classification***	***Additional Cryptosporidium Treatment Required***			
		Conventional Treatment	***Direct Filtration***	***Slow Sand or Diatomaceous Earth Filtration***	***Alternative Filtration***
< 0.075	Bin 1	No additional treatment required	No additional treatment required	No additional treatment required	No additional treatment required
0.075 to <1.0	Bin 2	1 Log	1.5 Log	1 Log	(1)
1.0 to < 3.0	Bin 3	2 Log	2.5 Log	2 Log	(2)
> = 3.0	Bin 4	2.5 Log	3 Log	2.5 Log	(3)

(1) As determined by DEP such that the total removal/inactivation> 4.0 log
(2) As determined by DEP such that the total removal/inactivation> 5.0 log
(3) As determined by DEP such that the total removal/inactivation> 5.5 log

Filtered systems shall provide the level of additional treatment for *Cryptosporidium*, as shown in Table 5, based on their bin classification and according to the schedule in Table 6.

Table 6: Treatment Compliance Dates Per System Size

System Schedule	***Population Size***	***Round 2 Treatment Install & Operate deadlines***
1	100,000 or more	October 1, 2020
2	50,000 to 99,999	April 1, 2021
3	10,000 to 49,999	April 1, 2022
4	Fewer than 10,000	October 1, 2024

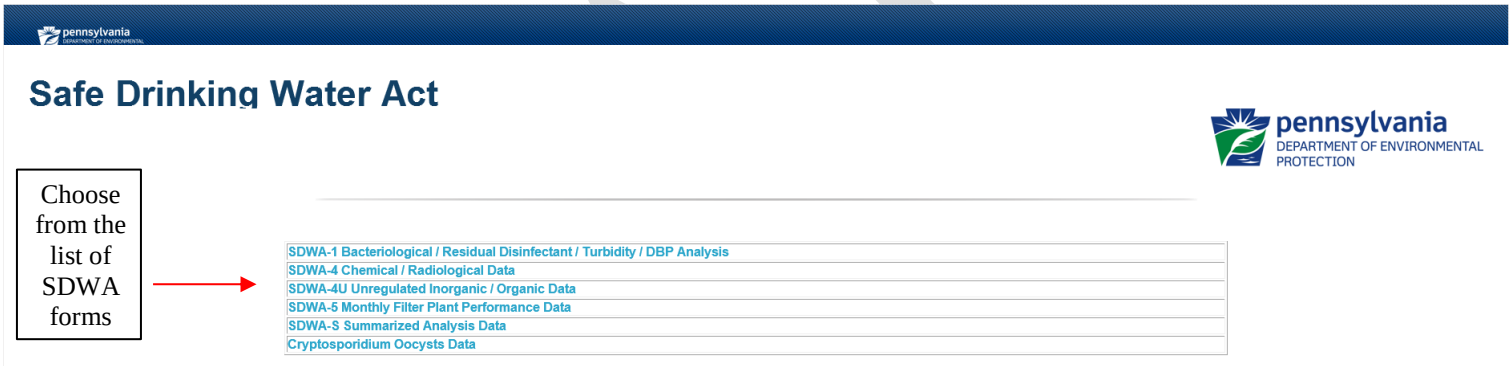
LT2 ESWTR Toolbox Monthly Operational Report Form

LT2 ESWTR requires additional reporting on applicable forms. See Appendix II: *Monthly Operational Report Form* (MOR) for form 3900-FM-BSDW0517 and information about other forms.

Note: For UV forms, go to the DEP website at: www.depgreenport.state.pa.us/elibrary/ and search by document numbers listed in the MOR.

SUBSECTION A: SDWA 5-MONTHLY FILTER PLANT PERFORMANCE FORM; INSTRUCTIONS FOR REPORTING

In DEP Greenport, enter *DWELR* and go to the Main Menu:



Safe Drinking Water Act

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

I. General Plant Information

PWS Name:

(1) PWSID	(2) Trans	(3) Filter Plant ID	(4) Report Month MMDDYY (1st of the month)
	09		

II. Combined Filter Effluent (CFE) Turbidity (All filtered systems)

(5) Plant Operation Hours	Combined Filter Effluent Turbidity		(7) Plant Performance Level (xx.x%)
	(6A) Number of Measurements	(6B) Number of Results Meeting PLR	
			6B X 100/6A = %

Turbidity Performance Level Requirements (NTUs)
<=0.3 NTUs for Conventional, Direct, and Other
<=0.15 NTUs for Membrane
<=1.0 NTU for Slow Sand and DE

III. CFE Turbidity Exceedance Reporting (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level?
Select

Maximum Allowable Turbidity (NTUs)
1 NTU for Conventional, Direct, Membrane, or Other
2.0 NTUs for Slow Sand or DE

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See reporting instructions (383-3301-106) for reporting CFE turbidity measurements.)

SDWA 5-Monthly Filter Plant Performance Form: Instructions for Reporting (continued)

IV. CFE Continuous Turbidity Monitoring and Recording (All filtered systems)

(9) Was continuous turbidity monitoring and recording conducted at least every 15 minutes on the CFE?

Select

Yes (Go directly to Section V)

No (Proceed to question #10)

(10) If there was a failure in the continuous turbidity monitoring or recording equipment on the CFE, did you conduct grab sampling and/or manual recording every 4 hours for a period not exceeding 5 working days?

Select

V. Individual Filter Turbidity Exceedance Reporting (All filtered systems)

(11) Did any individual filter measurements exceed Trigger Level #1 or Trigger Level #2?

Select

Trigger Level #1: Turbidity >1.0 NTU in 2 consecutive measurements taken 15 minutes apart.
Trigger Level #2: Turbidity >0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous operation after the filter is returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters, regardless of the reason. Record all measurements on an SDWA-1 form.
(See reporting instructions (383-3301-106) for reporting individual filter turbidity measurements.)

VI. Individual Filter Continuous Turbidity Monitoring and Recording (All filtered systems)

(12) Was continuous turbidity monitoring and recording conducted on all individual filters in operation at least every 15 minutes?

Select

Yes (Go directly to Section VII)

No (Proceed to question #13)

(13) If there was a failure in the continuous turbidity monitoring or recording equipment on any individual filter, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?

Select

VII. LT2ESWTR Reporting (All filtered systems)

(14) What was the highest Bin source used during the month?

Select

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

If Bin 1 using only **Conventional, Direct, Slow Sand, DE** or **Other** filtration, go to Section XI.

If Bin 2 or higher using **Conventional** or **Direct** filtration, go to section VIII.

If Bin 2 or higher and using **Slow Sand, DE,** or **Other** filtration, go to Section X.

If using **Membrane** filtration, (all Bin #s), go to Section IX.

VIII. CFE & IFE Performance Option-- Conventional or Direct filtration using Bin 2 or higher

(15) Was the CFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?
Select

(16) Was the IFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?
Select

(17) Was the IFE turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?
Select

Systems with Conventional filtration using Bin 2 source only: If the answer is "Yes" to Q15 & 16 and "No" to Q 17 go to section XI. All others, go to Section X.

IX. Membrane Filtration Integrity Testing

(18) Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?
Select

(19) Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?
Select

X. Microbial Toolbox Monthly Operational Report, Form # 3900-FM-BSDW0517

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were :
PWS with Conventional filtration not meeting CFE and/or IFE Performance criteria in section VIII,
PWS with Membrane filtration using any Bin source,
PWS with Direct, Slow Sand, DE, or Other filtration using a Bin 2, Bin 3 or Bin 4 source,
PWS with Conventional filtration using a Bin 3 or Bin 4 source.

XI. Verification

By signing this form you are certifying that the information contained herein is true and correct to the best of your knowledge, information and belief. The information given is subject to the penalty provisions of the Crimes Code regarding unsworn falsification to authorities (18 P.S.C.S.A §4904).
Approved by: Date:

Submit Cancel

Note: See Appendix II in this manual for a copy of the Monthly Operational Report (MOR) form 3900-FM-BSDW0517 listed on the SDWA-5 input form or go to the DEP website at www.depgreenport.state.pa.us/elibrary/ and search "*LT2 ESWTR Toolbox*".

The SDWA-5 form field descriptions and instructions for reporting the summarized filter turbidity information are listed on the following pages.

SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS
FOR REPORTING SUMMARIZED FILTER TURBIDITY INFORMATION

Data Field	***Descriptions/Explanation***
SECTION I. General Plant Information	
PWS Name	The PWS name will be automatically populated by the system on the electronic form, after the PWSID is entered.
1. PWSID	Enter the 7-digit public water system identification (PWS ID) number of the PWS to which these samples apply. Failure to enter the PWS ID will result in the water supplier not receiving credit for conducting the required monitoring. If you do not know the PWS ID number, contact the local Department of Environmental Protection (DEP) or County Health Department (CHD) office. All PWS ID numbers are assigned by the local DEP or CHD office.
3. Filter Plant ID	Enter the 3-digit filter plant ID number to which these turbidity performance measurements apply. Failure to enter the correct plant ID will result in the water supplier not receiving credit for conducting the required performance monitoring. If you do not have an ID number assigned for the plant, contact the local DEP or CHD office to have this ID number assigned. Plant ID numbers range from 300-399.
4. Report month	Enter the date of the first day of the reporting period (MMDDYY). Example: For the April 2015 monitoring period enter 040115.
SECTION II. Combined Filter Effluent (CFE) Turbidity	
5. Plant Operation Hours	Enter the total number of hours the filter plant was in operation for the month, rounded to the nearest whole hour. Do not report fractional hours or minutes. The total hours operated will be used to calculate the total number of monthly effluent turbidity measurements required. At least one turbidity measurement must be recorded for every 15 minutes of plant operation or every 4 hours, if there is a continuous monitoring or recording equipment failure, as per 25 *Pa. Code* §109.301

SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS
FOR REPORTING SUMMARIZED FILTER TURBIDITY INFORMATION (continued)

Data Field	***Descriptions/Explanation***
SECTION II. Combined Filter Effluent (CFE) Turbidity (continued)	
Combined Filter Effluent Turbidity 6A. Number of Measurements:	Enter the total number of Combined Filter Effluent (CFE) turbidity measurements taken prior to disinfection during the month. Do not count each individual filter cell reading as a measurement. **Note:** See Section 4: *Reporting Requirements for Turbidity* for an explanation of how to report measurements from a continuous analyzer. If you are uncertain about filter effluent turbidity sampling location, contact your local DEP or CHD office for assistance. A turbidity performance monitoring sampling plan acceptable to DEP must be followed by PWSs. DEP and CHD contacts and phone numbers can found on eLibrary at www.depgreenport.state.pa.us/elibrary/ by searching 3930-FM-BSDW0560.
6B. Number of Results Meeting PLR:	Enter the number of CFE turbidity measurements that meet the filter plant PLR based on the type of filtration used.
7. Plant performance Level (PL) (xx.x%)	Divide the number of turbidity results that met the Plant Level Requirements (PLR) by the total number of turbidity measurements taken for the month. Then multiply by 100. $\%\ PL = [(number\ of\ samples\ that\ met\ PLR)/(number\ of\ samples\ taken)]\ x\ 100$ Enter this percentage to the nearest tenth. Example: Report 94.599% as 94.6% **Note**: If the % PL is less than 95%, notify the local DEP or CHD office within 48 hours.
SECTION III. CFE Turbidity Exceedance Reporting (All Filtered Systems)	
8. Did Any Results Exceed the Maximum Allowable Turbidity Level?	Select "Yes" or "No" to indicate if any of the turbidity results during the month exceeded the Maximum Allowable Turbidity Level expressed in Nephelometric Turbidity Units (NTUs): 1 NTU for Conventional, Direct, Membrane, or Other and 2.0 NTU for Slow Sand or DE).

SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS FOR REPORTING SUMMARIZED FILTER EFFLUENT TURBIDITY INFORMATION (continued)

Data Field	***Descriptions/Explanation***
SECTION III. CFE Turbidity Exceedance Reporting (All Filtered Systems) (continued)	
	Notes: ➢ Measurements exceed the Maximum Allowable Turbidity Level if they are equal to or exceed the following levels: 1.5 NTU (rounded to above 1 NTU) for Conventional, Direct, Membrane, or Other or 2.05 NTU (rounded to above 2.0 NTU) for Slow Sand and DE. ➢ This applies to *any* CFE turbidity value that exceeds the Maximum Allowable Turbidity Level, not just the 15-minute readings used to determine the monthly PLR. ➢ Report all CFE turbidity measurements that exceeded the Maximum Allowable Turbidity Level on an SDWA-1 form. ➢ Notify the local DEP or CHD office within 1 hour of any turbidity measurements that exceed the Maximum Allowable Turbidity Level. Search for document 3930-FM-BSDW0560 at www.depgreenport.state.pa.us/elibrary/ for DEP and CHD Offices Contact Lists.
SECTION IV. CFE Continuous Turbidity Monitoring and Recording (All filtered systems)	
9. Was continuous turbidity monitoring and recording conducted at least every 15 minutes on the CFE?	Please carefully select "Yes" or "No" and follow the instructions per "Yes" or "No" answer. If the answer to Question 9 is "Yes", go to Section V. If the answer to Question 9 is "No", proceed to Question 10.

SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS FOR REPORTING SUMMARIZED FILTER EFFLUENT TURBIDITY INFORMATION (continued)

Data Field	***Descriptions/Explanation***
SECTION IV. CFE Continuous Turbidity Monitoring and Recording (all filtered systems) (continued)	
10. If there was a failure in the continuous turbidity monitoring or recording equipment on the CFE, did you conduct grab sampling and/or manual recording every 4 hours for a period not exceeding 5 working days?	Only select "Yes" or "No" if Question 9 is answered "No".
SECTION V. Individual Filter Turbidity Exceedance Reporting (All filtered systems)	
11. Did any individual filter measurements exceed trigger level 1 or trigger level 2?	Please select "Yes" or "No". Report all individual filter turbidity measurements that exceed trigger level 1 or trigger level 2 on an SDWA-1 form. **Note**: This means measurements which are equal to or exceed 1.05 NTU in 2 consecutive 15-minute measurements or 0.55 NTU in 2 consecutive 15-minute measurements taken 4 hours after filter is returned to service, specifically at 4 hours and at 4 hours and 15 minutes after the filter is returned to service.
SECTION VI. Individual Filter Continuous Turbidity Monitoring and Recording (All filtered systems)	
12. Was continuous turbidity monitoring and recording conducted on all individual filters in operation at least every 15 minutes?	Please carefully select "Yes" or "No" and follow the instructions per "Yes" or "No" answer. If the answer to Question 12 is "Yes", go to Section VII. If the answer to Question 12 is "No", proceed to Question 13.

13. If there was a failure in the continuous turbidity monitoring or recording equipment on any individual filter, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?	Only select “Yes” or “No” if Question 12 is answered “No.”

Data Field	***Descriptions/Explanation***
SECTION VII. LT2 ESWTR Reporting (All filtered systems)	
14. What was the highest Bin source used during the month?	All systems with filtration are required to report the highest Bin source utilized (at this plant) *at any time* during the month. (See Section 5: *Reporting Requirements for LT2 ESWTR* for more information about source water bin classification.) Choose the correct Bin number. Bin 4 includes any unclassified SW or GUDI source used during the month. For example, if a source is utilized that has not undergone LT2 source monitoring or did not have a bin classification assigned, check the Bin 4 box.
SECTION VIII. CFE & IFE Performance Option (Conventional or Direct Filtration Using Bin 2 or Higher)	
15. Was the **combined filter effluent** (CFE) turbidity less than or equal to (≤) 0.15 NTU in at least 95% of the measurements for the month? 16. Was the **individual filter effluent** (IFE) turbidity less than or equal to (≤) 0.15 NTU in at least 95% of the measurements for the month?	Systems may choose to utilize the CFE and IFE Performance Toolbox Options to obtain *Cryptosporidium* treatment credit, to apply to their bin classification requirement for additional treatment. Select "Yes" or "No". Select "Yes" or "No".

SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS FOR REPORTING SUMMARIZED FILTER EFFLUENT TURBIDITY INFORMATION (CONT.)

Data Field	*Descriptions/Explanation*
SECTION VIII. CFE & IFE Performance Option (Conventional or Direct Filtration Using Bin 2 or Higher) (continued)	
17. Was the **individual filter effluent** (IFE) greater than (>) 0.30 NTU in two consecutive measurements taken at 15 minutes apart during the month?	Select "Yes" or "No". For systems with ***conventional filtration and using a Bin 2*** source only, if the answer is "Yes" to Questions 15 ***and*** 16 ***and*** "No" to Question 17, go to Section XI. All others, go to Section X. **Note:** LT2 ESWTR monitoring frequency and compliance calculation requirements for the IFE option are that IFE turbidity must be measured every 15 minutes, as described in §109.301(1), (excluding the first 15-minute period following return to service from a filter backwash).
SECTION IX. Membrane Filtration Integrity Testing (All Systems with Bins 1-4, Utilizing Membrane Filtration.)	
18: Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month? 19: Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?	Select "Yes" or "No". Select "Yes" or "No". **Note**: Continuous indirect integrity testing and direct integrity testing, on at least a daily basis, is required.

SDWA-5 FORM FIELD DESCRIPTIONS AND INSTRUCTIONS FOR REPORTING SUMMARIZED FILTER EFFLUENT TURBIDITY INFORMATION (CONT.)

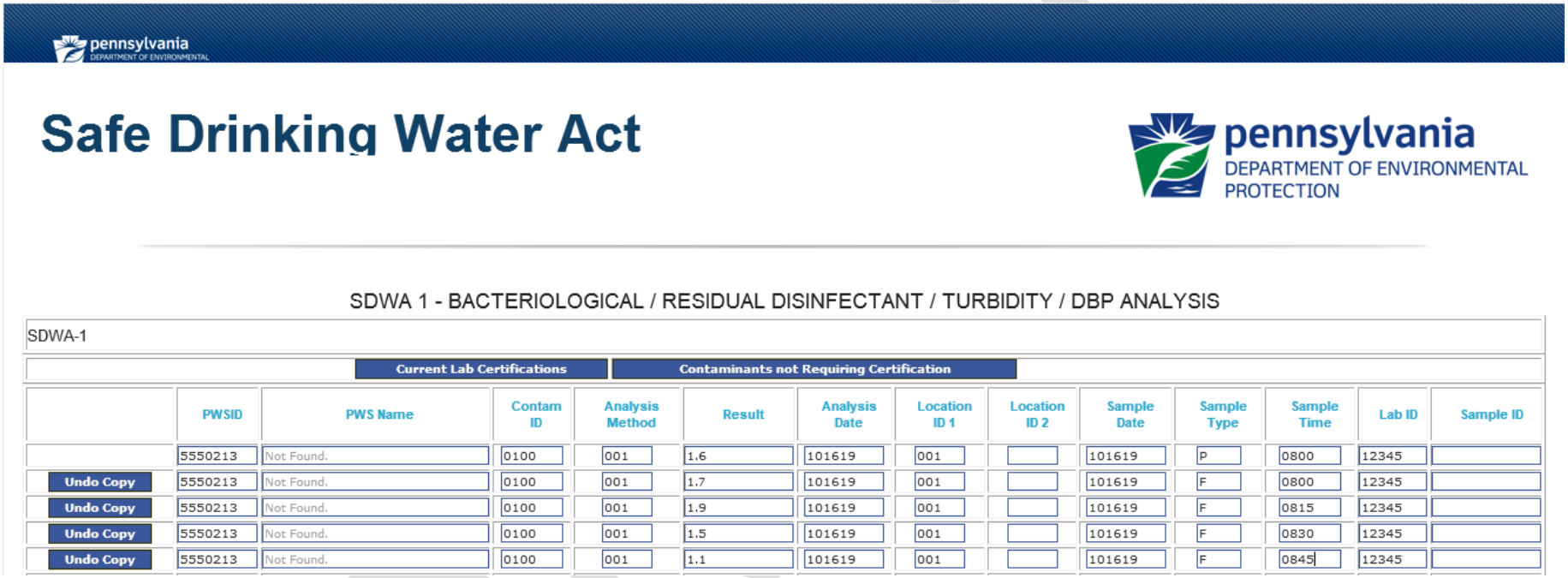
Data Field	***Descriptions/Explanation***
SECTION X. Microbial Toolbox Monthly Operational Report (Form #3900-FM-BSDW0517)	
Microbial Toolbox	The LT2 ESWTR and Chapter 109 regulations require routine monthly reporting for notification of what Toolbox option(s) were utilized during the month to meet bin classification log removal/inactivation requirements. Verification that all criteria were met to qualify for option credit, and where applicable, report necessary steps taken to correct problems where failure to meet criteria have occurred. Complete the LT2 ESWTR Monthly Operational Report (MOR) and submit it to DEP, if any of the conditions listed on the SDWA-5 form applied for the month. The LT2 Monthly Operational Report (MOR) Form #3900-FM-BSDW0517 may be found online at: www.depgreenport.state.pa.us/elibrary/search. Search *LT2 ESWTR Toolbox*. Submission of the LT2 MOR Form is made to the appropriate DEP Regional Office. In addition, to the LT2 MOR Form, additional LT2 treatment option specific forms may be provided by the region for completion in the event of a failure to meet rule criteria.
SECTION XI. Verification	
Approved By: Date:	By signing this form, you are certifying that the information contained here is true and accurate. (Signature of the responsible plant official and date. On an electronic form, submitting the record is the same as a signature.)

For a copy of the SDWA-5 in "paper" form, see Appendix III.

SUBSECTION B: SDWA-1 FORM; INSTRUCTIONS FOR REPORTING TURBIDITY

In DEP Greenport, go to *DWELR* and go to the Main Menu. Choose "Add Records" and the correct SDWA from the menus:

Choose the SDWA-1 BACTERIOLOGICAL/RESIDUAL DISINFECTANT/TURBIDITY/DBP ANALYSIS *input screen* to add the results.



pennsylvania
DEPARTMENT OF ENVIRONMENTAL

Safe Drinking Water Act

pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

SDWA 1 - BACTERIOLOGICAL / RESIDUAL DISINFECTANT / TURBIDITY / DBP ANALYSIS

SDWA-1

Current Lab Certifications | Contaminants not Requiring Certification

	PWSID	PWS Name	Contam ID	Analysis Method	Result	Analysis Date	Location ID 1	Location ID 2	Sample Date	Sample Type	Sample Time	Lab ID	Sample ID
	5550213	Not Found.	0100	001	1.6	101619	001		101619	P	0800	12345	
Undo Copy	5550213	Not Found.	0100	001	1.7	101619	001		101619	F	0800	12345	
Undo Copy	5550213	Not Found.	0100	001	1.9	101619	001		101619	F	0815	12345	
Undo Copy	5550213	Not Found.	0100	001	1.5	101619	001		101619	F	0830	12345	
Undo Copy	5550213	Not Found.	0100	001	1.1	101619	001		101619	F	0845	12345	

Submit Data and go to View and Edit records. **Note that this is also the *Printer Friendly* version**.

Safe Drinking Water Act

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

VIEW and EDIT RECORDS

Click here for a Printer Friendly Version

View a Monitoring Calendar

SDWA-1

				Current Lab Certifications	Contaminants not Requiring Certification								
☐	PWSID	Contam ID	Analysis Method	Result	Analysis Date	Location ID 1	Location ID 2	Sample Date	Sample Type	Sample Time	Lab ID	Sample ID	Record ID
	Sort			Sort Entry Point Chlorine				Sort			Sort		
☐	5550213	0100	001	1.6	101619	001		101619	P	0800	12345		STUDENTTE_525
☐	5550213	0100	001	1.7	101619	001		101619	F	0800	12345		STUDENTTE_526
☐	5550213	0100	001	1.9	101619	001		101619	F	0815	12345		STUDENTTE_527
☐	5550213	0100	001	1.5	101619	001		101619	F	0830	12345		STUDENTTE_528
☐	5550213	0100	001	1.1	101619	001		101619	F	0845	12345		STUDENTTE_529

SDWA-1 FORM: Bacteriological/Residual Disinfectant/Turbidity/DBP Analysis
(Instructions for Reporting Turbidity Exceedances)

Data Field	***Description/Explanation***
PWSID	Enter the 7-digit PWSID to which these samples apply. Failure to enter the PWSID will result in the water supplier not receiving credit for conducting the required monitoring. If you do not know the PWSID number, contact the local DEP or CHD office. All PWSID numbers are assigned by the local DEP or CHD office.
PWS Name	The system will automatically enter the name of the PWS after the PWSID is entered.
Contaminant ID	Enter the 4-digit identification code for the contaminant/parameter being reported. The code for turbidity is 0100.
Analysis Method	Enter the 3-digit code of the approved analysis method used to analyze the turbidity samples. The code is 001; units are Nephelometric Turbidity Units (NTU).
Result	Enter each turbidity measurement that exceeds the Maximum Allowable Turbidity Level, and/or all individual filter turbidity values that exceed either trigger level. Results should be reported as recorded at the treatment facility. For example, if the recording device records 1.54 NTU, it should be reported as 1.54 on the SDWA-1 form. If the recording device records 1.5 NTU, it should be reported as 1.5. For more information on reporting/recording turbidity results, refer to Section 4 of this manual.
Analysis Date	Enter the date (MMDDYY) on which the sample analysis was performed or measurement taken. For turbidity, the analysis date will be the same as the sample date (the samples are analyzed immediately). Enter the format as shown in the screenshot located on the previous page. EXAMPLE: Enter March 16, 2019, as 031619.
Location ID1 (Location ID, Entry Point number, or Plant ID number)	*Filter Plant Turbidity*: Enter the 3-digit Treatment Plant ID in the Location ID1 column. Performance samples or measurements are taken at the CFE before the clearwell and post treatment chemical addition at each treatment plant. **Note**: Enter the DEP or CHD assigned treatment plant ID numbers in this field, which always begin with "3" (e.g., 301).

SDWA-1 FORM: Bacteriological/Residual Disinfectant/Turbidity/DBP Analysis
(Instructions for Reporting Turbidity Exceedances)

Data Field	***Description/Explanation***
Location ID2 (Location ID, Entry Point number, or Plant ID number)	***Individual Filter Turbidity (IFE)***: Enter the 3-digit Individual Filter Number in the Location ID2 column. **Note**: The ***location ID2*** column is only used for ***individual filter (IFE) IDs***. DEP or CHD assigns the IFE ID numbers.
Sample Date	Enter the date (MMDDYY) on which the sample was collected. For turbidity, the sample date will be the same as the analysis date. Example: Enter March 16, 2019, as 031619.
Sample Type	Enter the appropriate letter code which corresponds to the type of sample collected as follows: P = Plant: All CFE turbidity samples. For filtered surface water systems, "P" means plant filtered water before the clearwell and post treatment chemical addition. F = Individual Filter: Samples taken at the individual filters are "F" samples. **Note**: Failure to report analysis results with the correct and appropriate *Sample Type Codes* will result in the water supplier receiving a *violation* for failure to monitor.
Sample Time	Enter the time of day at which the sample was collected. If the exact time is not known, enter an approximate time. Enter sample times in military time. Examples: 5:15 p.m. enter as 1715 and 8:30 a.m. enter as 0830.
Lab (Laboratory) ID	Enter the 5-digit PA Laboratory Identification number assigned to the laboratory that analyzed the samples.
Sample ID	For turbidity, this field may be left blank.

SECTION 6: INSTRUCTIONS FOR SDWA CORRECTION FORMS

The SDWA correction forms are for the correction of previously submitted data no longer in DWELR. Omitted sample results and summary forms that were not previously reported should be submitted through DWELR.

The two permitted methods to correct previously submitted data are as follows:

1) A copy of a DWELR printed report of the original submission may be used for corrections. If using a DWELR printout, strikeout the incorrect information and write the correct information on the report. Initial and date the correction. (Note: Do not strikeout the incorrect information heavily so that the original information cannot be read or faxed. Do not use a highlighter on forms to be faxed or copied.)

   Include the following information, which can be handwritten on the form:
   - The reason for the correction.
   - The name of the laboratory, the authorizing personnel and the date of the corrected submission.

2) SDWA Correction forms are shown in Appendix IV in this document (examples only). Correction forms are available online at www.depgreenport.state.pa.us/elibrary/Search. Enter *SDWA* in the Document Name field. Enter all the correct information as it should have been submitted. In the 'Submitted' sections, only the incorrect information should be entered. This information is required to identify the record.

Distribute SDWA corrections forms as follows:

ORIGINAL COPY: Send a copy to DEP's central office at the following mailing or direct carrier service (UPS, Fed Ex) address.

Distribute SDWA corrections forms as follows:

USPS	UPS or FED EX
PA DEP SDWA MONITORING DATA	PA DEP SDWA MONITORING DATA
10TH FLOOR RCSOB	10TH FLOOR RCSOB
PO BOX 8467	400 MARKET STREET
HARRISBURG PA 17105-8467	HARRISBURG PA 17101

Corrections may be submitted by fax if requested by DEP Safe Drinking Water central office or field personnel. Obtain the fax number directly from them. Only upon specific request by DEP field personnel should corrections be sent directly to the field office instead of the central office. In this case, a copy does not need to be sent to central office.

SECOND COPY: Send a copy to the water supplier.

THIRD COPY: Retain a copy for the laboratory's records.

SECTION 7: CASE STUDIES/EXAMPLES

Note: In addition to turbidity monitoring, the Filter Rules also require monitoring and reporting of the disinfectant residual at entry points to the distribution system as well as locations within the distribution system. Although disinfectant monitoring is not covered in the following example case studies, it is vital that operators understand their responsibilities regarding the monitoring and reporting of disinfectant residuals. Refer to the *Laboratory Reporting Instructions for Disinfectants, Disinfection Byproducts and Precursors* for all reporting information regarding disinfectant residuals. The technical guidance manual is available on the Department of Environmental Protection (DEP) website at www.depgreenport.state.pa.us/elibrary/ Enter "*Laboratory Reporting Instructions*" into the search.

Refer to Section 4: *Reporting Requirements for Turbidity* and Section 5: *Reporting Requirements for LT2 ESWTR Compliance* for more information about reporting the turbidity data.

CASE STUDY 1: ABC WATER COMPANY

(Exceeding both the CFE levels and IFE trigger levels)

Background

The ABC Water Co. (PWSID 5550213) has one surface water source that supplies one conventional filter plant (Plant ID 300). The filter plant has two individual filters that operate continuously and serve one entry point to the distribution system. Their source is classified as Bin 2, with a 1 log additional LT2 treatment requirement, which they have elected to meet utilizing the Combined & Individual Filter Effluent Performance Toolbox Options.

ABC Water Co. is required to:

- Continuously monitor and record the turbidity of the CFE at least once every 15 minutes.
- Continuously monitor and record the turbidity of each individual filter at least once every 15 minutes.
- Conduct grab sampling/manual recording every 4 hours in the event of monitoring or recording equipment failure for a period not to exceed 5 working days.

Requirements

The ABC Water Co. is required to meet the following:

CFE turbidity PLR requirements, per 25 Pa. Code §109.701(a)(2)(i)(A):

- At least 95 percent of the monthly CFE measurements must be $\leq$ 0.3 NTU.
- Maximum allowable turbidity level for all CFE measurements must be $\leq$ 1 NTU.

IFE trigger levels:

- > 0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous operation after the filter has been backwashed or taken off-line for any reason.
- > 1.0 NTU in 2 consecutive measurements taken 15 minutes apart.
- > 1.0 NTU in 2 consecutive measurements taken 15 minutes apart in 3 consecutive months.
- > 2.0 NTU in 2 consecutive measurements taken 15 minutes apart in 2 consecutive months.

LT2 ESWTR Microbial Toolbox Compliance Requirements (CFE and IFE Performance Option §§109.1204(g)&(h)):

- At least 95 percent of the monthly CFE measurements must be ≤ 0.15 NTU.
- At least 95 percent of the monthly IFE measurements must be ≤ 0.15 NTU excluding the 15-minute period following return to service from a filter backwash.
- No IFE may have a measured turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart.

Events

- During the month of October 2019, the filter plant operated continuously.
- 96 turbidity measurements were required for each day (4 readings per hour, for 24 hours).
- Therefore, the total number of CFE measurements required for October is 2,976 (31 x 96 = 2,976).
- Of the 2,976 routine CFE turbidity measurements, 200 exceeded the Performance Level Requirement (PLR) of 0.3 NTU. Therefore, 2,776 (2,976 – 200 = 2,776) of the routine measurements met the turbidity PLR of 0.3 NTU.
- Of the 2,976 routine CFE turbidity measurements, 250 exceeded the LT2 CFE Performance Option criteria of ≤ 0.15 NTU. Therefore, 2,726 (2,976 – 250 = 2,726) of the 15-minute measurements met the turbidity criteria of ≤ 0.15 NTU.
- IFEs that met or exceeded 0.15 NTU: Filter #1 had 340 readings that exceeded 0.15 NTU; Filter #2 had zero (0) readings that exceeded 0.15 NTU.
- On October 16, 2019, 1 of the CFE measurements exceeded 1 NTU. The measurement at Location ID 300 was 1.6 NTU.
- Also, on October 16, 2019, 4 consecutive IFE measurements between 8:00 a.m. and 8:45 a.m. from Location ID 300, filter 001 exceeded 1.0 NTU. The 4 measurements were: 1.7 NTU; 1.9 NTU; 1.5 NTU; and 1.1 NTU.

SDWA-5 Form:

Case Study 1, Screenshot 1 in this manual shows a completed SDWA-5 form reflecting the above events.

Section 1

This is general system information.

Section II

To determine whether the CFE PLR was met, divide the number of measurements that met the 0.3 NTU turbidity PLR (2,776) by the total number of measurements taken (2,976) and multiply that by 100.

$$\frac{2{,}776}{2{,}976}\ x\ 100 = 93.3\%$$

Section III

The "Yes" box is selected for Question 8 because one of the CFE measurements exceeded 1 NTU.

Note: *An SDWA-1 form will need to be completed to report this exceedance measurement.*

Section IV

The "Yes" box is selected for Question 9; however, Question 10 is left blank because continuous monitoring and recording was conducted as required on the CFE.

Section V

The "Yes" box is selected for Question 11 because 4 consecutive IFE measurements from filter 001 exceeded 1.0 NTU.

Note: *Report these individual filter measurements on an SDWA-1 form.*

Section VI

The "Yes" box is selected for Question 12; Question 13 is left blank because continuous monitoring and recording was conducted as required on each individual filter.

The following sections relate to the LT2 ESWTR reporting:

Section VII

The second box is selected for Question 14, because a Bin 2 source was the highest bin used during the month.

Section VIII

For Question 15, to determine whether the LT2 CFE Performance Toolbox Option Criteria was met, divide the number of measurements that were ≤ 0.15 NTU turbidity by the total number of measurements taken and multiply that by 100.

$$\frac{2{,}726}{2{,}976}\ x\ 100 = 91.6\%$$

The "No" box is selected for Question 15 because the number of CFE measurements exceeding 0.15 NTU were such that the 95% ≤ 0.15 NTU criteria was not met. Additional log removal credit cannot be obtained for this month for CFE performance.

For Question 16, to determine whether the first LT2 IFE Performance Toolbox Option Criteria was met, divide the number of measurements that met the 0.15 NTU turbidity criteria by the total number of measurements taken and multiply that by 100. If the criteria were met *for each filter*, select "Yes". If not, Select "No". For the purposes of this example, filter #1 had 2,976 readings (31 days x 24 hours per day x 4 readings per hour); 2,636 IFE readings met the ≤ 0.15 NTU turbidity criteria.

$$\frac{2{,}636}{2{,}976} \text{ x } 100 = 89\% \text{ rounded}$$

The "No" box is selected for Question 16 because the 95% ≤ 0.15 NTU criteria was not met.

For Question 17, to determine whether the second LT2 IFE Performance Toolbox Option Criteria was met, indicate whether IFE turbidity exceeded 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month, *in any filter*. Because on October 16, 4 consecutive readings exceeded 0.3 NTU, the answer to Question 17 is "Yes". Additional log removal credit cannot be obtained for this month for IFE performance.

Section X

Because the CFE and IFE performance criteria were not met, a Monthly Operational Report (MOR) must be completed and submitted to the appropriate DEP Regional Office, as per 25 *Pa. Code* §109.1206(h).

Section XI

Complete and submit electronically.

SDWA-1 Form

Case Study 1, Screenshot 2 shows a completed SDWA-1 form reflecting the above events.

- Report all CFE (> 1 NTU) and IFE (> 1.0 NTU) exceedances on the SDWA-1 form.
- The treatment plant ID is used in the Location ID 1 field for both CFE and IFE measurements.
- The Location ID 2 field is completed with the individual filter ID for IFE measurements, but left blank for CFE measurements.
- Use sample type "P" for CFE measurements and sample type "F" for IFE measurements.

Case Study 1, Screenshot 1
SDWA-5

Safe Drinking Water Act

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

I. General Plant Information

PWS Name: ABC Water Company

(1) PWSID	(2) Trans	(3) Filter Plant ID	(4) Report Month MMDDYY (1st of the month)
5550213	09	300	100119

II. Combined Filter Effluent (CFE) Turbidity (All filtered systems)

(5) Plant Operation Hours	Combined Filter Effluent Turbidity		(7) Plant Performance Level (xx.x%)
	(6A) Number of Measurements	(6B) Number of Results Meeting PLR	
744	2976	2776	6B X 100/6A = 93.3 %

Turbidity Performance Level Requirements (NTUs)
<=0.3 NTUs for Conventional, Direct, and Other
<=0.15 NTUs for Membrane
<=1.0 NTU for Slow Sand and DE

III. CFE Turbidity Exceedance Reporting (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level?
Yes

Maximum Allowable Turbidity (NTUs)
1 NTU for Conventional, Direct, Membrane, or Other
2.0 NTUs for Slow Sand or DE

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See reporting instructions (383-3301-106) for reporting CFE turbidity measurements.)

IV. CFE Continuous Turbidity Monitoring and Recording (All filtered systems)

(9) Was continuous turbidity monitoring and recording conducted at least every 15 minutes on the CFE?

Yes

Yes (Go directly to Section V)

No (Proceed to question #10)

(10) If there was a failure in the continuous turbidity monitoring or recording equipment on the CFE, did you conduct grab sampling and/or manual recording every 4 hours for a period not exceeding 5 working days?

Select

V. Individual Filter Turbidity Exceedance Reporting (All filtered systems)

(11) Did any individual filter measurements exceed Trigger Level #1 or Trigger Level #2?

Yes

Trigger Level #1: Turbidity >1.0 NTU in 2 consecutive measurements taken 15 minutes apart.
Trigger Level #2: Turbidity >0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous operation after the filter is returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters, regardless of the reason.
Record all measurements on an SDWA-1 form.
(See reporting instructions (383-3301-106) for reporting individual filter turbidity measurements.)

VI. Individual Filter Continuous Turbidity Monitoring and Recording (All filtered systems)

(12) Was continuous turbidity monitoring and recording conducted on all individual filters in operation at least every 15 minutes?

Yes

Yes (Go directly to Section VII)

No (Proceed to question #13)

(13) If there was a failure in the continuous turbidity monitoring or recording equipment on any individual filter, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?

Select

VII. LT2ESWTR Reporting (All filtered systems)

(14) What was the highest Bin source used during the month?

Bin 2

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

If Bin 1 using only **Conventional, Direct, Slow Sand, DE** or **Other** filtration, go to Section XI.

If Bin 2 or higher using **Conventional** or **Direct** filtration, go to section VIII.

If Bin 2 or higher and using **Slow Sand, DE,** or **Other** filtration, go to Section X.

If using **Membrane** filtration, (all Bin #s), go to Section IX.

VIII. CFE & IFE Performance Option-- Conventional or Direct filtration using Bin 2 or higher

(15) Was the CFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?
No

(16) Was the IFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?
No

(17) Was the IFE turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?
Yes

Systems with Conventional filtration using Bin 2 source only: If the answer is "Yes" to Q15 & 16 and "No" to Q 17 go to section XI. All others, go to Section X.

IX. Membrane Filtration Integrity Testing

(18) Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?
Select

(19) Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?
Select

X. Microbial Toolbox Monthly Operational Report, Form # 3900-FM-BSDW0517

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were :

PWS with Conventional filtration not meeting CFE and/or IFE Performance criteria in section VIII,

PWS with Membrane filtration using any Bin source,

PWS with Direct, Slow Sand, DE, or Other filtration using a Bin 2, Bin 3 or Bin 4 source,

PWS with Conventional filtration using a Bin 3 or Bin 4 source.

XI. Verification

By signing this form you are certifying that the information contained herein is true and correct to the best of your knowledge, information and belief. The information given is subject to the penalty provisions of the Crimes Code regarding unsworn falsification to authorities (18 P.S.C.S.A §4904).

Approved by: Date:

Submit Cancel

In this case, a warning message will appear because a Monthly Operational Report (MOR) needs completed:

****** Warning: submit LT2 tool box MOR ******

Case Study 1, Screenshot 2
SDWA-1

Safe Drinking Water Act

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

VIEW and EDIT RECORDS

Click here for a Printer Friendly Version

View a Monitoring Calendar

SDWA-1

				Current Lab Certifications		Contaminants not Requiring Certification							
☐	PWSID	Contam ID	Analysis Method	Result	Analysis Date	Location ID 1	Location ID 2	Sample Date	Sample Type	Sample Time	Lab ID	Sample ID	Record ID
	Sort			Sort Entry Point Chlorine				Sort			Sort		
☐	5550213	0100	001	1.6	101619	001		101619	P	0800	12345		STUDENTTE_525
☐	5550213	0100	001	1.7	101619	001		101619	F	0800	12345		STUDENTTE_526
☐	5550213	0100	001	1.9	101619	001		101619	F	0815	12345		STUDENTTE_527
☐	5550213	0100	001	1.5	101619	001		101619	F	0830	12345		STUDENTTE_528
☐	5550213	0100	001	1.1	101619	001		101619	F	0845	12345		STUDENTTE_529

CASE STUDY 2: XYZ WATER COMPANY

(IFE Turbidimeter Failure)

Refer to Section 4: *Reporting Requirements for Turbidity* and Section 5: *Reporting Requirements for LT2 ESWTR Compliance* for more information about reporting turbidity.

Background

The XYZ Water Company (PWSID 5648509) has two surface water sources that supply water to one conventional filter plant (Plant ID 300). The filter plant has four individual filters operating continuously and serves one entry point to the distribution system. The system's Source ID 001 is a "Bin 1" source. Source ID 002 is a "Bin 3" source and was not used as a source in October 2019.

Requirements

XYZ Water Co. is required to:

- Continuously monitor and record the turbidity of the CFE at least once every 15 minutes.
- Continuously monitor and record the turbidity of each individual filter at least once every 15 minutes.
- Conduct grab sampling/manual recording every 4 hours in the event of monitoring or recording equipment failure for IFE or CFE turbidity, for a period not to exceed 5 working days.

Events

- During the month of October 2019, the filter plant operated continuously for a total of 744 hours. Therefore, the total number of CFE measurements required for October is 2,976. The system took 2,976 CFE turbidity measurements, and all of the measurements met the Performance Level Requirement (PLR) of 0.3 NTU.
- On October 4, 2019, at approximately 11 a.m., the IFE turbidimeters for individual filters 001 and 002 malfunctioned. The IFE turbidimeters were still operating for the other filters and the CFE turbidimeter was still operating. The operators began manually measuring and recording IFE readings on filters 001 and 002 every 4 hours until the turbidimeters were repaired and operating. On October 8, 2019 at approximately 3 p.m., the turbidimeters were repaired and resumed measuring the IFE turbidity every 15 minutes. None of the IFE measurements exceeded a trigger level at any time during the month (based on continuously recorded IFE measurements and the manually recorded measurements).

SDWA-5 Form

The Case Study 2 Screenshot on the following pages shows a completed SDWA-5 form. In the event of IFE equipment failure, systems must conduct grab sampling for IFE turbidity measurements for a period not to exceed 5 days, as per 25 *Pa. Code* §109.301(1)(iv).

Section I

This is general system information.

Section II

To determine whether the CFE PLR was met, divide the number of measurements that met the 0.3 NTU PLR (2,976) by the total number of measurements taken (2,976) and multiply that by 100.

Section III

The box is checked "No" for Question 8 because none of the CFE measurements exceeded 1 NTU.

Section IV

The box is checked "Yes" for Question 9; Question 10 is left blank because continuous monitoring and recording was conducted as required on the CFE.

Section V

The box for Question 11 is checked "No" because none of the IFE measurements exceeded 1.0 NTU.

Section VI

The box for Question 12 is checked "No" because individual filter monitoring was not conducted continuously on filters 001 and 002 during the month.

The box for Question 13 is checked "Yes" because continuous monitoring was interrupted due to equipment failure, and grab sampling was conducted every 4 hours on filters 001 and 002, as required, and lasted for 4 days and 4 hours, which does *not* exceed the maximum of 5 working days

The following sections relate to the LT2 ESWTR Reporting:

Section VII

The box for Question 14 "Bin 1" is selected because the only source used that month was a Bin 1 source.

Sections VIII, IX and X

These sections do not pertain; skip to Section XI.

Section XI

Complete and submit electronically.

Note: Because both the CFE and IFE measurements *did not exceed the maximum allowable turbidity (NTUs),* an SDWA-1 form is not required in this situation.

Case Study 2, Example Screenshot

Safe Drinking Water Act

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

I. General Plant Information

PWS Name: XYZ Water Company

(1) PWSID	(2) Trans	(3) Filter Plant ID	(4) Report Month MMDDYY (1st of the month)
5648509	09	300	100119

II. Combined Filter Effluent (CFE) Turbidity (All filtered systems)

(5) Plant Operation Hours	Combined Filter Effluent Turbidity		(7) Plant Performance Level (xx.x%)
	(8A) Number of Measurements	(8B) Number of Results Meeting PLR	
744	2976	2976	6B X 100/6A = 100 %

Turbidity Performance Level Requirements (NTUs)
<=0.3 NTUs for Conventional, Direct, and Other
<=0.15 NTUs for Membrane
<=1.0 NTU for Slow Sand and DE

III. CFE Turbidity Exceedance Reporting (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level?
No

Maximum Allowable Turbidity (NTUs)
1 NTU for Conventional, Direct, Membrane, or Other
2.0 NTUs for Slow Sand or DE

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See reporting instructions (383-3301-106) for reporting CFE turbidity measurements.)

IV. CFE Continuous Turbidity Monitoring and Recording (All filtered systems)

(9) Was continuous turbidity monitoring and recording conducted at least every 15 minutes on the CFE?

Yes

Yes (Go directly to Section V)

No (Proceed to question #10)

(10) If there was a failure in the continuous turbidity monitoring or recording equipment on the CFE, did you conduct grab sampling and/or manual recording every 4 hours for a period not exceeding 5 working days?

Select

V. Individual Filter Turbidity Exceedance Reporting (All filtered systems)

(11) Did any individual filter measurements exceed Trigger Level #1 or Trigger Level #2?

No

Trigger Level #1: Turbidity >1.0 NTU in 2 consecutive measurements taken 15 minutes apart.
Trigger Level #2: Turbidity >0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous operation after the filter is returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters, regardless of the reason.
Record all measurements on an SDWA-1 form.
(See reporting instructions (383-3301-106) for reporting individual filter turbidity measurements.)

VI. Individual Filter Continuous Turbidity Monitoring and Recording (All filtered systems)

(12) Was continuous turbidity monitoring and recording conducted on all individual filters in operation at least every 15 minutes?

No

Yes (Go directly to Section VII)

No (Proceed to question #13)

(13) If there was a failure in the continuous turbidity monitoring or recording equipment on any individual filter, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?

Yes

VII. LT2ESWTR Reporting (All filtered systems)

(14) What was the highest Bin source used during the month?

Bin 1

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

If Bin 1 using only **Conventional, Direct, Slow Sand, DE** or **Other** filtration, go to Section XI.

If Bin 2 or higher using **Conventional** or **Direct** filtration, go to section VIII.

If Bin 2 or higher and using **Slow Sand, DE,** or **Other** filtration, go to Section X.

If using **Membrane** filtration, (all Bin #s), go to Section IX.

VIII. CFE & IFE Performance Option-- Conventional or Direct filtration using Bin 2 or higher

(15) Was the CFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

(16) Was the IFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

(17) Was the IFE turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?

Select

Systems with Conventional filtration using Bin 2 source only: If the answer is "Yes" to Q15 & 16 and "No" to Q 17 go to section XI. All others, go to Section X.

IX. Membrane Filtration Integrity Testing

(18) Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?

Select

(19) Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?

Select

X. Microbial Toolbox Monthly Operational Report, Form # 3900-FM-BSDW0517

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were :

PWS with Conventional filtration not meeting CFE and/or IFE Performance criteria in section VIII,

PWS with Membrane filtration using any Bin source,

PWS with Direct, Slow Sand, DE, or Other filtration using a Bin 2, Bin 3 or Bin 4 source,

PWS with Conventional filtration using a Bin 3 or Bin 4 source.

XI. Verification

By signing this form you are certifying that the information contained herein is true and correct to the best of your knowledge, information and belief. The information given is subject to the penalty provisions of the Crimes Code regarding unsworn falsification to authorities (18 P.S.C.S.A §4904).

Approved by: Date:

Submit Cancel

CASE STUDY 3: 123 WATER AUTHORITY

(IFE Recorder Failure)

Background

The 123 Water Authority (PWSID 3649728) has two surface water sources that supply water to one direct filtration plant (Plant ID 300). The filtration plant has four individual filters operating continuously and serves one entry point to the distribution system. The system's two sources were in use. Source ID 001 is a "Bin 1" source and Source ID 002 is a "Bin 2" source.

Requirements

- Continuously monitor and record the turbidity of the CFE at least once every 15 minutes.
- Continuously monitor and record the turbidity of each individual filter at least once every 15 minutes.
- Conduct grab sampling/manual recording every 4 hours in the event of monitoring or recording equipment failure for a period not to exceed 5 working days.

Events

- During the month of October 2019, the filtration plant operated continuously. The total number of CFE measurements required for October is 2,976. All 2,976 routine CFE turbidity measurements met the Performance Level Requirement (PLR) of 0.3 NTU.
- On October 1, 2019, at 2:30 p.m., the computer system recording the IFE measurements failed; CFE continuous monitoring and recording was not affected. The IFE turbidimeters were still operating continuously, but the IFE measurements were not being recorded. The operators manually recorded readings every 4 hours until the computer system was back up and running. On October 6 at 12:45 p.m., the computer system was restored and the IFE measurements were again being recorded every 15 minutes. None of the IFE measurements exceeded a trigger level at any time during the month (based on recorded IFE measurements, the manually recorded measurements and the fact that the IFE alarms were not triggered).

SDWA-5 Form

The Case Study 3 Screenshot on the following pages shows a correctly completed SDWA-5 form. In the event of IFE equipment failure, systems must conduct manual recording for IFE turbidity measurements for a period not to exceed 5 working days, as per 25 *Pa. Code* §109.301(1)(iv).

Section I

This is general system information.

Section II

To determine whether the CFE PLR was met, divide the number of measurements that met the 0.3 NTU turbidity PLR (2,976) by the total number of measurements taken (2,976) and multiply that by 100.

Section III

For Question 8, the "No" box is selected because none of the CFE measurements exceeded 1 NTU.

Section IV

The box is checked "Yes" for Question 9; Question 10 is left blank because continuous monitoring and recording was conducted as required on the CFE.

Section V

The "No" box for Question 11 is selected because none of the IFE measurements exceeded 1.0 NTU.

Section VI

The "No" box for Question 12 is selected because the results of individual filter monitoring were not continuously recorded every 15 minutes during the month.

The "Yes" box for Question 13 is selected because continuous recording was interrupted due to equipment failure and manual recording was conducted every 4 hours, as required, for a period of time lasting less than the maximum allowed of 5 days.

The following sections relate to the LT2 ESWTR Reporting:

Section VII

For Question 14, "Bin 2" should be selected because it's the highest Bin level source in use.

Sections VIII, IX and X

See example screenshot Case Study #3 on the following page; skip to Section X and complete the Monthly Operational Report (MOR).

Section XI

Complete and submit electronically.

Note: Because both the CFE and IFE measurements *did not exceed the maximum allowable turbidity (NTUs),* an SDWA-1 form is not required in this situation.

Case Study 3, Screenshot

Safe Drinking Water Act

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

I. General Plant Information

PWS Name: 123 Water Authority

(1) PWSID	(2) Trans	(3) Filter Plant ID	(4) Report Month MMDDYY (1st of the month)
3649728	09	300	100119

II. Combined Filter Effluent (CFE) Turbidity (All filtered systems)

(5) Plant Operation Hours	Combined Filter Effluent Turbidity		(7) Plant Performance Level (xx.x%)
	(6A) Number of Measurements	(6B) Number of Results Meeting PLR	
744	2976	2976	6B X 100/6A = 100 %

Turbidity Performance Level Requirements (NTUs)
<=0.3 NTUs for Conventional, Direct, and Other
<=0.15 NTUs for Membrane
<=1.0 NTU for Slow Sand and DE

III. CFE Turbidity Exceedance Reporting (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level?
No

Maximum Allowable Turbidity (NTUs)
1 NTU for Conventional, Direct, Membrane, or Other
2.0 NTUs for Slow Sand or DE

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See reporting instructions (383-3301-106) for reporting CFE turbidity measurements.)

IV. CFE Continuous Turbidity Monitoring and Recording (All filtered systems)

(9) Was continuous turbidity monitoring and recording conducted at least every 15 minutes on the CFE?

Yes

Yes (Go directly to Section V)

No (Proceed to question #10)

(10) If there was a failure in the continuous turbidity monitoring or recording equipment on the CFE, did you conduct grab sampling and/or manual recording every 4 hours for a period not exceeding 5 working days?

Select

V. Individual Filter Turbidity Exceedance Reporting (All filtered systems)

(11) Did any individual filter measurements exceed Trigger Level #1 or Trigger Level #2?

No

Trigger Level #1: Turbidity >1.0 NTU in 2 consecutive measurements taken 15 minutes apart.
Trigger Level #2: Turbidity >0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous operation after the filter is returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters, regardless of the reason.
Record all measurements on an SDWA-1 form.
(See reporting instructions (383-3301-106) for reporting individual filter turbidity measurements.)

VI. Individual Filter Continuous Turbidity Monitoring and Recording (All filtered systems)

(12) Was continuous turbidity monitoring and recording conducted on all individual filters in operation at least every 15 minutes?

No

Yes (Go directly to Section VII)

No (Proceed to question #13)

(13) If there was a failure in the continuous turbidity monitoring or recording equipment on any individual filter, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?

Yes

VII. LT2ESWTR Reporting (All filtered systems)

(14) What was the highest Bin source used during the month?

Bin 2

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

If Bin 1 using only **Conventional, Direct, Slow Sand, DE** or **Other** filtration, go to Section XI.

If Bin 2 or higher using **Conventional** or **Direct** filtration, go to section VIII.

If Bin 2 or higher and using **Slow Sand, DE,** or **Other** filtration, go to Section X.

If using **Membrane** filtration, (all Bin #s), go to Section IX.

VIII. CFE & IFE Performance Option-- Conventional or Direct filtration using Bin 2 or higher

(15) Was the CFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Yes

(16) Was the IFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Yes

(17) Was the IFE turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?

No

Systems with Conventional filtration using Bin 2 source only: If the answer is "Yes" to Q15 & 16 and "No" to Q 17 go to section XI. All others, go to Section X.

IX. Membrane Filtration Integrity Testing

(18) Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?

Select

(19) Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?

Select

X. Microbial Toolbox Monthly Operational Report, Form # 3900-FM-BSDW0517

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were :

PWS with Conventional filtration not meeting CFE and/or IFE Performance criteria in section VIII,

PWS with Membrane filtration using any Bin source,

PWS with Direct, Slow Sand, DE, or Other filtration using a Bin 2, Bin 3 or Bin 4 source,

PWS with Conventional filtration using a Bin 3 or Bin 4 source.

XI. Verification

By signing this form you are certifying that the information contained herein is true and correct to the best of your knowledge, information and belief. The information given is subject to the penalty provisions of the Crimes Code regarding unsworn falsification to authorities (18 P.S.C.S.A §4904).

Approved by: Date:

Submit Cancel

CASE STUDY 4: THE MEMBRANE FILTRATION WATER AUTHORITY

Background

The Membrane Filtration Water Authority (PWSID 3649728) has two surface water sources that supply water to a membrane filtration plant (Plant ID 300). The filtration plant has four individual filters operating continuously and serving one entry point to the distribution system. The system serves 15,000 people. Source ID 001 is a "Bin 1" source and Source ID 002 is a "Bin 2" source. Both sources were in use during the month.

Requirements

The Membrane Filtration Water Authority is required to:

- Continuously monitor and record the turbidity of the CFE at least once every 15 minutes.
- Continuously monitor and record the turbidity of each individual filter at least once every 15 minutes.
- Conduct grab sampling/manual recording every 4 hours in the event of monitoring or recording equipment failure for a period not to exceed 5 working days.
- Conduct direct and indirect integrity tests of each filter.

Events

During the month of October 2019, the filter plant operated continuously; the plant passed all pressure decay tests (PDT), and there were no direct or indirect integrity test exceedances during the month. The total number of CFE measurements required for October is 2,976. All 2,976 routine CFE turbidity measurements met the Performance Level Requirement (PLR) of 0.15 NTU.

SDWA-5 Form

The Case Study 4 Screenshot on the following pages shows a correctly completed SDWA-5 form. In the event of IFE equipment failure, systems must conduct manual recording for IFE turbidity measurements for a period not to exceed 5 working days, as per 25 *Pa. Code* §109.301(1)(iv).

Section I

This is general system information.

Section II

To determine whether the CFE PLR was met, divide the number of measurements that met the 0.15 NTU turbidity PLR (2,976) by the total number of measurements taken (2,976) and multiply that by 100.

Section III

"No" is selected for Question 8 because none of the CFE measurements exceeded 1 NTU.

Section IV

Question 9 is "Yes"; Question 10 is left blank since all CFE monitoring and recording was done as required.

Section V

Question 11 is "No" because all IFE measurements were below 1.0 NTU.

Section VI

Question 12 is "Yes"; Question 13 is left blank since all individual filter monitoring and recording was done as required.

The following sections relate to the LT2 ESWTR Reporting:

Section VII

For Question 12, "Bin 2" is selected because the highest Bin source is Bin 2 and both sources were used throughout the month. For all membrane filtration systems (all Bin #s), skip Section VIII and go to Section IX.

Section VIII

This section does not pertain; skip to Section IX.

Section IX

Because the plant did not have a direct or indirect integrity test exceedance, answer "No" to Questions 18 & 19.

Section X

Submission of a Monthly Operational Report (MOR) form 3900-FM-BSDW0517 is required for system using membrane filtration for any Bin source.

Section XI

Complete Section XI and submit electronically.

Note: Because both the CFE and IFE measurements *did not exceed the maximum allowable turbidity (NTUs),* and SDWA-1 form is not required in this situation.

Case Study 4, Screenshot

Safe Drinking Water Act

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SDWA 5 - MONTHLY FILTER PLANT PERFORMANCE

I. General Plant Information

PWS Name: The Membrane Filtration Water Authority

(1) PWSID	(2) Trans	(3) Filter Plant ID	(4) Report Month MMDDYY (1st of the month)
3649728	09	300	100119

II. Combined Filter Effluent (CFE) Turbidity (All filtered systems)

(6) Plant Operation Hours	Combined Filter Effluent Turbidity		(7) Plant Performance Level (xx.x%)
	(6A) Number of Measurements	(6B) Number of Results Meeting PLR	
744	2976	2976	6B X 100/6A = 100 %

Turbidity Performance Level Requirements (NTUs)
<=0.3 NTUs for Conventional, Direct, and Other
<=0.15 NTUs for Membrane
<=1.0 NTU for Slow Sand and DE

III. CFE Turbidity Exceedance Reporting (All filtered systems)

(8) Did any results exceed the maximum allowable turbidity level?
No

Maximum Allowable Turbidity (NTUs)
1 NTU for Conventional, Direct, Membrane, or Other
2.0 NTUs for Slow Sand or DE

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See reporting instructions (383-3301-106) for reporting CFE turbidity measurements.)

IV. CFE Continuous Turbidity Monitoring and Recording (All filtered systems)

(9) Was continuous turbidity monitoring and recording conducted at least every 15 minutes on the CFE?

Yes

Yes (Go directly to Section V)

No (Proceed to question #10)

(10) If there was a failure in the continuous turbidity monitoring or recording equipment on the CFE, did you conduct grab sampling and/or manual recording every 4 hours for a period not exceeding 5 working days?

Select

V. Individual Filter Turbidity Exceedance Reporting (All filtered systems)

(11) Did any individual filter measurements exceed Trigger Level #1 or Trigger Level #2?

No

Trigger Level #1: Turbidity >1.0 NTU in 2 consecutive measurements taken 15 minutes apart.
Trigger Level #2: Turbidity >0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous operation after the filter is returned to service.
For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters, regardless of the reason.
Record all measurements on an SDWA-1 form.
(See reporting instructions (383-3301-106) for reporting individual filter turbidity measurements.)

VI. Individual Filter Continuous Turbidity Monitoring and Recording (All filtered systems)

(12) Was continuous turbidity monitoring and recording conducted on all individual filters in operation at least every 15 minutes?

Yes

Yes (Go directly to Section VII)

No (Proceed to question #13)

(13) If there was a failure in the continuous turbidity monitoring or recording equipment on any individual filter, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?

Select

VII. LT2ESWTR Reporting (All filtered systems)

(14) What was the highest Bin source used during the month?

Bin 2

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

If Bin 1 using only **Conventional, Direct, Slow Sand, DE** or **Other** filtration, go to Section XI.

If Bin 2 or higher using **Conventional** or **Direct** filtration, go to section VIII.

If Bin 2 or higher and using **Slow Sand, DE,** or **Other** filtration, go to Section X.

If using **Membrane** filtration, (all Bin #s), go to Section IX.

VIII. CFE & IFE Performance Option-- Conventional or Direct filtration using Bin 2 or higher

(15) Was the CFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

(16) Was the IFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

Select

(17) Was the IFE turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?

Select

Systems with Conventional filtration using Bin 2 source only: If the answer is "Yes" to Q15 & 16 and "No" to Q 17 go to section XI. All others, go to Section X.

IX. Membrane Filtration Integrity Testing

(18) Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?

No

(19) Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?

No

X. Microbial Toolbox Monthly Operational Report, Form # 3900-FM-BSDW0517

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were :

PWS with Conventional filtration not meeting CFE and/or IFE Performance criteria in section VIII,

PWS with Membrane filtration using any Bin source,

PWS with Direct, Slow Sand, DE, or Other filtration using a Bin 2, Bin 3 or Bin 4 source,

PWS with Conventional filtration using a Bin 3 or Bin 4 source.

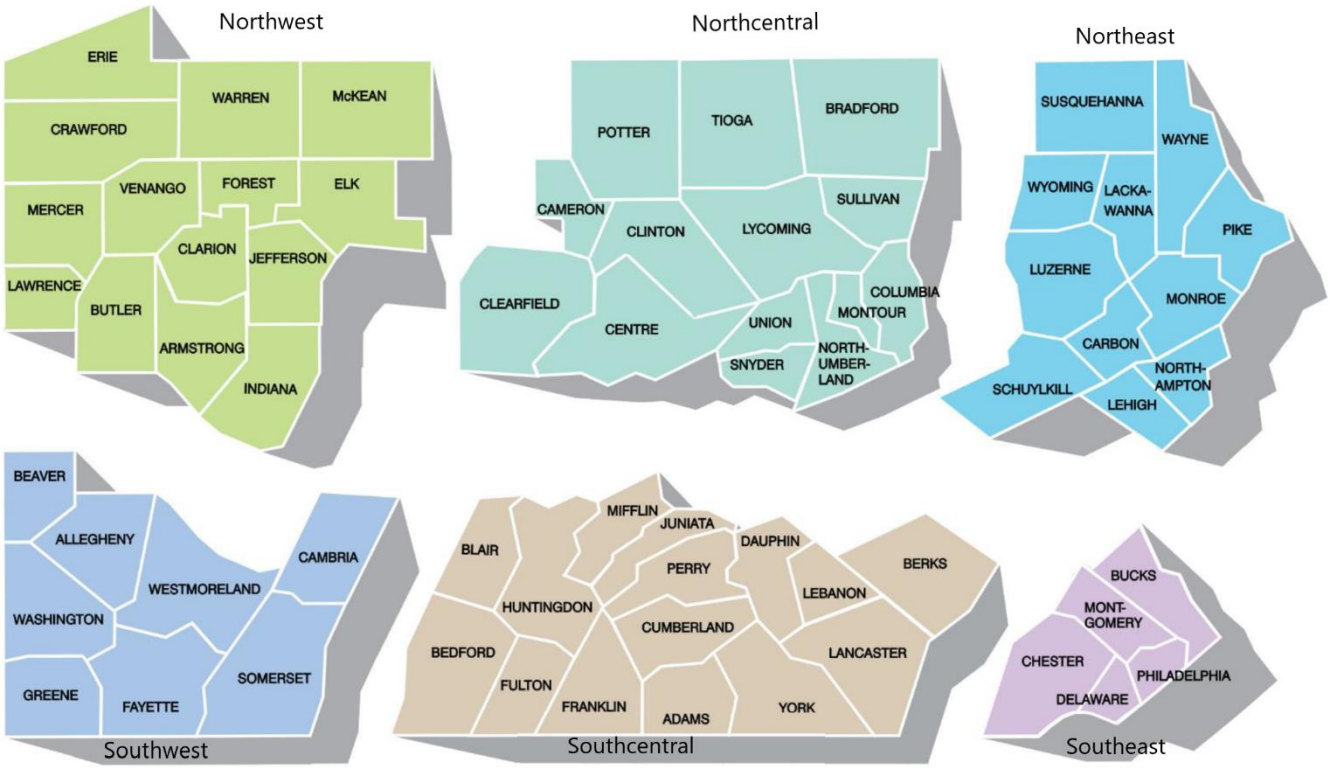
XI. Verification

By signing this form you are certifying that the information contained herein is true and correct to the best of your knowledge, information and belief. The information given is subject to the penalty provisions of the Crimes Code regarding unsworn falsification to authorities (18 P.S.C.S.A §4904).

Approved by: Date:

Submit Cancel

Appendix I: Emergency Phone Numbers for the Department of Environmental Protection Regional Offices



DEP Regional Offices

Northwest Region
230 Chestnut St.
Meadville, PA 16335-3481
Main Telephone: 814-332-6945
24-Hour Emergency: 800-373-3398

Counties: *Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango and Warren*

Southwest Region
400 Waterfront Drive
Pittsburgh, PA 15222-4745
Main Telephone: 412-442-4000
24-Hour Emergency: 412-442-4000

Counties: *Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington and Westmoreland*

Northcentral Region
208 W. Third St., Suite 101
Williamsport, PA 17701-6448
Main Telephone: 570-327-3636
24-Hour Emergency: 570-327-3636

Counties: *Bradford, Cameron, Clearfield, Centre, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga and Union*

Southcentral Region
909 Elmerton Ave.
Harrisburg, PA 17110-8200
Main Telephone: 717-705-4700
24-Hour Emergency: 800-541-2050

Counties: *Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York*

Northeast Region
2 Public Square
Wilkes-Barre, PA 18701-1914
Main Telephone: 570-826-2511
24-Hour Emergency: 570-826-2511

Counties: *Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne and Wyoming*

Southeast Region
2 E. Main St.
Norristown, PA 19401-4915
Main Telephone: 484-250-5900
24-Hour Emergency: 484-250-5900

Counties: *Bucks, Chester, Delaware, Montgomery and Philadelphia*

Appendix II: Monthly Operational Report Form (MOR)

3900-FM-BSDW0517 Rev. 10/2018

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

LT2 ESWTR TOOLBOX
MONTHLY OPERATIONAL REPORT FORM

I. General Information

Public Water System Name:			**Reporting Month/Year:**		
PWSID #:	**Plant ID #:**		**Plant Name:**		
Contact Name:			**Phone #:**		
DEP Source ID#	**Source Name**	**LT2 Bin Classification**	**DEP Source ID#**	**Source Name**	**LT2 Bin Classification**

Note: Systems with multiple sources or with the potential to switch between multiple sources should report all sources used to supply the treatment plant during this reporting month.

II. LT2 ESWTR Summary

Additional log treatment credits required: logs

Toolbox Options; check all toolbox options successfully operated, maintained and in compliance with all operations permit conditions during the reporting month:

☐ Membrane Filtration* - Minimum Log Removal Value (LRV) credit required by permit: logs (3900-FM-BSDW0158b; 3900-FM-BSDW0162b)

☐ UV* -Minimum LRV credit required y permit: logs (3900-FM-BSDW0483 through 3900-FM-BSDW0489)

☐ IFE – Removal credits claimed: 0.5 logs (Report on SDWA-5 form through DWELR)

☐ CFE – Removal credits claimed: 0.5 logs (Report on SDWA-5 form through DWELR)

☐ 2nd stage GAC filtration- Removal credits claimed: 0.5 logs- Was 100% of flow filtered through both stages with first stage preceded by coagulation step? ☐ Yes ☐ No

☐ DEP approved Watershed Control Plan (WCP) – Removal credits claimed: 0.5 logs (Submit status report to DEP region every 12 months and complete watershed sanitary survey every 3 years)

Did the plant achieve the total log treatment required for the month? ☐ Yes ☐ No

III. Verification

Responsible Official's Name (printed):	
Responsible Official's Signature:	**Date:**

* Complete the applicable form(s). To find the form on eLibrary go to: www.depgreenport.state.pa.us/elibrary/ Enter the document number into the "Search".

3900-FM-BSDW0130 Rev. 2/2019

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

Safe Drinking Water Act SDWA-5
Monthly Filter Plant Performance

I. General Plant Information

PWS Name:

Address:

Phone:

1. PWSID	2. Trans	3. Filter Plant ID#	Filter Plant Name	4. Report Month MM/YY
	09			

II. Combined Filter Effluent (CFE) Turbidity (All filtered systems)

5. Plant Operation Hours	Combined Filter Effluent Turbidity		7. Plant Performance Level (xx.x%)
	6A. Number of Measurements	6B. Number of Results Meeting PLR	6B X 100 / 6A = . %

Turbidity Performance Level Requirements (NTUs)

≤0.3 NTUs for Conventional, Direct, and Other
≤0.15 NTUs for Membrane
≤1.0 NTU for Slow Sand and DE

III. CFE Turbidity Exceedance Reporting (All filtered systems)

8. Did any results exceed the maximum allowable turbidity level? ☐ Yes ☐ No

Maximum Allowable Turbidity (NTUs)
1 NTU for Conventional, Direct, Membrane, or Other
2.0 NTU for Slow Sand or DE

For the month, you must report all **combined filter effluent** (CFE) turbidity measurements that exceeded the **maximum allowable turbidity level** on an SDWA-1 form. (See reporting instructions (383-3301-106) for reporting CFE turbidity measurements.)

IV. CFE Continuous Turbidity Monitoring and Recording (All filtered systems)

9. Was continuous turbidity monitoring and recording conducted at least every 15 minutes on the CFE?
☐ Yes (Go directly to Section V) ☐ No (Proceed to question 10)

10. If there was a failure in the continuous turbidity monitoring or recording equipment on the CFE, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?
☐ Yes ☐ No

V. Individual Filter Turbidity Exceedance Reporting (All filtered systems)

11. Did any individual filter measurements exceed Trigger Level 1 or Trigger Level 2? ☐ Yes ☐ No

Trigger Level 1: Turbidity >1.0 NTU in 2 consecutive measurements taken 15 minutes apart.
Trigger Level 2: Turbidity >0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous operation after the filter is returned to service.

For the month, you must report all **individual** filter turbidity measurements that exceeded either of the **trigger levels** for any of the individual filters regardless of the reason. Record all measurements on an SDWA-1 form.

(See reporting instructions (383-3301-106) for reporting individual filter turbidity measurements.)

Please see the reverse side

VI. Individual Filter Continuous Turbidity Monitoring and Recording (All filtered systems)

12. Was continuous turbidity monitoring and recording conducted on all individual filters in operation at least every 15 minutes? ☐ Yes (Go directly to Section VII) ☐ No (proceed to question 13)

13. If there was a failure in the continuous turbidity monitoring or recording equipment on any individual filter, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?

☐ Yes ☐ No

VII. LT2ESWTR Reporting (All filtered systems)

14. What was the highest Bin source used during the month?

☐ Bin 1 ☐ Bin 2 ☐ Bin 3 ☐ Bin 4

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

- If Bin 1 using only **Conventional, Direct, Slow Sand, DE** or **Other** filtration, go to Section XI.
- If Bin 2 or higher using **Conventional** or **Direct** filtration, go to section VIII.
- If Bin 2 or higher and using **Slow Sand, DE,** or **Other** filtration, go to Section X.
- If using **Membrane** filtration, (all Bin #s), go to Section IX.

VIII. CFE & IFE Performance Option – Conventional or Direct filtration using Bin 2 or higher

15. Was the CFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

☐ Yes ☐ No

16. Was the IFE turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?

☐ Yes ☐ No

17. Was the IFE turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?

☐ Yes ☐ No

Systems with Conventional filtration using Bin 2 source only: If the answer is "Yes" to Q15 & 16 and "No" to Q17 go to Section XI. All others, go to Section X.

IX. Membrane Filtration Integrity Testing

18. Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?

☐ Yes ☐ No

19. Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?

☐ Yes ☐ No

X. Microbial Toolbox Monthly Operational Report, Form #3900-FM-BSDW0517

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were

- PWS with Conventional filtration not meeting CFE and/or IFE Performance criteria in Section VIII,
- PWS with Membrane filtration using any Bin source,
- PWS with Direct, Slow Sand, DE, or Other filtration using a Bin 2, Bin 3 or Bin 4 source,
- PWS with Conventional filtration using a Bin 3 or Bin 4 source.

XI. Verification

By signing this form, you are certifying that the information contained herein is true and correct to the best of your knowledge, information and belief. The information given is subject to the penalty provisions of the Crimes Code regarding unsworn falsification to authorities (18 P.S.C.S.A §4904.)

Approved by: _____ Date: _____

3900-FM-BSDW0145 Rev. 2/2019

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

MONTHLY FILTER PLANT PERFORMANCE

SDWA-5 CORRECTION

Reason for Correction:	
White Areas: Enter the complete information with the correct information.	Shaded Areas: Enter the information which was reported incorrectly. Enter only the data which needs to be changed.

I. General Plant Information

PWS Name: **Address:** **Phone:**	**Reported PWS Name:** **Address:** **Phone:**

	PWSID	Filter Plant: ID#	Name	Report Month (MMDDYY)
correct				
submitted				

II. Combined Effluent (CFE) Turbidity (All filtered systems)

	Plant Operation Hours	Combined Effluent Turbidity		Plant Performance Level (xx.x%)
		Number of Measurements	Number of Results Meeting PLR	
correct				6B X 100 / 6A = . %
submitted				6B X 100 / 6A = . %

III. CFE Turbidity Exceedance Reporting

	correct	submitted
Did any results exceed the maximum allowable turbidity level?	☐ Yes ☐ No	☐ Yes ☐ No

IV. CFE Continuous Turbidity Monitoring and Recording (All filtered systems)

Was continuous turbidity monitoring and recording conducted at least every 15 minutes on the CFE? (If Yes then go directly to Section V. If No, then proceed to next question.)	☐ Yes ☐ No	☐ Yes ☐ No
If there was a failure in the continuous turbidity monitoring or recording equipment, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?	☐ Yes ☐ No	☐ Yes ☐ No

V. Individual Filter Turbidity Exceedance Reporting (All filtered systems)

Did any individual filter measurements exceed trigger level 1 or trigger level 2?	☐ Yes ☐ No	☐ Yes ☐ No

VI. Individual Filter Continuous Turbidity Monitoring and Recording (All filtered Systems)

Was continuous turbidity monitoring and recorded conducted on all individual filters in operation at least every 15 minutes?	☐ Yes ☐ No	☐ Yes ☐ No
If there was a failure in the continuous turbidity monitoring or recording equipment on any individual filter, did you conduct grab sampling and/or manual recording every 4 hours, for a period not exceeding 5 working days?	☐ Yes ☐ No	☐ Yes ☐ No

Please see the reverse side

VII. LT2ESWTR Reporting (All filtered systems)				
What was the highest Bin source used during the month?				
Correct	☐ **Bin 1**	☐ **Bin 2**	☐ **Bin 3**	☐ **Bin 4**
Submitted	☐ **Bin 1**	☐ **Bin 2**	☐ **Bin 3**	☐ **Bin 4**

*(Bin 4 includes any unclassified SW or GUDI source used during the month)

- If Bin 1 using only **Conventional, Direct, Slow Sand, DE** or **Other** filtration, go to Section XI.
- If Bin 2 or higher using **Conventional** or **Direct** filtration, go to section VIII.
- If Bin 2 or higher and using **Slow Sand**, **DE**, or **Other** filtration, go to Section X.
- If using **Membrane** filtration, (all Bin #s), go to Section IX.

VIII. CFE & IFE Performance Option-- Conventional or Direct filtration using Bin 2 or higher		
	correct	submitted
Was the **CFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?	☐ Yes ☐ No	☐ Yes ☐ No
Was the **IFE** turbidity ≤ 0.15 NTU in at least 95% of the measurements for the month?	☐ Yes ☐ No	☐ Yes ☐ No
Was the **IFE** turbidity > 0.3 NTU in two consecutive measurements taken 15 minutes apart during the month?	☐ Yes ☐ No	☐ Yes ☐ No
Systems with Conventional filtration using Bin 2 source only: If the answer is “Yes” to Q15 & 16 and “No” to Q 17 go to section XI. All others go to Section X.		

IX. Membrane Filtration Integrity Testing		
	correct	submitted
Did a Membrane Filtration Indirect Integrity Test Exceedance occur during the month?	☐ Yes ☐ No	☐ Yes ☐ No
Did a Membrane Filtration Direct Integrity Test Exceedance occur during the month?	☐ Yes ☐ No	☐ Yes ☐ No

X. Microbial Toolbox Monthly Operational Report, Form #3900-FM-BSDW0517

Complete the LT2ESWTR Monthly Operational Report (MOR) and submit it to the appropriate DEP Regional Office if any of the following conditions were met for the month:

- PWS with Conventional filtration not meeting CFE & IFE Performance criteria in section VIII,
- PWS with Membrane filtration using any Bin source,
- PWS with Direct, Slow Sand, DE, or Other filtration using a Bin 2, Bin 3 or Bin 4 source,
- PWS with Conventional filtration using a Bin 3 or Bin 4 source.

XI. Verification

By signing this form, you are certifying that the information contained herein is true and correct to the best of your knowledge, information and belief. The information given is subject to the penalty provisions of the Crimes Code regarding unsworn falsification to authorities (18 P.S.C.S.A. §4904.)

Approved by: _____ Date: _____

3900-FM-BSDW0143 3/2013

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

BACTERIOLOGICAL / RESIDUAL DISINFECTANT / TURBIDITY / DBP ANALYSIS

SDWA-1 CORRECTION

Reason for Correction: _____

_____

_____

White Areas: Enter the complete information with the correct information.

Shaded Areas: Enter the information which was reported incorrectly. Enter only the data which needs to be changed.

PWS Name:	Reported PWS Name:	**CONTAMINANT NAME**	
Address: _____	Address: _____		
Phone:	Phone:		
PWS ID:	**PWS ID:**	**CONTAM ID:**	**CONTAM ID:**

	ANALYSIS			**LOCATION ID 1**	**LOCATION ID 2**	**SAMPLE**			
	METHOD	**RESULT (Incl. Decimal)**	**MMDDYY**	**(Loc, EP or Plant)**	**(Individual Filter)**	**MMDDYY**	**TYPE**	**TIME**	**SAMPLE ID**
CORRECT DATA									
SUBMITTED DATA									
CORRECT DATA									
SUBMITTED DATA									
CORRECT DATA									
SUBMITTED DATA									
CORRECT DATA									
SUBMITTED DATA									

LAB. NAME: _____ PHONE: _____

APPROVED BY: _____ DATE: _____

LAB ID	