2. Customizing an SWMOR Workbook

The first time you use an SWMOR form, you will customize it by entering the data and information specific to your plant. In this chapter, we explain how to customize an SWMOR form to create your own workbook to use as a master file for reporting month after month. You only customize an SWMOR workbook once unless there is a change in plant operation or design.

You will need the following records to customize an SWMOR workbook:

- Plant design information, or letters approving your plant design.
- CT Study approval letter. (See Appendix A.)
- Exception approval letters, if applicable.

This chapter explains how to customize an SWMOR form using the example CT Study approval letter in Appendix A. Customizing the SWMOR-Alt form and the SWMOR2 form involves additional steps. The differences are noted in this chapter and explained in Chapters 5 and 6, respectively.

2.1 Opening Screen Security Warning

To begin customizing an SWMOR form, locate and open a blank form from our website. When you open an SWMOR form the first time, and any time thereafter, a security warning may appear to enable the macros that run the programs. If prompted, select [Enable Content] and the **Plant Parameters** dialog box will appear.

Note: Before beginning this step, review the Chapter 1 information about accessing a blank form on our website and using the various workbook features. Do not try to use the workbook while a macro is running. Be patient because macros take time to run.

2.2 Plant Parameters Dialog Box

The **Plant Parameters** dialog box shown in Figure 2.1 will prompt you to enter the information needed to begin customizing a workbook. This dialog box is divided into a **Plant** section and a **Monitoring** section. For the workbook to run properly, you must complete all sections of this dialog box.

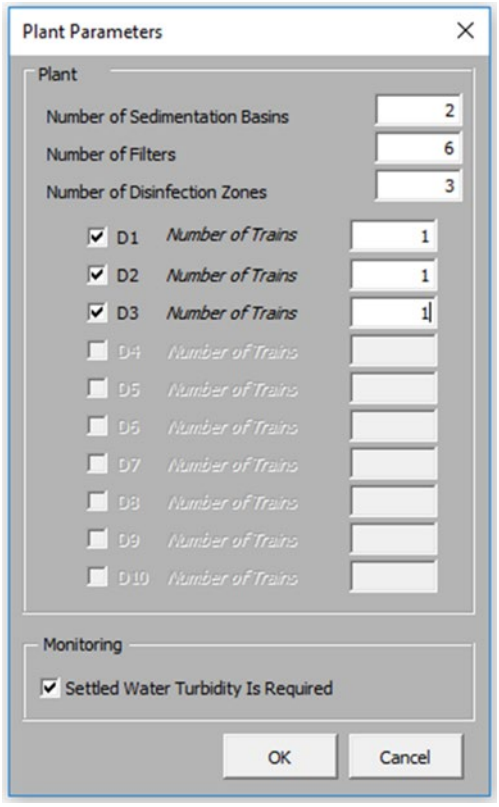

Figure 2.1. Plant Parameters dialog box

Plant

Number of Sedimentation Basins

Enter the {number of sedimentation basins} at your plant.

Number of Filters

Enter the {number of filters} at your plant. If you enter two filters in the **Number of Filters** cell, the workbook asks for confirmation, and the **Confirm 2 Filters with IFE Monitors** dialog box shown in Figure 2.2 appears.

If you have IFE turbidimeters on both filters, select [Yes] and continue customizing your workbook. If you do not have IFE turbidimeters on both filters, select [No].

> If you select No to this question, you must use an SWMOR2 workbook instead of an SWMOR workbook. (See Chapter 6.)

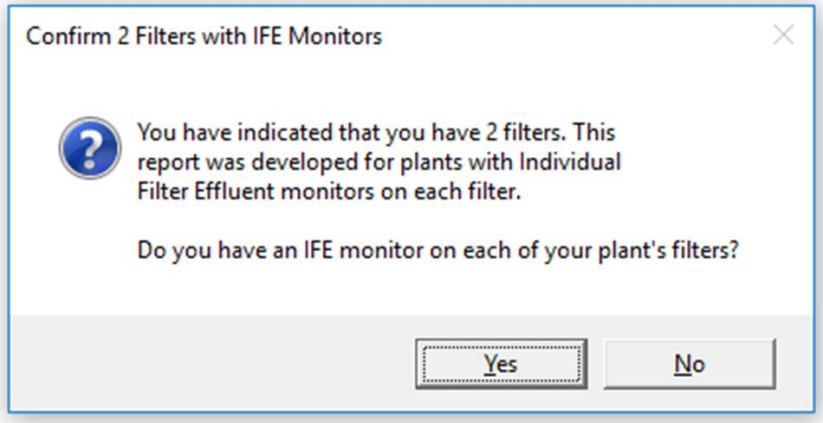

Figure 2.2. Confirm 2 Filters dialog box

Number of Disinfection Zones

Your CT Study approval letter describes the disinfection zones and treatment trains at your plant. The disinfection zones are numbered; for example, D1, D2, and so on. Enter the {total number of disinfection zones} specified in your letter.

Note: If your CT Study approval letter does not accurately describe your disinfection zones or if you want to change disinfection zones, you will need to submit a new CT Study for our review.

Number of Trains

After entering the number of disinfection zones, hit enter on your keyboard. The **Number of Trains** cell will appear beside each of the zones identified.

For each disinfection zone, enter the {number of treatment trains} defined in your CT Study approval letter.

If there is more than one train in a zone, your CT Study approval letter identifies each train with an alphabetical letter. For example, if disinfection zone D1 contains three trains, the trains will be identified as D1A, D1B, and D1C in the **Disinfection Process Parameters** dialog box.

Monitoring

Settled Water Turbidity Is Required

We typically require plants to periodically monitor levels of settled water turbidity if we have approved an exception to our requirements for detention time design and surface overflow rate. We occasionally enforce this requirement for other reasons. For example, we may require that plants monitor settled water turbidity as part of a mandatory CAP. If your plant does not have an exception or a mandatory CAP, we still recommend, but seldom require that you monitor settled water turbidity levels.

If you are required to monitor settled-water turbidity, select [Settled Water Turbidity Is Required]. Do not select this option if you are not required to monitor settled water turbidity, even if you routinely do so.

Once you have entered all data in the **Plant Parameters** dialog box, select [OK]. The workbook macro updates the appropriate cells on the **P.2 Turbidity Data**, **P.3 Filter Data**, and **P.4&5 Disinfection Data** worksheets. If the **Plant Parameters** dialog box already properly describes your plant, select [CANCEL] because the update can take some time.

Once the macro finishes updating worksheets, the **Disinfection Process Parameters** dialog box appears.

2.3 Disinfection Process Parameters Dialog Box

The **Disinfection Process Parameters** dialog box shown in Figure 2.3 prompts you to enter additional information needed to customize your workbook. This dialog box is divided into a **Residual Disinfectant** section and an **Approved CT Study Parameters** section. You must complete both sections or the workbook will not work properly. Most of the information for this dialog box can also be found in the CT Study approval letter.

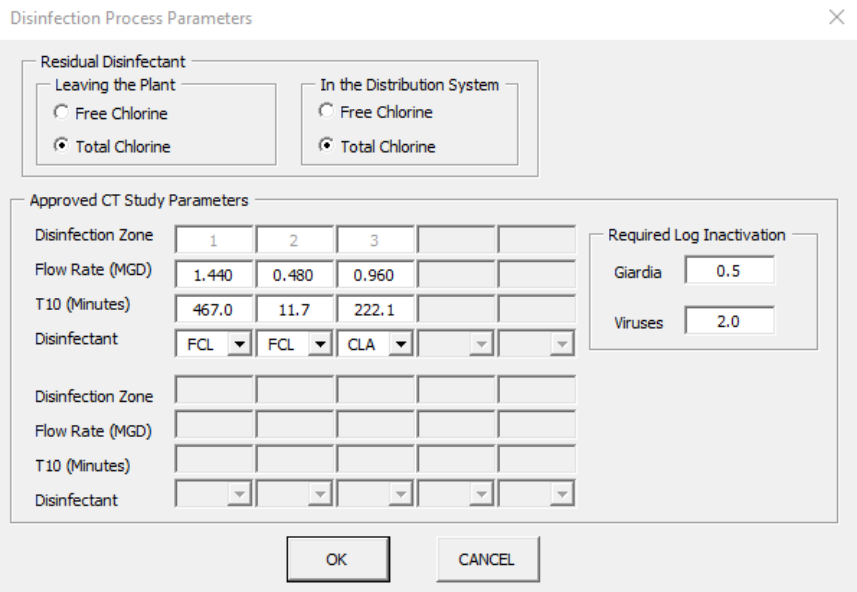

Figure 2.3. Disinfection Process Parameters dialog box

Residual Disinfectant

This section of the **Disinfection Process Parameters** dialog box is based on your plant's normal operating practices. This section requires information on the disinfectant residual in the water leaving the plant and in the distribution system.

Leaving the Plant

Select [Total Chlorine] if your plant normally adds ammonia at some point in the treatment process, or you purchase and redistribute chloraminated water. Select [Free Chlorine] as your default disinfectant if your plant does not add ammonia to the water before it leaves the plant.

The SWMOR workbook uses the disinfectant you select to set the default residual level you must maintain in the water leaving the plant.

In the Distribution System

Select [Total Chlorine] if your distribution system contains chloraminated water. Select [Free Chlorine] if your distribution system contains free chlorine in the water.

The SWMOR workbook uses the information you select to set the default residual level you must maintain in the distribution system. Typically, the type of disinfectant residual leaving the plant is the same type within the distribution system. However, the workbook does not prevent you from selecting a different type for each. This treatment approach is highly unusual though and the dialog box shown in Figure 2.4 appears if the two disinfectant types do not match.

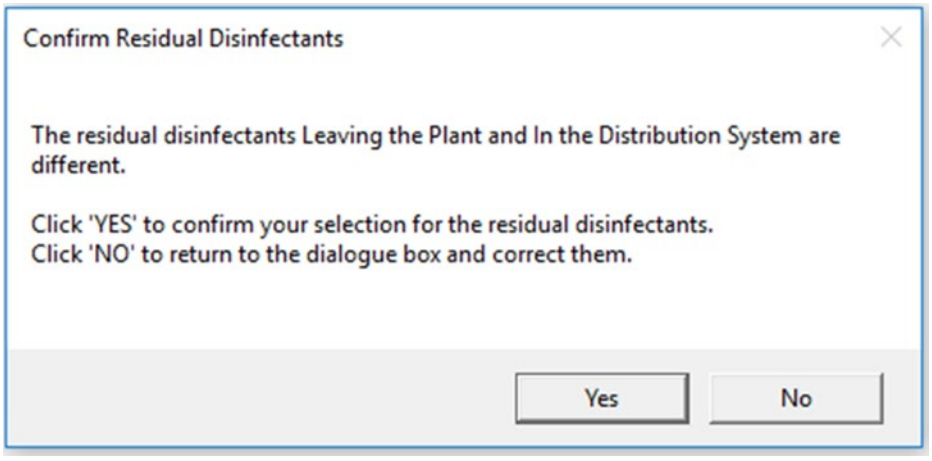

Figure 2.4. Confirm Residual Disinfectants dialog box

Approved CT Study Parameters

The CT Study approval letter describes the following three approved parameters for each disinfection zone and treatment train:

- flow rate
- T_{10}
- disinfectant type

The flow rate and T_{10} information is usually in a table near the end of the CT Study approval letter. Information about the disinfectant used in each zone is found near the beginning of the letter where we describe the plant's general treatment and disinfection processes.

Flow Rate (MGD)

Enter the {flow rate (in MGD)} for each disinfection zone and train in your CT Study approval letter.

T_{10} (Minutes)

Enter the {approved T_{10} (in minutes)} for each disinfection zone and train in your CT Study-approval letter.

Disinfectant

Using the drop-down list, select the type of [disinfectant] maintained in each disinfection zone and treatment train identified in your CT Study approval letter. The abbreviations for the types of disinfectants are shown in Table 2.1.

Table 2.1. Abbreviations for disinfectants

Abbreviation	Disinfectant
FCL	free chlorine
CLO_2	chlorine dioxide
O3	ozone
CLA	chloramines
NA	disinfection zone not used

Required Log Inactivation

Your CT Study approval letter also establishes the performance requirements for your plant's disinfection process. Based on the treatment processes at your plant, the required log inactivation designated in the letter must be achieved by disinfection.

Giardia

Enter the {required log inactivation for *Giardia*} that your disinfection process is required to achieve. The minimum inactivation requirement for *Giardia* is 3.0 log. Your CT Study approval letter may allow some of this inactivation credit to come from your filtration technology. If so, then the rest must come through disinfection and will be shown in the CT Study table that contains the disinfection zone parameters.

Viruses

Enter the {required log inactivation for viruses} your disinfection process is required to achieve. The minimum inactivation requirement for viruses is 4.0 log. As with *Giardia*, some of the inactivation credit may come from your filtration technology. The rest must come through disinfection. See your CT Study table for those virus disinfection inactivation goals.

Once you have finished entering data in the **Disinfection Process Parameters** dialog box, select [OK]. When you click OK, the macro updates the appropriate cells on the **P.1 Summary** and **P.4&5 Disinfection Data** worksheets. After the macro finishes, the final step in creating a customized workbook is entering your plant information.

2.4 Entering Your Plant Information (P.2)

After the **Disinfection Process Parameters** dialog box macro finishes running, you will enter your unique plant information plant at the top of **P.2 Turbidity Data** worksheet shown in Figure 2.5.

The plant information cells are locked on all other worksheets except for this page. The **P.2 Turbidity Data** worksheet is programmed so that the information entered on this page is automatically copied to the other worksheets.

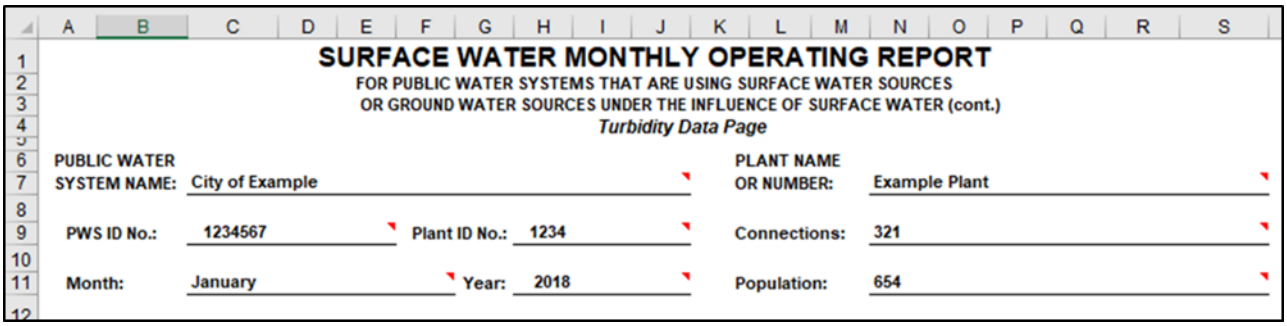

Figure 2.5. SWTP information section of the SWMOR workbook

Public Water System and Plant Names and ID Numbers

Enter the following information:

- {PWS Name}
- {Seven-digit PWS ID Number}
- {Plant name}
- {Plant Number} unique to the plant.

The information related to the month, year, connections, and population is not entered at this point. You will update these cells with current plant information when you save a new workbook at the beginning of each month. (See Chapter 3.)

2.5 Saving Your Customized Workbook

After completing all data entry, save the customized workbook as a master file. Using the custom tool bar, select [Save as Excel 2010]. A warning will appear prompting you to ensure that the plant information is correct. Confirm the plant information (except for year and month) is correct and select [OK].

We recommend saving your customized workbook master file using the following filenames:

- SWMOR workbook: SWMOR_master_PWSIDNumber_PlantName
- SWMOR2 workbook: SWMOR2_master_PWSIDNumber_PlantName
- SWMOR-Alt workbook: SWMOR-Alt_master_PWSIDNumber_PlantName

We also recommend creating a series of special folders (or subdirectories) so all your MOR records are stored in the same place. Several plants have found the file structure shown in Figure 2.6 to be very useful.

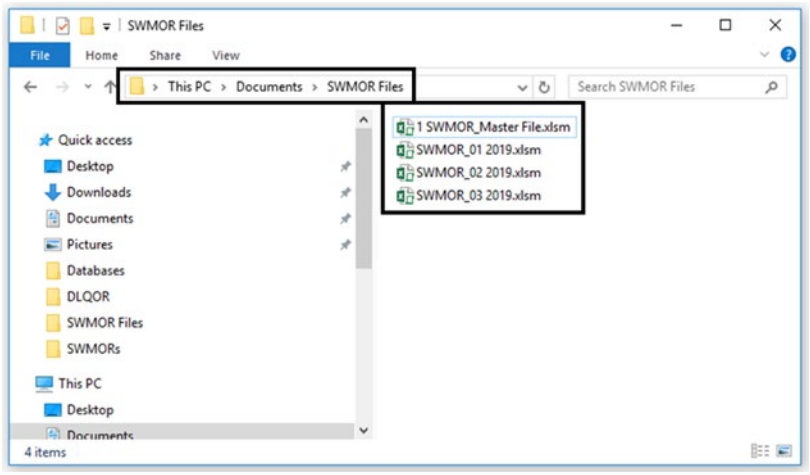

Figure 2.6. Sample file structure