How to Complete the Enhanced IFE Worksheet of the SWMOR-Alt

General Information about the Spreadsheets

The Surface Water Monthly Operating Report for Alternative Technologies (SWMOR-Alt) is for public water systems that produce drinking water from surface water or groundwater under the direct influence of surface water using alternate technologies. The EPA's Long Term 2 Enhanced Surface Water Treatment Rule (LT2) defines the alternate technologies that can receive credit for removal or inactivation of pathogens.

As you work with the SWMOR-Alt spreadsheets, you will find many features that make it easier for you to use. The following general information will help you use the spreadsheets.

An Excel spreadsheet is also called a workbook which is made up of separate worksheets. After you open the workbook, you will find a series of tabs at the bottom of the screen. Each of these tabs identifies one of the worksheets in the workbook. When you click on one of these tabs, the tab will change from gray to white and the program will take you to the worksheet for the pages shown on the tab.

Because the SWMOR-Alt is an electronic file, we have been able to place many instructions and comments directly in the two spreadsheets. Those electronic comments will help you immediately while you are completing the form.

"We" and "You" in This Guide

"We" as used in this guide refers to the Texas Commission on Environmental Quality—specifically, the TCEQ's Water Supply Division.

In this guide, "you" means the person who must sign the SWMOR or SWMOR2 each month. Under the rules, this person must be the certified surface water treatment plant operator who is responsible for the daily supervision of the plant.

1. Enhanced IFE Monthly Operating Report Worksheets

The SWMOR-Alt spreadsheet contains one sheet for obtaining log removal credit for *Giardia* and *Cryptosporidium* based on enhanced removal of turbidity in granular media filters. You will receive credit for operating with enhanced IFE if no readings are over 0.3 NTU in any two consecutive measurements, and 95% of the IFE readings are less than 0.15 NTU.

The **Enhanced IFE** spreadsheet calculates log removal credit based on individual filter effluent (IFE) quality. The **Enhanced IFE** spreadsheet automatically displays in the SWMOR-Alt if you selected enhanced filtration as a treatment technology when you customized the SWMOR-Alt for your plant. If your SWMOR-Alt requires this sheet, it appears as a tab at the bottom of the SWMOR-Alt spreadsheet, as shown in Figure 1.1.

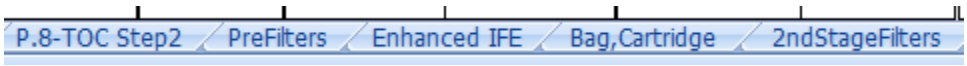

Figure 1.1.Tabs at Bottom of the SWMOR-Alt Indicating the Enhanced IFE Sheet

The **Enhanced IFE** worksheet will not be visible if you indicated in the customizing step that your plant does not achieve enhanced filtration.

If your plant does have an enhanced filter process and the appropriate **Enhanced IFE** worksheet tab is not visible, you will need to close the file, reopen it, and re-customize your spreadsheet. See Chapter 2 for more information about customizing the SWMOR-Alt for your particular plant.

At the top of the **Enhanced IFE** worksheet, there is a block of information that describes your system, plant, and reporting period as shown in Figure 1.2. The spreadsheet copies this information from the data you entered on the **P.2-Turbidity Data** worksheet, and the data cannot be re-entered or edited on the **Enhanced IFE** worksheet.

SURFACE WATER MONTHLY OPERATING REPORT

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

Enhanced Individual Filter Performance Data Page

PUBLIC WATER SYSTEM NAME: _____ PLANT NAME OR NUMBER: _____

PWS ID No.: _____ Plant ID No.: _____ Month: _____ Year: _____

Figure 1.2. General Plant Information at the Top of the Enhanced IFE Worksheet

The **Enhanced IFE** worksheet contains two sections, the **PERFORMANCE DATA** table shown in Figure 1.3 and the **SUMMARY** table shown in Figure 1.4.

> **Note**
>
> You cannot claim credit for enhanced IFE performance unless each filter is equipped with an IFE turbidimeter and data is recorded at least once every 15 minutes that the filter is sending water to the clearwell.

1.1 Performance Data Table

Figure 1.3 shows the **PERFORMANCE DATA** section of the Enhanced IFE worksheet. There is one line for each filter for each month. You must enter four parameters for each filter in the worksheet.

Optimized Individual Filter Effluent (IFE) Performance										
PERFORMANCE DATA										
Filter No.	Total No. of Readings	No. of Readings > or = 0.15 NTU	Percent of Readings > or = 0.15 NTU	No. of Confirmed Readings > 0.3 NTU		Filter No.	Total No. of Readings	No. of Readings > or = 0.15 NTU	Percent of Readings > or = 0.15 NTU	No. of Confirmed Readings > 0.3 NTU
1						26				
2						27				
3						28				
4						29				
5						30				

Figure 1.3. Performance Data Section Heading in the Enhanced IFE Worksheet

Total number of readings

For each filter, enter the total number of 15-minute IFE readings (for the whole month) that were recorded during periods when the filter was sending water to the clearwell in the cell headed **Total No. of Readings**. If there were days when some, but not all, of the IFE data were recorded, include the number of readings that you did record.

If the filter was off-line the whole month, so the number of readings was zero, enter <X> in this cell. If the filter was used but you have no IFE turbidimeter installed on it, or you did not record data from your IFE turbidimeter, enter <ND> in this cell.

Number of readings greater than or equal to 0.15 NTU

For each filter, enter the number of IFE readings that were 0.15 NTU or higher in the column headed **No. of Readings > or = 0.15 NTU**. This value must be less than or equal to the total number of IFE readings you entered for that filter. Also, the reading cannot be greater than zero unless the **P.3-Filter Data** worksheet has at least one day with a maximum reading of 0.15 NTU or higher or shows you have a day with missing data.

If the filter was off-line the whole month, enter <X> in this cell. If the filter was used, but you have no IFE turbidimeter installed on it, or if you failed to record the IFE data, enter <ND> in this cell.

Percent of readings greater than or equal to 0.15 NTU *CALC*

The SWMOR-Alt worksheet automatically calculates the percent of readings equal to or greater than 0.15 NTU based on the values from **Total No. of Readings** and **No. of Readings > or = 0.15 NTU** and enters the percent in the cell headed **Percent of Readings > or = 0.15 NTU**.

If you enter <X> in the previous cells to indicate that the filter was offline, the worksheet automatically enters *X* in this cell. If either of the two previous cells contains the entry <ND>, the worksheet enters *ND* in this cell, because you have no data.

Number of confirmed readings over 0.3 NTU

For each filter, enter the number of IFE readings that were 0.35 or higher in the cell headed **No. of Confirmed Readings > 0.3 NTU**. This value can be no higher than the number of IFE readings greater than or equal to 0.15 NTU. Also, the reading cannot be greater than zero unless the **P.3-Filter Data** worksheet has at least one day with a maximum reading of 0.35 NTU or higher or shows you have a day with missing data.

If the filter was off-line the whole month, enter <X> in this cell. If the filter was used but you have no IFE turbidimeter installed on it, enter <ND> in this cell.

1.2 SUMMARY TABLE

Figure 1.4 shows the **Summary** section of the **Enhanced IFE** worksheet.

Summary	Were more than 5% of the IFE readings from any of the filters above the 0.15 NTU performance criteria?		*Giardia and Cryptosporidium Log Removal Credit Allowed this Month For Enhanced IFE Performance*	
	Did any of the filters have confirmed IFE readings above 0.3 NTU?			

Figure 1.4. Summary Table in the Enhanced IFE Worksheet

Readings above 0.15 NTU CALC

In order to receive credit, your plant can not have more than 5% of the IFE readings greater than or equal to 0.15 NTU. The SWMOR-Alt worksheet automatically calculates the percent of readings that met this performance criteria and enters a value into the cell next to the question: **Were more than 5% of the IFE reading from any of the filters above the 0.15 NTU performance criteria?**

If any filter had 5% or more readings over 0.15, the worksheet enters ***Yes***. If data was missing, so that you entered <ND> in any of the cells above, the worksheet enters ***Unknown***, If all of the filters produced water with at least 5% of the readings less than 0.15 NTU, the worksheet enters ***No***. If the cell is blank, it may be that an error was made in filling out the **P.3-Filter Data** sheet.

Confirmed IFE events above 0.3 NTU CALC

In order to receive credit, your plant cannot have any confirmed IFE readings greater than 0.3 NTU. A 'confirmed' IFE reading over 0.3 NTU means that two consecutive 15-minute readings had levels over 0.3 NTU. The SWMOR-Alt worksheet automatically determines whether any readings were over 0.3 NTU and enters the answer in the cell next to the question: **Did any of the filters have confirmed readings > 0.3 NTU?**

If you reported that any of the filters had confirmed readings over 0.3 NTU , the worksheet enters ***Yes***. If there is any missing data, the worksheet enters ***Unknown***. If your filters never exceeded 0.3 NTU in two consecutive readings during the month, the worksheet enters ***No***. If the cell is blank, we recommend that you check whether you made an error in filling out the **P.3-Filter Data**.

Giardia and *Cryptosporidium* log removal credit CALC

In order to receive additional credit for pathogen removal, your plant cannot have any confirmed readings over 0.3 NTU, and must have at least 95% of the readings less than 0.15 NTU. The SWMOR-Alt worksheet automatically enters the log removal credit allowed this month for *Giardia* and *Cryptosporidium* based on enhanced IFE

performance next to the statement: **Giardia and Cryptosporidium Log Removal Credit Allowed this Month For Enhanced IFE Performance**.

If both of the cells for the above two questions are <No>, the worksheet enters *1*. Otherwise, it enters *0*. If the cells for either of the answers to the above two questions are empty, the worksheet leaves this cell empty.