TSI Link™ Report Creator Inhalation Exposure Baseline Reports

Worksheet Guide (US)

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Overview

Inhalation Exposure Workbooks

Helps health and safety professionals assessing inhalation hazards. The worksheet templates in this workbook are designed to make your exposure analysis efficient, accurate and easy to understand and include the assessment of Ceiling, STEL, and TWA exposure limits. Moreover, they provide rich data visualizations that help you explain your findings and recommendations to clients, workers and managers.

Baseline Reports

Industrial hygienists often need to understand the level of contamination caused by a certain work process. To do this, they subtract out some baseline contaminant level to determine the process contribution.

This process is known as Baseline Screening and Trending. It is conducted prior to starting a process or piece of equipment, thereby establishing a baseline concentration for whatever metric is being measured. This baseline can be done from a clean area, such as outside air or another indoor area. Ideally, the baseline screening is done before, during and after a process or piece of equipment has been running to accurately understand the actual process contribution.

There are three baseline report template worksheets in this workbook, supporting different ways to measure the baseline value. You should select the worksheet that corresponds to how you have measured the baseline.

Baseline PM – Sequential

Imports two separate studies – one being the baseline and the other being the process sample. This can be performed with a single instrument, measuring two different locations sequentially.

IH Baseline Trending and Screening – where you sequentially monitor in the same location with the same monitoring instruments for a 24-hour period. You have baseline data when no work activity is taking place (i.e., after hours and overnight) and work activity data during the day when work is taking place and equipment is running. You compare by subtracting the baseline data average concentration from the work activity average concentration during the day. You can then see the process contribution by using this comparison assessment report/workbook template.

Baseline PM – Simultaneous

Imports two separate studies from two instruments that are simultaneously measuring different points. The baseline measurement should be at a location that reflects ambient PM levels, but immune to the industrial process being examined. Simultaneous measurements can be more accurate than sequential studies if baseline and/or process levels fluctuate. However, this method requires two instruments.

IH Baseline Trending and Screening – where you simultaneously monitor in different locations with two different sets of the same monitoring instruments for a work shift or for task-based work. You select a clean area in the facility to serve as the baseline data. You simultaneously measure the work area of concern for the dirty area. You should start and stop sampling from both instruments at the same time to accurately compare the data.

Baseline PM – Single File

Imports only one study. The worksheet allows you to define when the baseline measurement period ends. Typically, the industrial hygienist will begin the study prior to the industrial process starting.

If you are new to Report Creator, check out the Report Creator Product Page for guides and videos including: setting up an account, installing the application, using the study manager, using the layout view, customizing report creator templates, etc. This application guide builds upon and supplements those guides. This guide does not duplicate all of the content on those guides.

Inhalation Exposure Worksheets

The table below lists the worksheets available in the Inhalation Exposure workbook.

Worksheet Template	Supported Measurements*	Supported Instruments	Examples of Applications
Baseline PM – Sequential	Particulate Mass (PMx) Particle Number Concentration (NC)	OmniTrak™ Solution Q-Trak™ XP Monitor DustTrak™ II Monitor DustTrak™ DRX Monitor	Understanding the level of contamination caused by a certain work process, comparing the process vs. a baseline
Baseline PM – Simultaneous			
Baseline PM – Single File			

Worksheet Steps

Step 1 Select a Worksheet

The Inhalation Exposure workbook is one of many that are available. An overview of the workbooks available is on the Report Creator product page.

There many different worksheets within this Inhalation Exposure workbook. This guide covers the Baseline PM – Sequential, Baseline PM – Simultaneous, and Baseline PM – Single File worksheets. Guide for the other Inhalation Exposure worksheets can be found in the RESOURCES section of the Report Creator Product page.

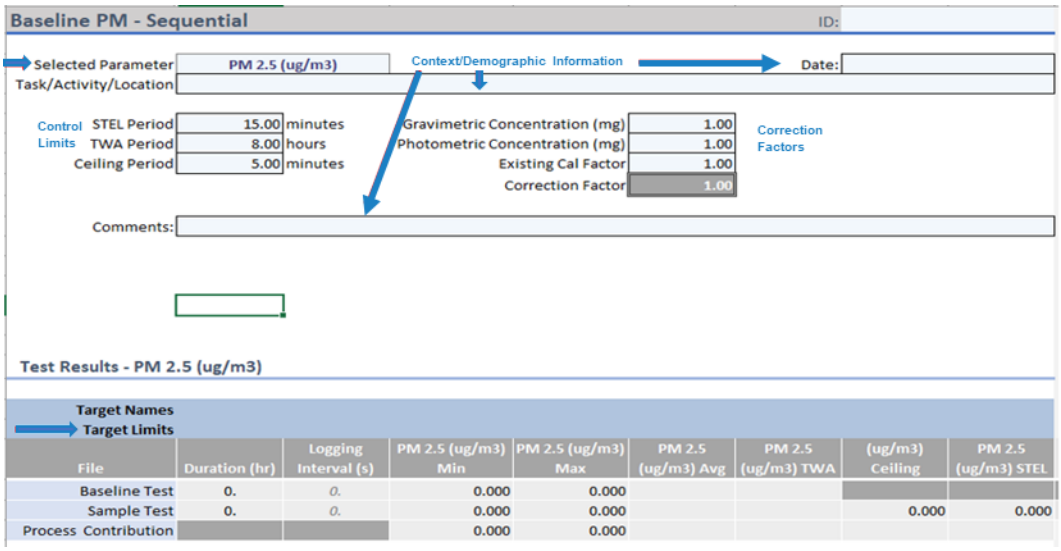
Step 2 Cover Sheet

This workbook contains a very simple Cover sheet that can be customized to suit your needs. For example, by adding your logo, customizing the font, or adding other information. See the *Customizing Report Creator Templates* to learn how. Other sheets can be added to your workbook, if desired.

Step 3 Study Context: Demographic Information and Parameters

After you have created a blank worksheet:

- Select the Parameter you want to study.
- Enter the Context / Demographic information to provide context for your report.
- Adjust the Control Limits as desired.
- Adjust the Correction Factors for your situation.
- Enter the target limits into the worksheet templates as desired.



Step 4 Load Study Data

Load up to two studies using STUDY MANAGER or File Import. *For background see the* Study Manager Guide.

Import the tests using *STUDY MANAGER* or *File Import.* Make sure the test names match the baseline and sample labels. Swap them if necessary. When ready, click **Add Data** to import data into the worksheet.

- **Baseline PM – Sequential:** Two tests
- **Baseline PM – Simultaneous:** Two tests
- **Baseline PM – Single File:** One test

Step 5 Analyze Data

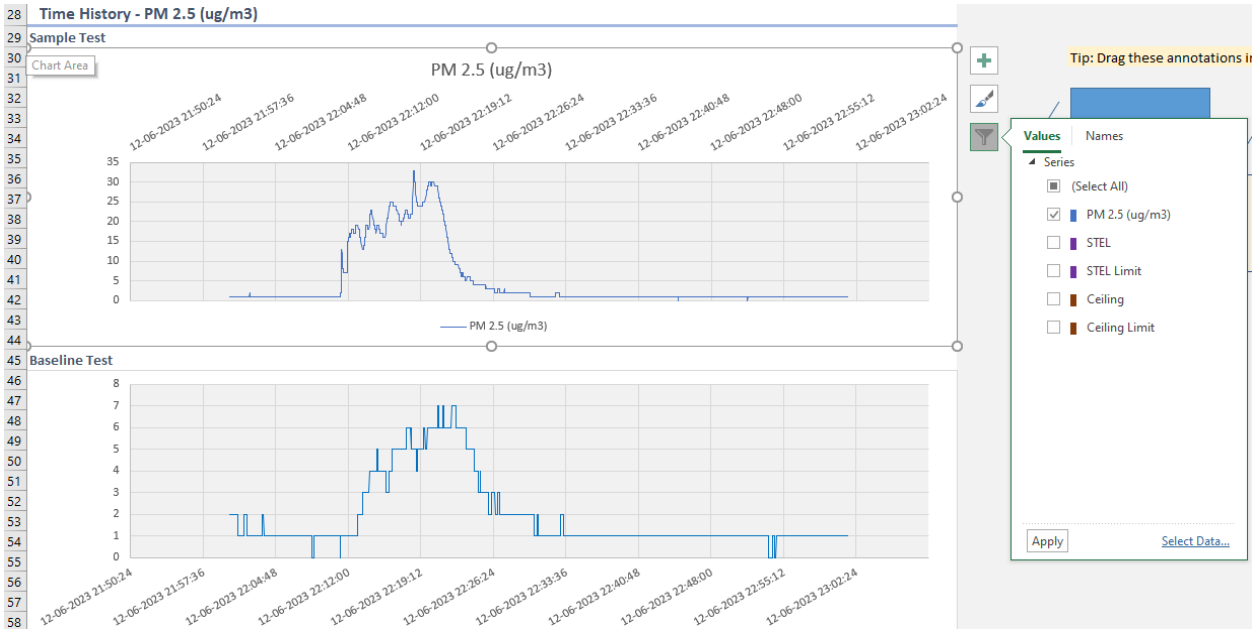
Once the data files are loaded, the statistical data summary is automatically created as shown in the examples below. All data reflects the correction factor applied in the header.

Any values that exceed the target limits are displayed in red. Column charts for each statistic are also displayed to help with comparitive analysis.

Baseline PM – Sequential

The lower time history chart displays the baseline study by itself. The top chart shows the sample study. If desired, to also display the STEL, Ceiling, and their associated limits:

1. Click on the top chart.
2. Click the **Filter** icon in the upper-right corner of the chart.
3. Check the calculations and limits you want to display.
4. Click **Apply**.



In the summary table, the baseline minimum, maximum, average, and TWA are subtracted from the sample to calculate the process contribution. For the Ceiling and STEL values, the baseline average is subtracted from the highest sample values to calculate process contribution.

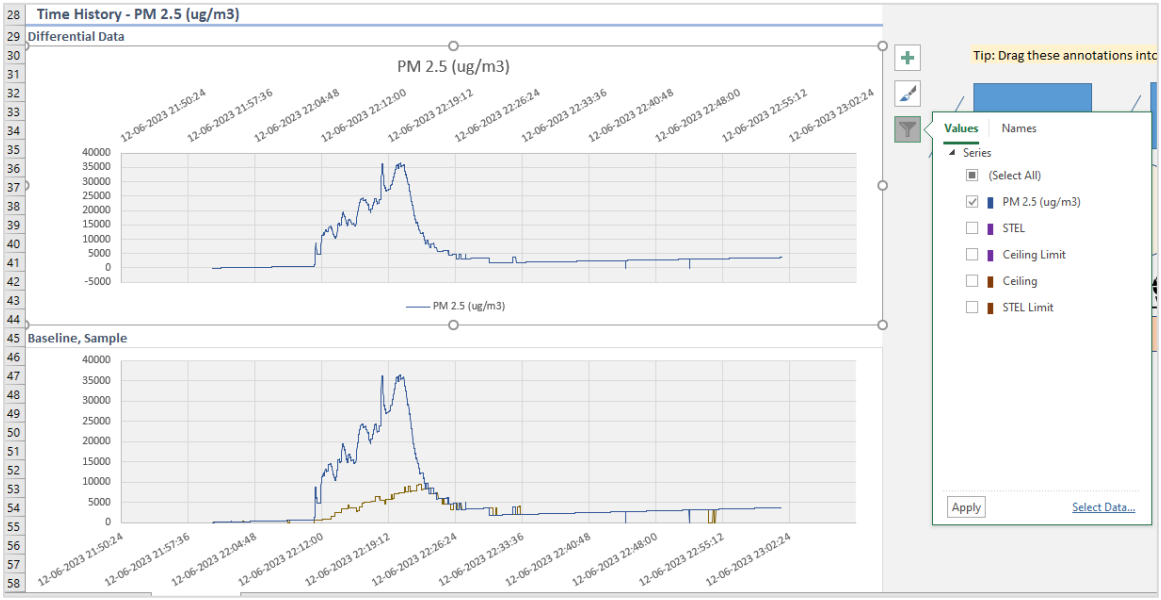
Test Results - PM 2.5 (ug/m3)

Target Names								
Target Limits								12
File	Duration (hr)	Logging Interval (s)	Min	Max	Avg	TWA	Ceiling	STEL
Baseline Test	1.02	1.	0.000	7.000	1.906	0.244		
Sample Test	1.02	1.	0.000	33.000	4.888	0.625	25.113	16.590
Process Contribution			0.000	26.000	2.982	0.381	23.207	14.684

Baseline PM – Simultaneous

The lower time history chart displays the baseline and sample studies. The top chart shows the computed differential between sample and baseline. If desired, to also display the STEL, Ceiling, and their associated limits:

1. Click on the top chart.
2. Click the **Filter** icon in the upper right corner of the chart.
3. Check the calculations and limits you want to display.
4. Click **Apply**.



In the summary table, the baseline minimum, maximum, average, and TWA, Ceiling, and STEL values are all subtracted from the sample to calculate the process contribution.

Test Results - PM 2.5 (ug/m3)

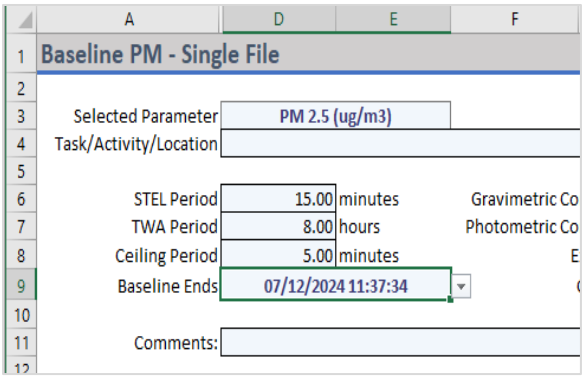
Target Names								
Target Limits						12		6
File	Duration (hr)	Logging Interval (s)	Min	Max	Avg	TWA	Ceiling	STEL
Baseline	1.02	1.	0.000	7.000	1.906	0.244	5.953	4.473
Sample	1.02	1.	0.000	33.000	4.888	0.625	6.247	2.304
Process Contribution			0.000	26.000	2.982	0.381	0.293	-2.169

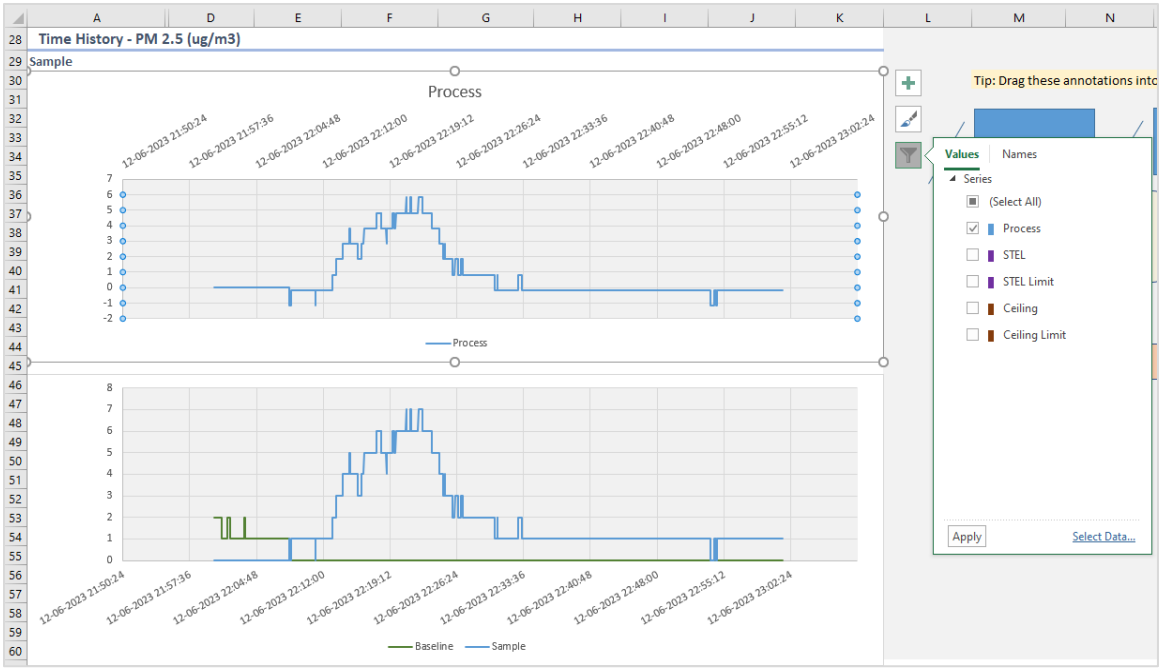
Baseline PM – Single File

Before analyzing data, you first need to select the time that the **Baseline Ends** cell at the top of the worksheet. This effectively separates the baseline from the sample.

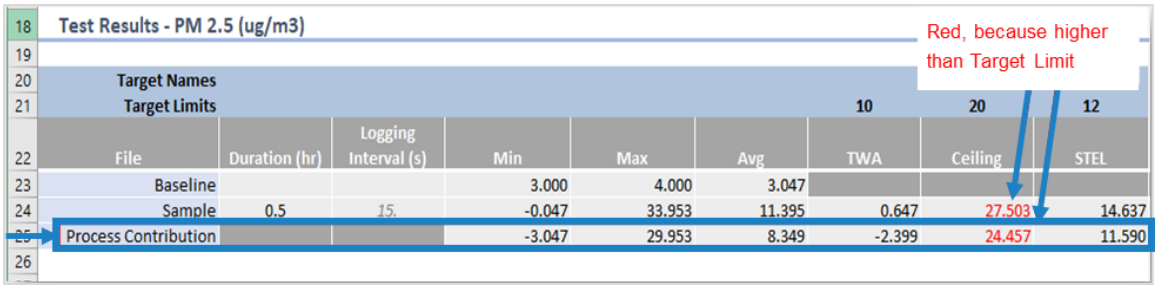
The lower time history chart displays the baseline and sample in the same chart. The baseline section is colored green while the sample section is colored blue. The top chart shows the sample section with the baseline average subtracted from it. If desired, to also display the STEL, Ceiling, and their associated limits:

1. Click on the top chart.
2. Click the **Filter** icon in the upper right corner of the chart.
3. Check the calculations and limits you want to display.
4. Click **Apply**.





In the summary table, the baseline minimum, maximum, and average are subtracted from the sample to calculate the process contribution. For the TWA, Ceiling, and STEL values, the baseline average is subtracted from the highest sample values to calculate process contribution.



You can use Excel® spreadsheet program's drawing tools to highlight or annotate the charts if desired. See ***Error! Reference source not found.*** for more information.

Step 6 Complete the Assessment

To complete the report, you can add recommendations under the Conclusions section.

The print layout for this sheet does not include the measurement data in the blue tables at the bottom of the sheet. They will not appear in a PDF export either.

Knowledge Beyond Measure.

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