

**ELECTRONIC REPORTING TOOL (ERT)**

**USER'S GUIDE**

**Version 5**

**December 2014**

## ERT - Main Menu

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Test Plan

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SCC

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**Administration**

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Select Project Data Set
Create New Project Data Set
Save Project Data Set As
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Current Project Data Set: Q:\SHARE\ERT\ProjectData\EWS Example Data 2007.accdb

**Project Submittal History:** Create ERT Submission Package File

Action	SubmitDate	SubmittedTo	SubmittedFr	Comment
Submit Test Plan	4/15/2005	NC Agency	MACTEC	1st Final
Approve Test Plan	5/14/2005	MACTEC	NC Agency	Approved
Submit Test Report	10/12/2011	NC DNER	MACTEC	Final Test Report

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## Chapter 1: Introduction

Thank you for using this version of EPA's Electronic Reporting Tool (ERT). Please keep checking <http://www.epa.gov/ttn/chief/ert/index.html> for the latest version of ERT and the user's manual.

### What is the ERT?

The ERT is used to electronically create and submit stationary source sampling test plans and reports to regulatory agencies, provide a means for regulatory agencies to give comments on a test plan after approval to document the test program, calculate results and submit (or resubmit) the test results as an electronic report to the regulatory agency. Additionally, the ERT provides a means for individuals to review and comment on the submitted test report. Certain EPA regulatory programs require the use of the ERT to submit compliance tests. The ERT allows one to create a compressed submittal package, which consists of the test data and an XML export file. Users can then send the submission package file to the EPA's Central Data Exchange (CDX). The test reports will then be stored in the EPA's WebFIRE database [<http://cfpub.epa.gov/webfire/>].

### ERT Main Parts

When you open the ERT for the first time, you will see the Microsoft Access Application. The application, which consists of the main screen, internal screens and menu buttons, allows one to create a Project Data Set (PDS). The PDS contains all of the information required, plus any attachments. The Microsoft Excel spreadsheet is an optional part of the ERT. You can use it to enter manual source test data and subsequently import that data into the ERT.

- ERT Application

The ERT Application is a Microsoft Access Database. To run the ERT, you must have Microsoft Access 2007, 2010, 2013 or the runtime version of Microsoft Access. The runtime version is available for free from the Microsoft Access Download Center at <http://www.microsoft.com/en-us/download/details.aspx?id=10910>. Before running the ERT for the first time, please refer to Chapter 2: Before You Begin for instructions.

- Project Data Set

The Project Data Set (PDS) is a Microsoft Access Database file generated by the ERT Application which, depending on the stage of completion, may contain the Test Plan, Test Plan Review (by the Regulatory Agency), Test Report Data and/or Test Report Assessment (by the Regulatory Agency). This is the file that will be exchanged between the source test contractor, the client and the state agency, and the EPA. Each PDS contains information for test reports from one emissions source. When you create a new PDS, you are prompted for a file name for the PDS that is created. The file is created automatically in a "ProjectData" directory by the ERT. You may change the location of the "ProjectData" directory if you wish. The last PDS used is remembered by the ERT when restarted. There is no limit on the number of PDS files, but only one PDS can be opened at a time.

- Excel Spreadsheet

The Excel spreadsheet can be used as an option for entering manual test data into the ERT. Manual test run data can be entered into the spreadsheet and then imported into the ERT. Users have the option of incorporating this spreadsheet into their legacy spreadsheets and then importing the data into the ERT.

## Basic Workflow

The basic work flow is as follows, though other work flows are possible:

- Source Test Owner
  - Creates a partial test plan with basic information on facility and process requiring testing and target analytes to be included.
  - Emails the ERT PDS to source Test Company for completion.
- Source or Testing Company
  - Creates the test plan/report [Note: The test *plan* is part of the test *report*. You have the option to submit a test *plan* to the regulatory agency before testing, but it is not required].
  - Creates the ERT Submission Package File.
  - Submits the ERT Submission Package File to regulatory agency.
- Regulatory Agency
  - Reviews test plan, **if** submitted, communicates with source/testing company, as necessary.
  - Approves test plan or marks areas where more information is needed.
- Source or Testing Company
  - Updates the test plan, **if** requested by the regulatory agency, creates new ERT Submission Package File, and resubmits to the agency.
  - **If** approved by regulatory agency, performs testing.
  - Enters run data into spreadsheet or directly into the ERT.
  - Enters lab data into the ERT.
  - Attaches supporting documentation.
  - Creates the “ERT Submission Package” file.
  - Submits the “ERT Submission Package” file to Regulatory Agency or EPA.
- Regulatory Agency
  - Reviews test report.

## Chapter 2: Before You Begin

Here are some tips to help complete each section of the ERT.

### Test Plan

Completing the test plan accomplishes two interrelated processes in the ERT. First, it is the vehicle used to inform all the parties associated with the planned test program of the needed details about the specific process unit to be tested, the test matrix (test methods, number of runs, duration of runs, analytical finish, etc.), the process information to be collected, the QA/QC activities, and the safety requirements. Second, the test plan provides the foundation for the test report since all of the information that is in the test plan is used in some aspect of a comprehensive test report.

Although, the operating permit is not needed to input the minimum information required to complete a test plan in the ERT, it is recommended that a copy of the operating permit for the affected source be available. The permit will provide most of the site identification information needed for the ERT.

Test location information, process descriptions, air pollution control device information and parameter monitoring information are the same as normally required for test plans (see EPA Emissions Measurement Center Guideline Document 42, Preparation and Review of Site Specific Test Plans <http://www.epa.gov/ttn/emc/guidlnd/gd-042.pdf>).

The ERT requires detailed process information. This information is important in properly characterizing the emission process and is necessary for EPA to develop and update its emissions factors (EF) database. EF data is typically represented as a mass rate of emissions per process parameter (i.e. lb pollutant/ton of product made). The process data are needed to determine the value of the denominator. **Required** facility and process information includes, but is not limited to:

- Process rate information,
- Source Classification Code (SCC)  
Facility Registration Number, and,
- Air Pollution Control Device (APCD) operating parameters.

### Manual Sampling Data

The ERT allows entering run field data two ways:

1. Entering data into the ERT spreadsheet and then importing the data into the ERT.
2. Entering the data directly into the ERT.

The spreadsheet option is provided for user's that are more comfortable using spreadsheets. The ERT spreadsheet provided may also be incorporated into user's proprietary field data spreadsheets. Users

can link cells from their spreadsheets to the cells in the ERT spreadsheet. This allows for quicker data entry into the ERT and reduces the likelihood of key punch errors.

The ERT has been designed to accept data for most of the individual test methods commonly used today. Although we recognize that some test methods may be combined to minimize the number of sample trains in operation, ERT has not been set up to include all possible combinations. Therefore, if a single train is used for multiple methods which the ERT is not currently capable of combining (example: Method 5 and Method 8), data for each method must be entered into the ERT separately. To avoid the need to enter the same run data multiple times, we recommend the use of the included Excel spreadsheet and importing the data into each method, as appropriate.

## Instrument Sampling Data

At this time, the ERT requires manual entry of instrumental test data, which is input by location and method. To allow for automatic calculation of system bias and linearity, each calibration standard must be entered into the ERT under item 16 of the “*Test Plan*” tab.

## Chapter 3: Getting Started

### Verify that you have a Version of Microsoft Access that will Run the ERT

If you have Microsoft Access version 2007:

- Verify that you have at least Service Pack 2 installed. Open Microsoft Access, click on the MS circle in the upper left corner of the Access window, click on “*Access Options*” at the bottom of the window, click on “*Resources*” in the left column. At the bottom of the window just below the text “about Microsoft Office Access 2007” the software (Microsoft Office Access 2007) and the Service Pack level is identified. If Service Pack 2 is installed, the text “SP2 MSO” will be between two sets of numbers that are in parentheses. If you do not have Service Pack 2 installed, click on “*Check for Updates*” and follow the directions to install the updates from Microsoft. Many corporate computers do not allow users to install software and you will need to contact your information technology center and have them update your software.

If you have Microsoft Access version 2010 or 2013: Any Service Pack level is acceptable in order to run the ERT Application.

If you do **NOT** have Microsoft Access:

- You will need to download and install the runtime version of Microsoft Access from the Microsoft Access Download Center. A link to the download center is provided on the EPA ERT website.
- After installing the Runtime version of Microsoft Access, follow the instructions below to install and run the ERT.

### Downloading and Installing the ERT

The EPA website <http://www.epa.gov/ttn/chief/ert/index.html> contains the latest versions of the ERT, the spreadsheet, the user’s guide, and example data sets.

Once you’ve determined that you are running a version of MS Access which is capable of running the ERT Application, follow these two steps.

1. Download the latest versions program files. This file includes the latest version of the ERT and the user’s guide.
2. To run the ERT, right click on the downloaded zip file and select “*Extract All*”. Select a destination for the extracted files. Go to the destination folder and double click on ERT4.accdb file.

***Example Data***

The EPA's website also contains example data for use with the ERT. Download the files from the ERT Project Data Set example link. This file includes an example Project Data Set (PDS) and the associated spreadsheet. Unzip the files to your hard drive and use the ERT to select the Example Data V3.mdb file. See the [Selecting a Project Data Set](#) section for more information on selecting a PDS.

**Starting the ERT**

To start the ERT, double click ERT4accdb file from the location where you've installed the ERT application.

Depending on how your version of Access is configured, you may see a "Security Warning" window (as shown below) when you try to start the ERT.

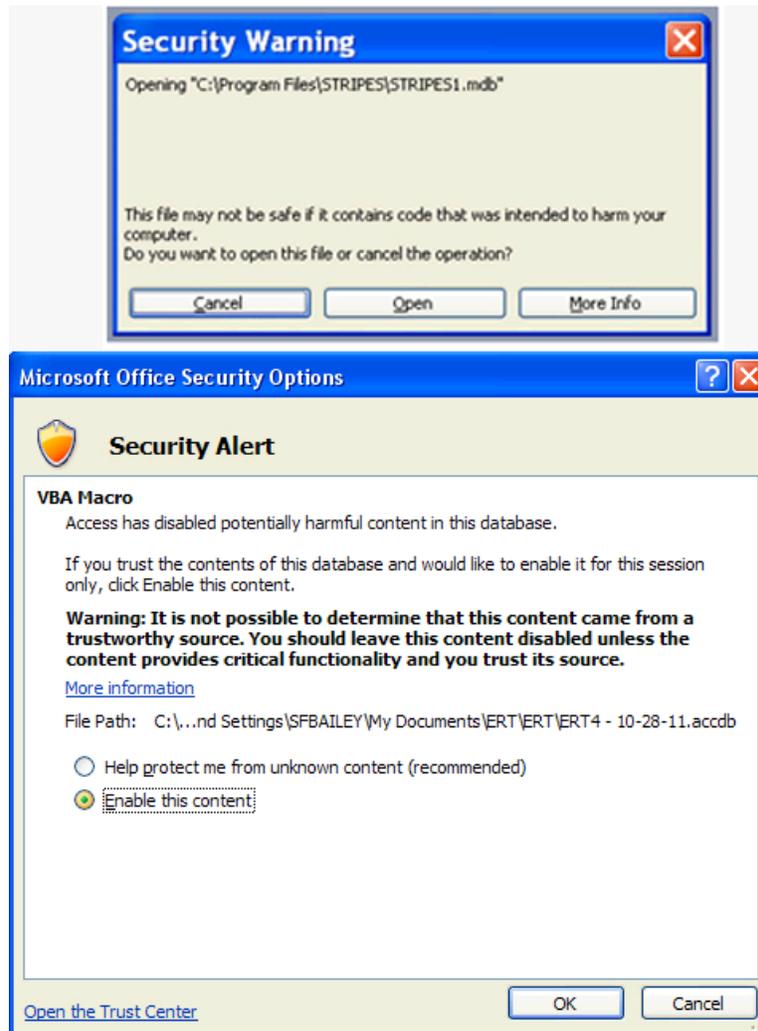


Figure 1 - Security Warning

If the warning (or a similar one) appears, click the “**Open**” button to continue loading the ERT into Access. If the bottom alert appears, select “**Enable the content**” and click the “**OK**” button. There may also be a compatibility warning. Click the “**X**” to close. If you want to avoid these warnings in the future, you can make the ERT directory and all subdirectories “**Trusted Locations**.” To make this directory a trusted location, close the ERT application, open Microsoft Access, click on the MS circle in the upper left corner of the Access window, click on “**Access Options**” at the bottom of the window, click on “**Trust Center**” in the left column, click on “**Trust Center Settings**”, click on “**Trusted Locations**”, click on “**Add new location**”. Browse for the location or directory where you saved the ERT application (the file ERT4.accdb), select this location and click on the box to the left of “**Subfolders of this location are also trusted**” to enable these locations. Click on “**OK**”. Verify that the path that you selected is one of the trusted locations. Click “**OK**” to close the trust center window then the Access Options window. Close Access. Reopen the ERT application.

After the “*Trust Center Settings*” have been established, the first time any new version of the ERT loads, the “*ERT Main Menu*” will look like **Error! Reference source not found.** The only election buttons available are “*Select Project Data Set*”, “*Create New Project Data Set*” and “*Help / Sys. Reports.*” All other selection buttons are either not selectable (the button is dimmed) or produce no useful function when selected.

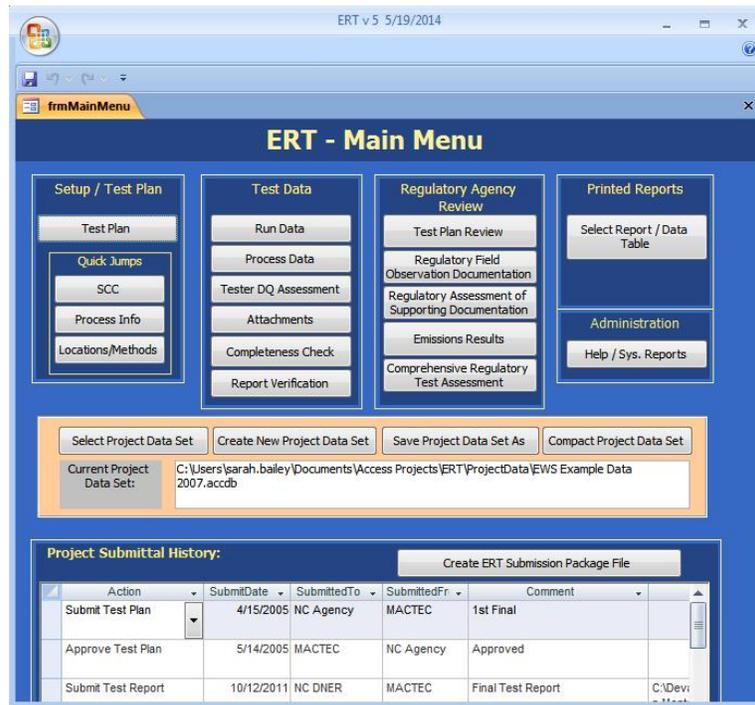


Figure 2 - ERT Welcome Screen and Main Menu

## Project Data Sets

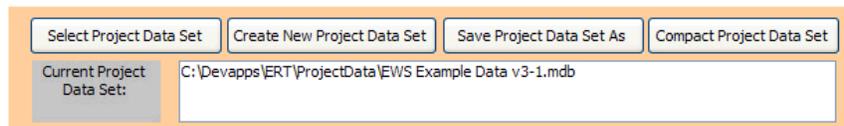


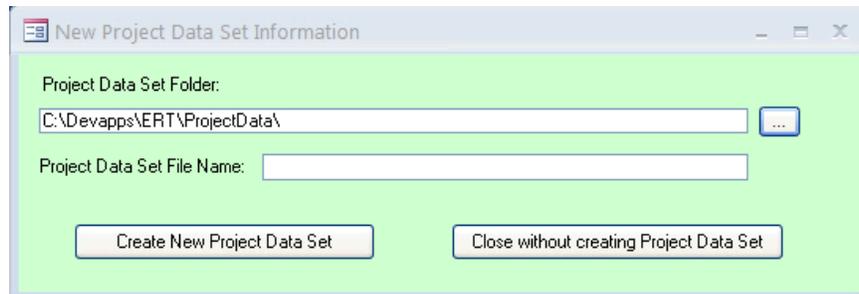
Figure 3 - Project Data Set Area of the ERT Main Menu

The PDS is a Microsoft Access file that contains all of the information for all the source tests performed at a single emissions source. This includes the test plan, run data, test report, test review and any supporting documentation that has been included as attachments.

When the PDS is sent to the regulatory agency, the agency can use the ERT to review and approve the PDS for the source test. When attachment file sizes are small, the ERT’s file can be emailed through many corporate, commercial, state and Federal email systems.

You can select, create, save as, or compact a PDS from the “*ERT Main Menu*”. The first time you create a PDS, you will select “**Create New Project Data Set.**” Thereafter, you can select the project data set and click on “**Save Project Data Set As**” to save the entire PDS with another name or to save only the test plan part of the first data set as a template.

### *Creating a Project Data Set*



**Figure 4 - Project Data Set Area of the ERT Main Menu**

- Click “**Create New Project Data Set**” from the “*Project Data Set*” area of the ERT main menu.
- Browse for the location of the folder to store the PDS or let it stay in the default folder.
- Enter a name for the PDS file in the “Project Data Set File Name” box.
- Click “**Create New Project Data Set**” to create a PDS with the name you entered in the folder you created.

### *Selecting a Project Data Set*

- Click “**Select Project Data Set**” from the *project data set* area of the ERT Main Menu. A “*Browse*” menu like shown in **Error! Reference source not found.** will appear.
- Select the PDS from the default folder (ProjectData) or browse to the folder containing the desired PDS and select the file and click “**Open**”.

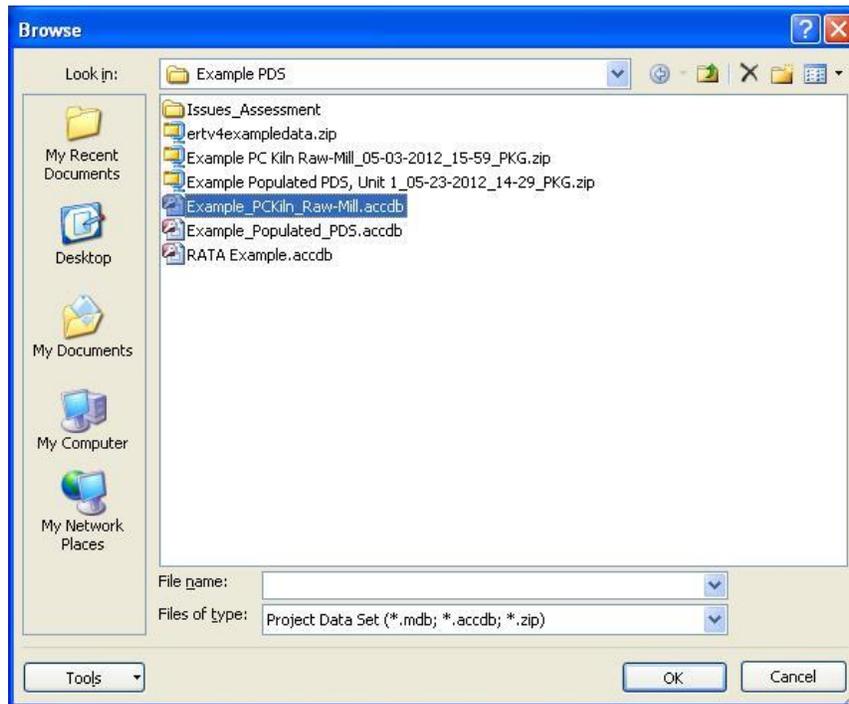
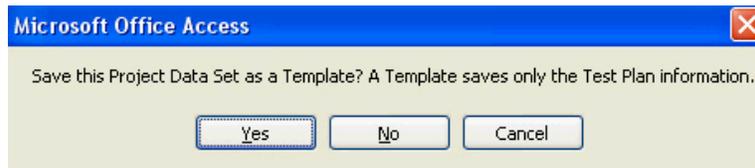


Figure 5 - Select Project Data Set Window

### *Performing a Save As on a Project Data Set*

Source tests for similar sources may contain some of the same information. To keep from having to enter the same information for similar tests, the ERT has the ability to save the currently selected PDS as a template. When this happens, a new PDS is created with the current test plan information saved and all the other data deleted. The new template PDS can then be used as a starting point for a similar source test. The ERT also has the ability to save all of current PDS data into a new PDS.

- Click “**Save Project Data Set As**” from the ERT main menu. The window shown in **Error! Reference source not found.** will appear.
- Click “**Yes**” to save the current PDS as a Template (saving test plan data only).
- Click “**No**” to save the current PDS (saving all data).
- Click “**Cancel**” to cancel the operation.



**Figure 6 - Save Project Data Set as Template**

### ***Compacting a Project Data Set***

Microsoft Access files can be very large. By clicking on “**Compacting a Project Data Set**” you can reduce the file size of the project data set. This will not affect the quality of content of the file. Do this by clicking “Compact Project Data Set” from the project data set area of the ERT main menu. A message will alert you when the process is complete.

### ***Compacting the ERT***

Because of the way Microsoft Access manages memory allocation, the file size of the ERT program will grow. If you have Access 2010, or runtime program from 2010, or later, installed then the file will automatically compact itself upon closing the program.

For versions of Access 2007, the user will need to periodically compact the ERT. Do this by following these steps:

1. Click the Microsoft Access icon on the upper left of the ERT Access program. This will open the Microsoft administration tools window, as seen in **Figure 7**.
2. In the left menu of the Administration tools window, click on the “Manage” icon. A submenu will open in submenu selection space in the right most part of the window.
3. Click on the “Compact and Repair Database” selection to compact the ERT.

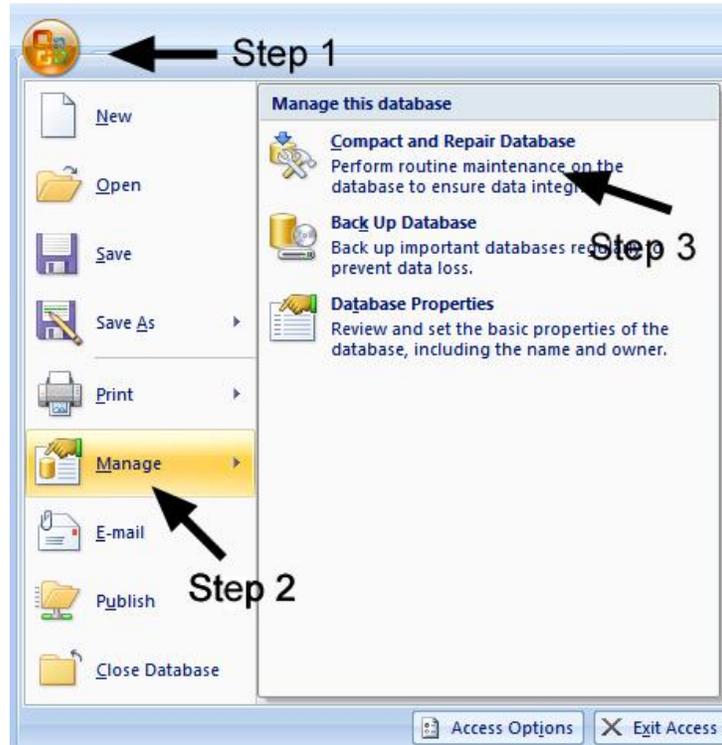


Figure 7 - Access 2007 Compacting of ERT

### Project Submittal History/Creating the ERT Package for Regulatory Agency Submittal

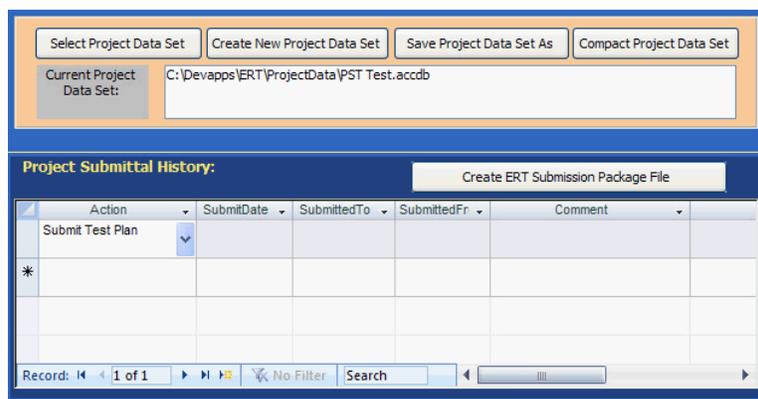
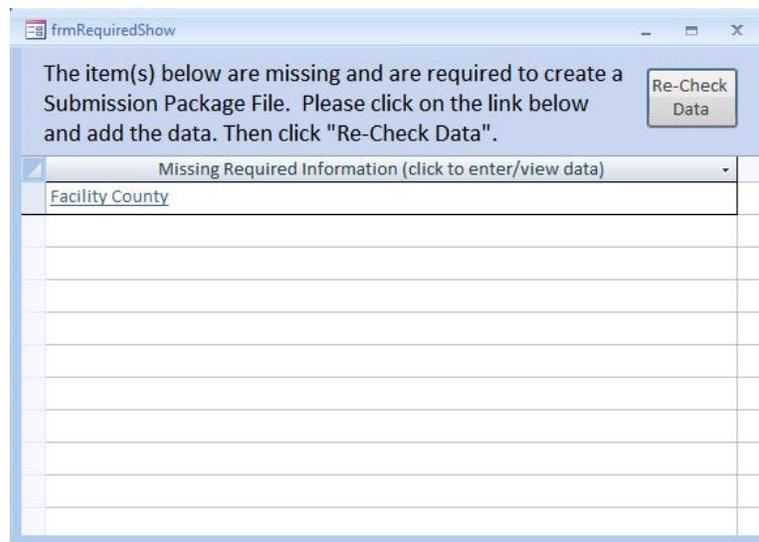


Figure 8 - Project Submittal History Area of the ERT Main Menu

The “*Project Submittal History*” area of the ERT allows you to create an ERT submission package file and keep track of where the PDS is in the workflow of the source test process. (Please see the

previous [Basic Workflow](#) section for more information on the workflow process). At the completion of each step (test plan, test plan review, test report, test report review / approval), the action, date submitted, to whom it is being submitted, who made the submission, and any special comments are entered into this area.

To create a submission file, click “**Create ERT Submission Package File.**” If any required fields are not complete, a window will open with a list of links to the screens. Click on the links to the screens to complete the fields. Once the field window is closed, click on the “**Re-Check Data**” button. When all the required fields have been completed, the “**Create ERT Submission File**” window will open, shown in **Figure 9**, in which the file preparation menu is activated.



**Figure 9 - Create ERT Missing Items List**

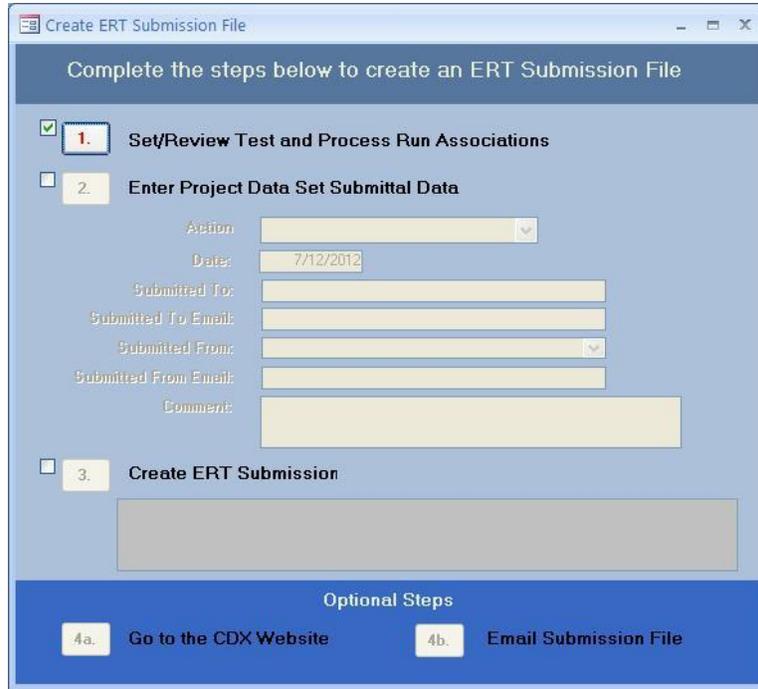


Figure 10 - Create ERT Submission Package File menu

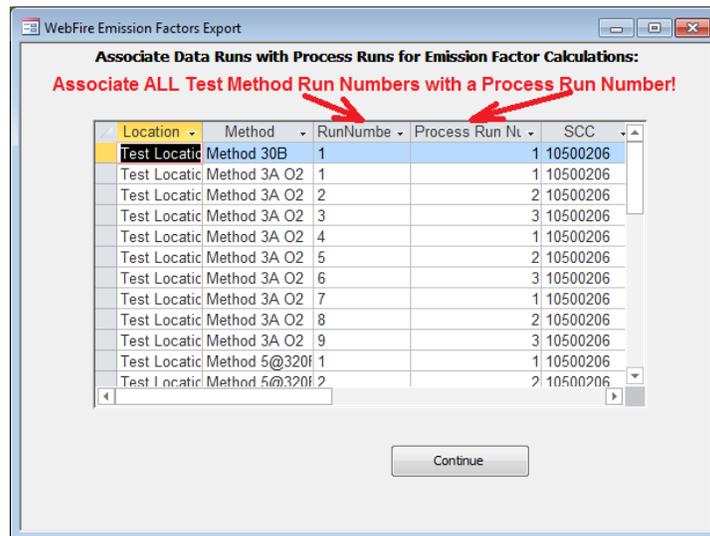
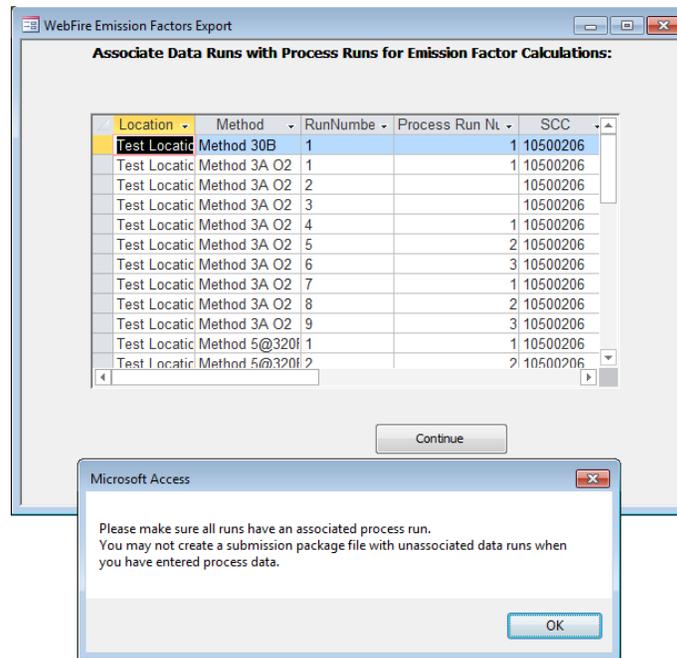


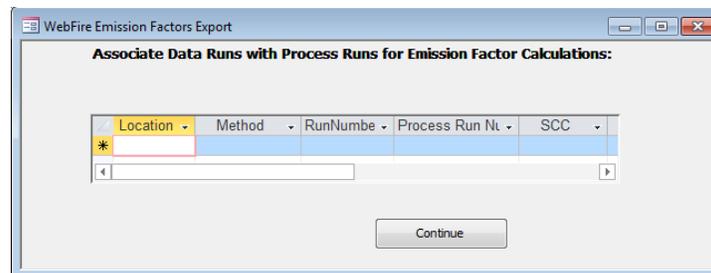
Figure 11 - Project Submittal History Step 1

Click on the number 1 of **Figure 10** - Create ERT Submission Package File menu to “*Set/Review Test and Process Run Associations*” and you will see the above screen (**Figure 11** -

Project Submittal History Step 1). This allows you to associate the process data with the test run data. Even if you associated process data with test run data in the emissions tab of the run data details screen, you may need to make the associations in this screen. **THIS IS REQUIRED FOR SUBMITTING TO EPA**. Successful association of the data will result in a table, as in **Figure 11 - Project Submittal History Step 1**.



**Test runs without associated process runs.**



**Test Plan. No test runs to associate and no process run data.**

**Figure 12 - Project Submittal History Step 1 of New Project with no associated data**

If you have not associated every test run with a process run, when you click on “**Continue**” you will receive a notice as shown in the top part of Figure 12. When submitting a PDS with only test plan data there will be no run or process data to associate as shown in the bottom part of Figure 12. Click on “**Continue**” button to skip this process and continue to create the submission package file.

Complete the steps below to create an ERT Submission File

1. Set/Review Test and Process Run Associations

2. Enter Project Data Set Submittal Data

Action: Submit Test Report

Date: 10/26/2011

Submitted To: EPA

Submitted From: amec

Comment: Submitting test report

3. Create ERT Submission

Optional Steps

4a. Go to the CDX Website      4b. Email Submission File

Figure 13 - Project Submittal History Step 2

Click the number 2 to “*Enter Project Data Set Submittal Data*”. This will activate the fields so that the data can be entered. Select the action from the dropdown list and enter the other information in the fields. The actions are as follows:

- “*Submit Test Plan*”
- “*Notice of Deficiency - Test Plan*”
- “*Resubmit Test Plan*”
- “*Approve Test Plan*”
- “*Submit Test Report,*”
- “*Notice of Deficiency - Test Report*”
- “*Resubmit Test Report*”
- “*Approve Test Report*”
- “*Request Additional Information*”
- “*Other*”

While you may create a submission file without entering information in all the fields, this information will be saved in the “*Project Submittal History*” as documentation of the activities associated with the source test program.



**Figure 14 - Project Submittal History Step 3**

Click on number 3 to “*Create ERT Submission.*” An action window will appear with instructions as it creates the ERT Submission file, a PDS zip file and an ERT Submission zip file. When the “**Finished**” is clicked, the location of the field will be reported in the field.

If the internet is active, by clicking on 4a to “*Go to the CDX Website*”, you will be linked to the CDX website. By clicking on 4b to “*Email Submission File*”, the local email will open with a reminder to attach the file from the provided location.

*Note: If clicking on 4a to “Go to the CDX Website” generates a “Cannot Connect to Proxy Error,” click on “Internet Options”, then on “Advanced.” Check to be sure the SSL and TLS protocols are enabled under the security section.*

## Chapter 4: Create Test Plan



Figure 15 - The ERT Main Menu

Figure 15 - The ERT Main Menu shows the functional areas of the *ERT Main Menu*.

- “*Setup / Test Plan*” with “*Quick Jumps*”
- “*Test Data*”
- “*Regulatory Agency Review*”
- “*Printed Reports*”
- “*Administration*”
- “*Project Data Set*”
- “*Project Submittal History*”

If you are working with a new (empty) project data set (PDS) you will only be able to access the “*Setup / Test Plan*” functions of the ERT. After you have completed entering the setup information, you will be able to access the other menu items. If you have already entered data into a PDS (or will be working with the example dataset provided on the website) and it has not already loaded, click the “*Select Project Data Set*” and follow the file select dialog instructions.

## General Information

[Click to see video on entering Facility-Tester information](#)

The screenshot shows a web-based form for entering facility and tester information. The form is titled 'Test Plan' and has a sub-tab 'Facility/Tester'. The main title of the test plan is 'Emissions Testing of Wood Chip Dryer 2' and the date is '1/2/2014'. The form is divided into two main sections: 'Facility Name' and 'Testing Company'. The 'Facility Name' section includes fields for Facility Name, Address, City, State/Zip, County, Contact, Phone, Fax, email, AFS Number, Industry NAICS, FRS, State ID, Latitude, and Longitude. The 'Testing Company' section includes fields for Testing Company, Address, City, State/Zip, Contact, Phone, Fax, email, and Testing Company Project Number. There are also buttons for 'Attach Test Company Certification' and 'Attach Field Team Lead Certification'. A 'Next Page' button is located at the bottom right of the form. A red asterisk indicates required fields.

Figure 16 - Test Plan Facility/Tester Tab

### Data Entry Process

To begin the data entry process, click “**Test Plan**” in the “**Setup / Test Plan**” on the ERT main menu. The screen shown in **Error! Reference source not found.** will appear. This screen contains a series of data entry tabs that cover the information required for a test plan/test report. [Recall a test *plan* is not required by the EPA to be submitted. However, a state air agency may require/request that it be sent to them. Keep in mind, these fields should be filled in before a submission package file is submitted] There are 10 tabs or sections in the test plan module: “**Facility/Tester**,” “**Permit/SCC**,” “**Regulations**,” “**Process/APCD**,” “**Locations/Methods**,” “**Methods cont.**,” “**Audit/Calibrations**,” “**Schedule**,” “**Signatures**,” and “**Attachments**.”

### Requested Information

The information requested has been selected to adequately characterize a facility, the regulatory use of the data, and what tests are to be performed. In general, providing this information will give the test plan reviewer enough information to evaluate the test plan without needing additional information. However, it is not possible to create a generic list of information that includes all the information for all test plan scenarios. Use comments and attachments to provide information in the test plan to facilitate review whenever possible. Complete all sections to speed up the test plan review and approval process. You may access specific sections of the test plan

data entry form by clicking the other control buttons on the ERT main menu (e.g. “**Locations/Methods**”).

### ***Screen Navigation***

Move from one section to the next by clicking the “**Next Page**” button located in the bottom right corner of the screen or by clicking on the desired tab of the data entry form. You will generally have two options for entering data in the form, either typing in the spaces provided or using the copy and paste method to extract information from other electronic documents.

### ***Screen Help Tips***

Moving the cursor over the blue circled question mark displays a “pop up” help tip window that provides a detailed description of what is needed for that field.

## **Facility/Tester Screen**

Enter information about the facility and the testing company. The fields are as follows:

<b><i>Facility Name:</i></b>	The public or commercial name of the facility site (i.e., the full name that commonly appears on invoices, signs, or other business documents).
<b><i>Address:</i></b>	The address that describes the physical (geographical) location of the front door or main entrance of a facility site, including urban-style street address or rural address.
<b><i>City:</i></b>	The city in which the facility resides.
<b><i>State/Zip:</i></b>	The two letter state and mailing zip code in which the facility resides. Use the drop down menu to select the two letter postal code for the State.
<b><i>County:</i></b>	The county or parish in which the facility is located. Use the drop down menu to select the county. These will be available after the postal code for the State is selected. One use of this information is a search criterion to identify a facility which is in the regulatory jurisdiction of a local or tribal agency.
<b><i>Contact:</i></b>	The person with knowledge of the facility’s operations during the test program who can assist reviewers of the test plan or test report if they have questions.
<b><i>Phone:</i></b>	The phone number of the contact or the facility.
<b><i>Fax:</i></b>	The facsimile number of the facility through which the contact can assist the reviewers (optional).
<b><i>Email:</i></b>	A working email address of the contact which can be used to assist the reviewers.
<b><i>AFS Number:</i></b>	EPA AIRS Facility System (AFS) number.

<b>Industry NAICS:</b>	North American Industry Classification System.
<b>FRS:</b>	EPA Facility Registry System number (FRS). A web link to EPA's Envirofacts web page is provided should you not know the FRS number. Several search methods are available to locate the facility and obtain the FRS number and other information on the facility.
<b>State ID:</b>	The state identification number as provided by a state air pollution control agency.
<b>Latitude:</b>	Latitude of emission release point (typically the stack), with a minimum of 5 decimal places.
<b>Longitude:</b>	Longitude of emission release point (typically the stack), with a minimum of 5 decimal places.
<b>Testing Company:</b>	The public or commercial name that commonly appears on invoices, signs or other business documents. A button is adjacent to the data entry field to attach a copy of certification documentation including that the testing firm qualifies as an AETB as described in ASTM D7036-12 Standard Practice for Competence of Air Emission Testing Bodies,
<b>Address:</b>	The standard address used to send mail to an individual with the source test company.
<b>City:</b>	The state in which the source test company resides.
<b>State/Zip:</b>	The two letter state and mailing zip code of the source test company.
<b>Contact:</b>	The person with knowledge of the design and conduct of the source test program. A button is adjacent to the data entry field to attach a copy of certification documentation including that the test team lead is a Qualified Individual as described in ASTM D7036-12 Standard Practice for Competence of Air Emission Testing Bodies,
<b>Phone:</b>	The phone number of the source test company through which the contact can assist the reviewers.
<b>Fax:</b>	The facsimile number of the source test company through which the contact can assist the reviewers (optional).
<b>Email:</b>	A working email address through which the contact can assist the reviewers.
<b>Testing Company Project Number:</b>	The assigned project number for the testing project by the test company (optional).

*Note: If you have access to the Internet, clicking on "Search on the Web" link will connect to a website that will allow you to search for your NAICS or FRS number.*

## Permit/SCC Screen

[Click to see video on entering Permit-SCC information.](#)

The screenshot shows a web-based form titled "Test Plan" with the following fields and values:

- Test Plan Title:** BP - Decatur Works, Decatur AL - AB8103 RATA-2012
- Test Plan Date:** 12/11/2011
- Facility/Tester:** Permit/SCC
- Air Permit Number:** 712-0002-X058
- Permitted State Source ID/Name:** AB8103 Hot Oil Furnace
- Permitted Maximum Process Rate:** 178.3 MMBtu/hr
- Maximum Normal Operation Process Rate:** 100-150 MMBtu/hr
- Target Process Rate for Testing:** 90 MMBtu/hr
- Operational Hours Per Year:** 5500
- SCC:**
  - Select SCC from list** button
  - SCC/Desc.:** 10200601 External Combustion Boilers - Industrial - Natural Gas - > 100 Million BTU/hr
  - Target Parameter:** Heat Input
  - Process Rate:** Million Btus/hr
  - Pollutant Unit of Measure:** Lb/hr
  - Target Parameter Description (if needed):** (empty text area)

Buttons for "Previous Page" and "Next Page" are visible at the bottom right. A red note at the bottom left indicates "( \* required fields)".

**Figure 17 - Test Plan Permit/SCC Tab: Resulting SCC**

The “*Permit/SCC*” tab screen is where permit information is inputted, including process rate information. Also, this is where the Source Classification Code (SCC) is selected by clicking on the “**Select SCC from list**” button. SCCs are 8 digit codes that represent a specific emission process, oftentimes for a specific industry. If you do not know the correct SCC, source descriptions in the relevant section of AP-42 may provide you the code or part of the code otherwise you should contact the facility. It is very important to select the proper SCC for the emission process you’ve tested.

The fields are described as follows:

<b><i>Air Permit Number:</i></b>	State or Federal Permit Number.
<b><i>Permitted State Source ID/Name:</i></b>	Many state and local agencies have alphanumeric identifiers for individual process operating units with an associated name describing the unit. If the regulatory agency to which this test will be sent has a specific identifier for the unit tested, enter it in this location.
<b><i>Permitted Maximum Process Rate:</i></b>	Rate as listed in Title V or state permit.
<b><i>Maximum Normal Operation Process Rate:</i></b>	Rate as listed in Title V or state permit.
<b><i>Target Process Rate for Testing:</i></b>	Value of the target process rate for the test program.

**Operational Hours Per Year:** Normal hours the facility operates in a year.

**SCC/Desc:** The **Source Classification Code** (SCC) is selected through the use of the “**Select SCC from list**” button. Yellow fields are copied from another form (**Figure 18** - Test Plan Permit/SCC Tab: Selecting SCC) and cannot be edited from the yellow highlighted field.

**Figure 18 - Test Plan Permit/SCC Tab: Selecting SCC**

**Target Parameter:** For most SCC's, this field is automatically filled based on the SCC selected. For those SCC's without an established target process parameter, this will be a user established parameter.

**Process Rate:** The rate units used to quantify the feed or output level of the target parameter for the source process.

**Pollutant Unit of Measure:** The unit of measure for the target pollutants measured during the test. The time units in the denominator for the process rate and the pollutant unit of measure must be the same. Additional pollutant units of measure may be selected in the “**Locations/Methods**” tab.

**Target Parameter Description:** Description of the identified target parameter and associated process rate and pollutant unit of measure if the text used in the fields requires clarification.

**Note:** The fields with yellow background are filled in automatically when the SCC is selected from the series of dropdown lists.

While many SCC's have one or more established sets of emissions units and units for quantifying the process rate, there are also many which do not have a set of units for process rates. **Figure 19** shows a short list of SCC's where there are four SCC's with established units for the process rate and four SCC's where there are no established units to measure the process rate.

Description	SCC8	UNIT	MEASURE	MATERIAL	ACTION
Bleaching	30504160				
Calcining, calciner NEC	30504149				
Calcining, flash calciner	30504142	Lb	Tons	Clay	Produced
Calcining, multiple hearth furnace	30504141	Lb	Tons	Clay	Produced
Calcining, rotary calciner	30504140	Lb	Tons	Clay	Produced
Drying, apron dryer	30504132	Lb	Tons	Clay	Produced
Drying, dryer NEC	30504139				
Drying, rotary dryer	30504130				

**Figure 19 - SCC selection menu with no established process units**

When a user selects one of the SCC's where there is no established set of units for the process rate, the selection of one of these SCC's will initiate a sub menu shown in **Figure 20** which allows the user to establish a set of units for documenting the process rate variable to associate with the measured emissions. The process variable is divided into four parameters. The first parameter is the units used to measure the pollutants. A default of pounds (Lb) is pre-populated in the "**Pollutant Unit**" field. Other units may be selected either from the drop down list or users may add emissions units. Users should limit their selection to units which are available as a rate (i.e. /hr or /minute) in the "**Add Emissions/Concentrations**" area of the "**Locations/Methods**" tab (Item 7b). The second parameter is "**Measure**" which is the units used to measure the process rate. Several existing units for measurement are available and include but not limited to tons, megawatt-hour, and pounds. Additional units of measurement may be added should the required measurement units not be in the list. The third parameter is "**Material**." The parameter material is the designation of what material is measured as an indicator of the process rate. As with "**Measure**" many items are available in the drop down list of existing materials. Also, the user may add a parameter describing the material used to describe the process rate. Lastly, "**Action**" is used to describe what action is used to describe the measured material. The drop down list includes many existing actions that have been used to describe other process rates. If the user cannot find a suitable action to describe the process rate measurement, an additional action may be added.

Source Classification Code Information

The SCC you selected does not have default values for the Emission Factor. Please select from the pick lists or enter this information below.

Pollutant Unit: Lb  
*Emission factor unit numerator; units associated with pollutant emitted (as in "LB" in "LB of NOx per tons of coal burned")*

Measure: Tons  
*Emission factor unit denominator; units associated with material processed (as in "TONS" in "Lb of NOx per TONS of coal burned")*

Material:   
*Material processed (as in "COAL" in "Lb of NOx per tons of COAL burned")*

Action:   
*Action performed on the material (as in "BURNED" in "Lb of NOx per tons of coal BURNED")*

*NOTE: The Material and the Action become the Target Parameter (as in "Coal Burned")*

OK Cancel

**Figure 20 - Process units' selection for SCC's with no default units**

Upon completion of the selection of the pollutant unit, measure, material and action, clicking on **“OK”** will return you to the SCC selection list where the time unit for measuring the process rate should be selected. The default time unit is hour but others may be selected from the drop down list. The time unit must be the same as the time unit used to measure the pollutant. Clicking on **“OK”** will return you to the tab for the entry of **“Permit/SCC”** information. You will notice that the fields **“Target Parameter,” “Process Rate”** and **“Pollutant Unit of Measure”** will have the items that were selected in the emissions factor selection screen. You may provide more detail on the target parameter used to describe the process rate if needed.

## Locations/Methods Screen

[Click to see video on Locations-Methods entry.](#)

**1. Please enter sampling location information. (all dimensions in inches)**  
(Required before test data entry)

Location: (click to view/edit)	Inlet/Outlet	Total Trave	Ports	Round Duct Diam	Duct Le	Duct Wid	Equivalent I	Up Str
inlet	Inlet	16	2	19.5	0	0	0.0	
stack	Outlet	16	2	72	0	0	0.0	

(Note: UpStreamDist = Distance from upstream disturbance; DwnStreamDist = Distance from downstream disturbance)

**2a. Please provide the following information for each test parameter. (Required before test data entry)**

Location	Target Parameter	Test Method	Num Test Runs	Test Run Duration	Comments
inlet	Arsenic	Method 29	3	64	
inlet	Cadmium	Method 29	3	64	
stack	Chromium	Method 29	3	64	
stack	Lead	Method 29	3	64	
stack	Manganese	Method 29	3	64	
stack	Nickel	Method 29	3	64	
stack	Silver	Method 29	3	64	
stack	Zinc	Method 29	3	64	
stack	Total organic compounds (T	Method 25A	3	64	
stack	Mercury	Method 30B	3	60	
inlet	Mercury	Method 30B	3	60	

**2b. Please select the Emissions Units of Measure for each location.**

Local	Method	Units of Measure	Corrected Analyte	Corrected %	Process Rate, Parameter
stack	Method 25A	lb/hr		0	
stack	Method 25A	ppm		0	

Figure 21 - Test Plan Locations/Methods Tab

You can input sampling locations and sampling methods using this screen.

- 1. Please enter sampling location information:** Section 1 is where sampling location information is entered. For existing test locations, you can either type the information directly into the fields, or click in the Location column which will open the “**Add Location**” screen. You must click on the “**Add Location**” for a new location. The different locations must have a unique name which must be entered before the remaining fields become activated. Multiple sampling locations may be provided for emissions sources requiring inlet and outlet testing, for different operating conditions or with multiple emissions locations. The ERT does not currently sum or average emissions from multiple locations. As a result, for sources with multiple inlets or outlet locations testers are required to calculate the sum or average of these multiple stacks and provide the resulting information in the “**Tester DQ Assessment**” section.

When you click “**Add Location**,” you’ll see a window like that shown in **Figure 22 - Test Plan Locations/Methods Location Edit and Insert options**. Enter a unique location name. Then select either inlet or outlet. If a “**Round Duct Diam**” is entered, the “**Duct Length**” and “**Duct Width**” fields will be inactivated. If a “**Duct Length**” value and “**Duct Width**” value are entered, the “**Equivalent Diameter**” will be calculated automatically.

Enter the “**Up Stream Distance to Disturbance**” and “**Down Stream Distance to Disturbance**” and click on the “**Calc Points**” button. The number of “**Total Traverse Points**” required by Method 1 will be automatically calculated. You may change the number in the “**Total Traverse Points**” field to reflect the proposed or actual number of traverse points.

Figure 22 - Test Plan Locations/Methods Location Edit and Insert options

Enter the values for percent oxygen, percent moisture, stack temperature and actual gas flow that you expect to exist during the emissions test in the far right data fields. Select “Yes” in the “*Non-Isokinetic Traverse*” field if this is an instrumental test method (such as Method 10, 7E, 6C or 25A). Select “No” if this is an isokinetic or manual extractive test method which Particulate Traverse or a traverse which requires isokinetic sampling. Check the box if a control device is present prior to the test location.

If Method 1a is being used, enter the port location measured in inches for “*Up Stream Pt. Loc. (M1A)*” and “*Dwn Stream Pt. Loc. (M1A)*”.

The fields are described as follows:

- Location:** Enter a unique sampling location name, such as inlet, stack, ESP inlet, scrubber outlet, etc.
- Inlet/Outlet:** Inlet or outlet flow direction.
- Round Duct Diam.:** Round duct diameter. The diameter of the sampling location, cross-section if round. Use/leave as zero (0) if the location is rectangular.
- Duct Length:** Duct length or depth measured in inches. If the sampling location is rectangular, input the length or depth of the duct. Use/leave as zero (0) if the location is circular or round.
- Duct Width:** Duct width measured in inches. If the sampling location is rectangular, input the width of the duct. Use/leave as zero (0) if the location is circular or round.

- Equivalent Diameter:** Equivalent diameter of a rectangular duct as calculated per Method 1. This value is calculated from the duct dimensions.
- Up Stream Distance to Disturbance:** Distance to upstream disturbance.
- Down Stream Distance to Disturbance:** Distance to downstream disturbance.
- Total Traverse Points:** Total number of sampling or traverse points. This value is calculated.
- Ports:** Number of access or sampling ports used for testing.
- Assumed Stack O<sub>2</sub> %:** Assumed percentage Oxygen (O<sub>2</sub>).
- Assumed Moisture %:** Assumed percentage moisture.
- Temp (F):** Temperature in degrees F.
- ACFM:** Actual cubic feet per minute.
- Non Particulate Traverse:** Selection of Yes/No of whether method is a particulate or non-particulate traverse.
- Emissions are Controlled:** Controlled device was present.
- Up Stream Port Location:** For Method 1a only. Location of disturbance upstream measured in inches.
- Down Stream Port Location:** For Method 1a only. Location of disturbance downstream measured in inches.
- **2a. Please provide the following information for each test parameter:** Section 2a is where the test methods, target pollutants and test parameters for each test location. To add test methods and target parameters to a test location, click the “**Add Target Parameters**” button to select a location, method and compound, as seen in **Figure 23 - Test Plan Locations/Methods Test Parameter**. Once there, you’ll see **Figure 24 - Test Plan Locations/Methods Select Location, Method, and Compounds** screen. You can either select a method directly from the drop down list or click “[select method by compound]”.

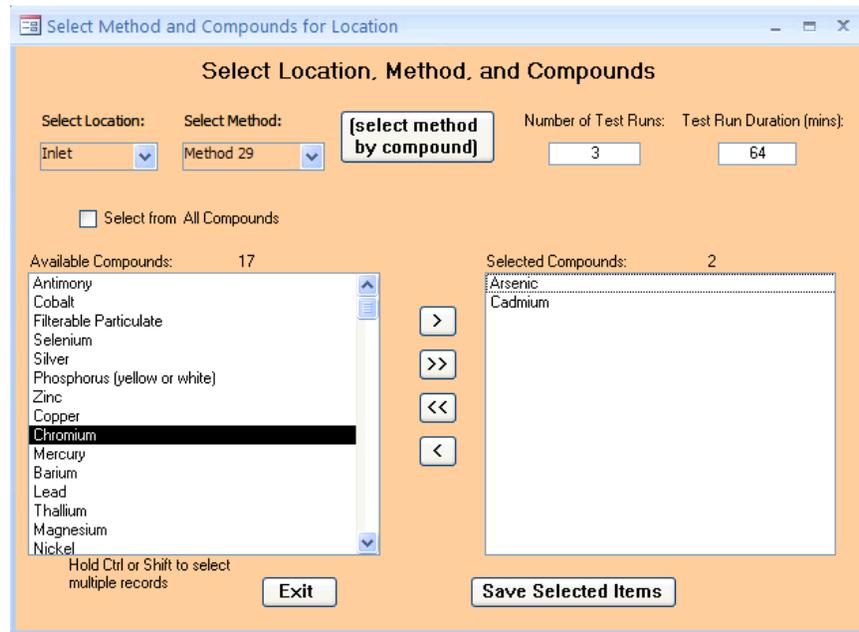
(Note: UpStreamDist = Distance from upstream disturbance; DwnStreamDist = Distance from downstream disturbance)

2a. Please provide the following information for each test parameter. (Required before test data entry)

Location	Target Parameter	Test Method	Num Test Runs	Test Run Duration	Comments
Inlet	Arsenic	Method 29	3	64	
Inlet	Cadmium	Method 29	3	64	
stack	Chromium	Method 29	3	64	
stack	Lead	Method 29	3	64	
stack	Manganese	Method 29	3	64	
stack	Nickel	Method 29	3	64	
stack	Silver	Method 29	3	64	
stack	Zinc	Method 29	3	64	
stack	Total organic compounds (T	Method 25A	3	64	
stack	Mercury	Method 30B	3	60	
Inlet	Mercury	Method 30B	3	60	

Record: 14 of 11 | No Filter | Search

Figure 23 - Test Plan Locations/Methods Test Parameter



**Figure 24 - Test Plan Locations/Methods Select Location, Method, and Compounds screen**

Once the method has been selected “*Available Compounds*” box will automatically populate, as in **Figure 24 - Test Plan Locations/Methods Select Location, Method, and Compounds screen**. You must move the compounds you are measuring to the “*Selected Compounds*” window on the right. To do so use the arrow buttons:

- Select one or more of the available compounds or selected compounds. To select multiple compounds, hold the “*Ctrl*” key and click other compounds.
- Available or selected compounds are moved using one of the four buttons between the two windows.
  - The “>” arrow shifts the selected compound(s) to the right.
  - The “>>” arrow shifts all the compounds to the right.
  - The “<<” shifts all the compounds listed in the “*Selected Compounds*” box to the left.
  - The “<” shifts only selected compounds to the left.

You must enter the number of test runs and the duration of the test runs. If you have selected one of the Performance Specifications you can enter a “1” into the number of runs and the total duration of the tests in the test run duration. In addition, you must also create an entry for the reference test method(s) at the same location which will be used to evaluate relative accuracy of the CEM by the performance specification. You should enter the expected total test runs required for the RATA and the individual run durations.

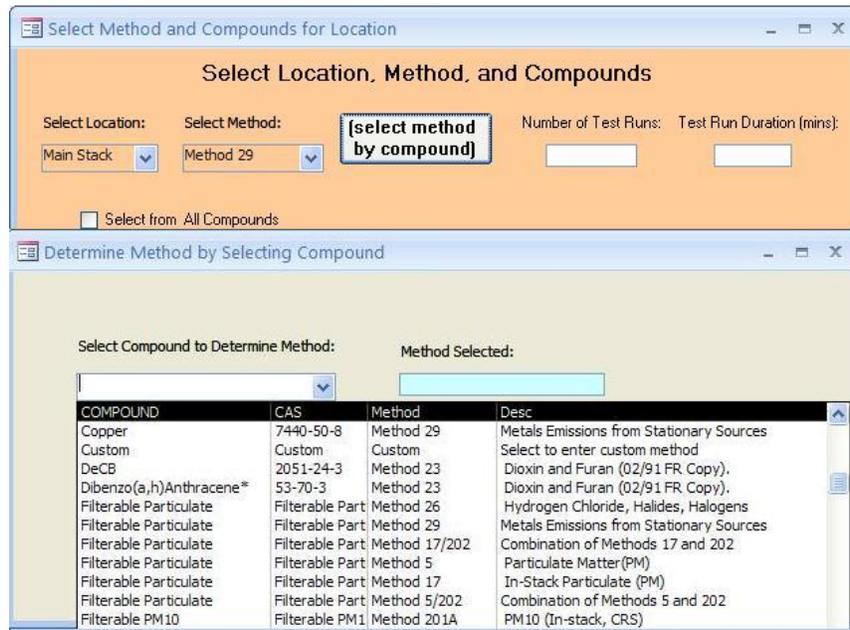


Figure 25 - Test Plan Locations/Methods Test parameter Insert (Enter by compound)

Rather than selecting the test method as described above, you may select the method from a list of compounds. By clicking the button “(select method by compound),” a window like the one shown in **Figure 25 - Test Plan Locations/Methods Test parameter Insert (Enter by compound)** is available. Scrolling down this list presents in alphabetical order all of the available pollutants, the test methods which may be used to measure these pollutants and a short descriptor of the test method. Selecting the pollutant and test method line will populate the method in the “*Method Selected*” field. Clicking in the “*Use Selected Method*” block will place the test method in the “*Select Method*” field. You will need to reselect the compound and any additional compounds from the available list as described above.

To complete the addition of a test method for the test location, you must enter the number of test runs which you propose and the proposed duration of the test runs. Clicking on “**Save Selected Items**” will populate the fields in item 2a. Clicking on “**Exit**” will return to item 2a without populating the fields. Once you have returned to item 2a with the populated method and pollutants, you can review, add or edit the fields “*Lb/Hr Limit*,” “*Num Test Runs*,” “*Test Run Duration*” and “*Comments*” without returning to the selection screen. You can revise the number of test runs, test run duration and comments directly in the form. Revisions of the Location, Target parameter and Test Method require deleting the row and reentering the information with one of the “**Add Target Parameters**” procedures described above. If you have already identified Emissions/Concentrations for the Location/Target Parameter/Test Method combination, you should delete these before deleting the row(s). To delete a row, move the cursor across the row until the cursor changes from a white arrow pointing up and to the left to a smaller black arrow pointing directly right across the row which you wish to delete. Select the whole row by clicking the left mouse button, and then either depress the delete key, backspace key or select delete after depressing the right mouse button.

The screenshot shows a software interface for selecting test methods and compounds. The main window is titled "Select Method and Compounds for Location" and contains several input fields: "Select Location:" (dropdown menu with "Inlet" selected), "Select Method:" (dropdown menu with "Custom" selected), a button labeled "[select method by compound]", "Number of Test Runs:" (input field with "1"), and "Test Run Duration (mins):" (input field). An orange sub-window titled "Custom Method Information" is overlaid on top, containing: "Custom Method Name:" (text input with "Method 320"), "Custom Method Description:" (text input with "CO- Instrumental"), and "Is this an Isokinetic or Manual Method:" (dropdown menu with "Yes" selected). At the bottom of the sub-window are "Close and Save" and "Exit without Saving" buttons. The main window also has "Exit" and "Save Selected Items" buttons at the bottom, along with a note: "Hold Ctrl or Shift to select multiple records".

**Figure 26 - Test Plan Locations/Methods Custom Method Information screen**

If the method you used is not listed in the drop down menu, you may be able to choose “*Custom.*” When the selection is made, the “*Custom Method Information*” window, **Figure 26** - Test Plan Locations/Methods Custom Method Information screen, will open. Advice and tips on using this feature can be found at:

[http://www.epa.gov/ttn/chief/ert/ertv4/customfeatures\\_ERT4.pdf](http://www.epa.gov/ttn/chief/ert/ertv4/customfeatures_ERT4.pdf). Likewise, if the pollutant(s) you are measuring are not listed, go to the link above for instructions. When you choose a custom method, you must enter a unique “*Custom Method Name*”. The “*Custom Method Description*” is optional. Select “*Yes/No*” to the required question of “*Is this an Isokinetic or Manual Method.*” Click on “**Close and Save**” to save the new method and return to the Parameter form, or “**Exit without Saving**” to return to the “*Parameter*” form without saving changes.

If you choose custom pollutant, you will be asked to enter the CAS number. The ERT provides a link to the National Institute of Standards and Technologies (NIST) Material Measurement Laboratory (MML) website where you may search for a CAS number and molecular weight. You should enter the CAS number including hyphens, a unique custom compound name (preferably one of the names listed on the NIST site) and molecular weight. Clicking on “**Close and Save**” will enter the custom pollutant in the “*Selected Compounds*” column. Clicking on “**Save Selected Items**” will cause the test location, test method and custom pollutant to populate one of the lines in item 2a. While the custom pollutant compound will be saved as one of the test parameters, it will not be saved as one of the available compounds in the “*Select Method and Compounds for Location*” menu. To use this custom compound at another location or with another method, you will have to complete the custom pollutant menu again.

- **2b. Please select the Emissions Units of Measure for each location:** Section 2b is for entering the units for reporting of the emissions.

Local	Method	Units of Measure	Corrected Analyte	Corrected %	Process Rate, Parameter
stack	Method 25A	lb/hr		0	
stack	Method 25A	ppm		0	
stack	Method 25A			0	

Record: 1 of 21 | No Filter | Search | Previous Page | Next Page

**Figure 27 - Test Plan Locations/Methods Emissions/Concentrations Item**

After adding one or more test locations in item 1 and adding the test methods and target analytes in item 2a you can enter the units for reporting the emissions in item 2b, shown in **Figure 27 - Test Plan Locations/Methods Emissions/Concentrations Item**. Emissions units which include process information are not available in this area, although this area allows you to pair the emission rate and the process rate parameter which are used to calculate a process rate based emissions value. Begin by clicking on “**Add Emissions/Concentrations Units**” and the window in **Figure 28 - Add Emissions/Concentrations Screen** will populate.

Select Method and Compounds for Location

Select Location, Method, and Emissions / Concentrations

Select Location - Method:  
Stack Exit - Method 1 - 4

Available:	Selected:	Corrected	%
grains/dscf corrected	grains/dscf corrected	0	
grams/hr	lb/hr	0	
grams/minute	lb/million BTU using O2	0	
lb/cf NG	mg/dscm	0	
lb/million BTU using CO2	ppm	0	
lb/minute			
mg/dscm corrected			
ng/dscm			
ng/dscm corrected			
percent(%)			
percent(%) corrected			
pg/dscm			
pg/dscm corrected			
ppb			
ppb corrected			
ppm corrected			
ppt			
ppt corrected			
ug/dscm			
ug/dscm corrected			

Hold Ctrl or Shift to select multiple records

Exit Save Selected Items

Figure 28 - Add Emissions/Concentrations Screen

Select a combination of test location and method in the “*Location – Method*,” field which combines values from numbers 1 and 2a above. Be sure to move the units you are using from the “*Available*” box to the “*Selected*” box on the right.

If the selected emission concentration in the “*Available*” box has the word “corrected” on the end of it, two prompts will occur in succession. To the first prompt, “*Enter Corrected Analyte (O<sub>2</sub> or CO<sub>2</sub>)*” for the concentration. To the second prompt, “*Enter Corrected Percentage (i.e. 7)*” for the concentration being corrected.

Once you entered all of the information, the only three columns that can be edited directly in the table are “*Corrected Analyte*,” “*Corrected %*” and “*Process Rate Parameter*.”

If one of the “*Units of Measure*” chosen is a pollutant emission rate, you may pair this emission unit with a “*Process Rate Parameter*” which has been entered in 6a of the “*Process/APCD*” tab. You must use one of the available parameters that are available on the drop down list and that have the same time units as the emission rate. If the correct parameter is not available, you should go to the “*Process/APCD*” tab to add the information required to create the correct parameter rate. For more detail on the creation of a process rate parameter, see the directions for [Process/APCD Screen](#), section 6a above.

The following is a description of the fields:

<b><i>Location:</i></b>	The choices which are available were those location names which were entered in Item 6. If the required location is missing, return to item 1 to add the location name required. This is required and will be used by the ERT during the process of entering test run data.
<b><i>Method:</i></b>	The choices which are available were those test methods which were entered in Item 2a. The field identifies the method used to measure the analyte emissions. This is also required by the ERT and will be used during the process of entering test run data.
<b><i>Emission/ Concentration:</i></b>	The emission concentration or mass rate that is being calculated.
<b><i>Correcting Diluent:</i></b>	O <sub>2</sub> or CO <sub>2</sub> .
<b><i>Correction %:</i></b>	The percentage of the analyte is corrected.
<b><i>Process Rate Parameter:</i></b>	One of the items from items from section 6a of the “ <i>Process/APCD</i> ” tab which includes a time unit. This parameter should be selected to pair with a test method having a unit of measure which includes the same time unit. Typically, the first listed parameter in section 6a is paired with a test method having lb/hr emission units. Process parameters other than listed in the first line of section 6 may be created if the emission limit has a unit of measure different from the default emission factor unit of measure.

## Regulations Screen

[Click to see video on Regulations entry.](#)

Test Plan

Test Plan Title: Birdsall - Clara Maass Medical Center (12-9137) Test Plan Date: 1/18/2013 Open Expanded

Facility/Tester Permit/SCC Locations/Methods Regulations Process/APCD Methods cont. Audit/Calibrations Schedule Reviewers Attach.

3. What is the specific purpose, Data Quality Objectives and Data Quality Indicators for the proposed testing?

Part 60 (NSPS)  NSR/PSD

Part 61 (NESHAP)  SIP

Part 63 (MACT)  Section 114

Part 65 (MACT)  State Rule

RATA  Other (describe:)

The purpose of the testing is to demonstrate compliance of each source with the standard for particulate matter per MMBTU of heat input stated in Table 1 to Subpart JJJJJJ of 40 CFR Part 63.

4. List all state and federal regulations that apply to the proposed testing: Add Regulation

Regulation Description (click to edit)	Compound	Unit of Measure	Limit
Particulate Matter per MMBTU of heat input - 40 C	Filterable Particulate	lb/million BTU using	0.03
40CFR60 Subpart FF (Coal Preparation Plants NS)	Opacity	percent(%)	20

5. Will the test results be used for other regulatory purposes (e.g., emission inventories, permit applications, etc.) beyond that stated above? If yes, explain.

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Figure 29 - Test Plan Regulations Tab

The Regulations screen shown in **Figure 29 - Test Plan Regulations Tab** has three sets of fields describing the purpose for the tests. Check all boxes that apply to the tests which are to be performed to identify the general regulatory purpose for which the test will be used. Use the text boxes to input detailed information on the test purpose, data quality requirements and regulations pertaining to the test.

- 3. What is the specific purpose, Data Quality Objectives and Data Quality Indicators for the proposed testing?** Ten check boxes are available to identify the general regulatory programs which form the primary reason(s) for performing the emissions test. Check all that apply. Use the text box to the right of the check boxes to provide additional information. This information would include details describing the purpose when the “Other” box is checked. The text box may also contain additional detail such as those pollutants that are of primary interest. This text box may also be used to identify the “Data Quality Objectives” (DQO’s) for the test, “Data Quality Indicators” (DQI’s) which will be collected, and the criteria which the DQI’s will be used to determine whether the test program met the DQO’s.
- 4. List all state and federal regulations that apply to the proposed testing:** The majority of source tests are conducted to demonstrate compliance with a Federal, State or local emission

limit. These emission limits are typically codified in a regulation or permit. The “**Add Regulation**” button is available to identify any state and federal regulations that apply to the emissions test. Click on the “**Add Regulation**” button to open the form shown in **Figure 30** - Test Plan Add Regulations for entering a new regulation data. Double click on a previously entered regulation description to edit the contents of an existing entry. The drop down list under “**Part SubPart**” on the **Test Plan Regulations** tab and the new regulations **Regulation Limits** form list the Federal regulations in Part 60, 61 and 63

**Figure 30 - Test Plan Add Regulations**

The fields are described as follows:

- Part-SubPart:** The regulatory citation which requires the test for the compound and specifies the identified limit. For example: 40CFR60 Subpart UUU.
- Regulation Description:** The default description of the selected Part-SubPart. For clarity and conformation you may also add a generic identifier for the regulatory citation. For example: NSPS for Mineral Calciners and Dryers. If the testing is not performed to demonstrate compliance with an existing regulation, you should provide a general description of the purpose for the test.
- Compound:** The regulated or targeted compound. Use the drop down list to select the regulated compound and the regulatory unit of measure. If the compound and/or unit of measure for the regulatory limit for the pollutant are not shown, you will need to exit this screen and go to the [Locations/Methods Screen](#) to enter the compound in section 2a and the units of the standard in section 2b.
- Unit of Measure:** The units of measurement for the compound within the regulation or the desired units used to describe the emissions. The units of measure are tied to the selection of the target compound.
- Limit:** The numerical value for the compound as expressed in the Unit of Measure.

- **5. Will the test results be used for other regulatory purposes (e.g., emission inventories, permit applications, ect.) beyond that stated above? If yes, explain:** List the secondary reasons for performing this emissions test. If known, list those pollutants that are of secondary interest. For example, determine emissions of CO, THC, VOC and condensable PM emissions for use in emissions inventory reporting and determination of fees.

**Note:** Pressing “Shift F2” will expand the currently selected text field to a larger window to allow for easier editing and will allow changes in the Font (size, style, Effects etc.).

## Process/APCD Screen

[Click to see video on Process-APCD entry.](#)

The screenshot shows the 'Test Plan' window with the 'Process/APCD' tab selected. The 'Test Plan Title' is 'Emissions Testing of Wood Chip Dryer 2' and the 'Test Plan Date' is '1/2/2014'. The window is divided into several sections:

- 6a. Enter the process data to be documented during testing. (Required before test data entry)**: A table with columns for Process Parameter, Process Rate, Pollutant Unit, and Measure.
 

Process Parameter: (click to view/edit)	Process Rate	Pollutant Unit	Measure
Anthracite Burned	Tons/hr	Lb	Tons
Maximum 6 min opacity measured	Percent/min		Percent
Carbon Monoxide concentration measured at breach	PPM/min		PPM
Wood Fed into Dryer	Tons/hr	Lb	Tons
Dryer Temperature At Outlet	Degree F/min		Degree F
- 6b. Enter the process lab data to be documented during testing.**: A table with columns for Analysis Required, Units, and Comments.
 

Analysis Required: (click to view/edit)	Units	Comments
Wood Moisture Content of feed material	percent	Comments... is this going to run over....
Wood Moisture Content of product	percent	
Wood density of feed material	lb/ton	
- 7a. Please give a brief description of the source (including control equipment) and attach source or process flow diagram:**: A text area containing the text: 'PROCESS DESCRIPTION Figure 2-1 illustrates the basic processing steps for OSB production. The steps are: Logs are slashed, debarked, cut into shorter lengths, and sliced into thin wafers.' An 'Attach File' button is present.
- 7b. Control Devices: (Required before test data entry)**: A table with columns for Control Device, Units, Target Value, and Comment.
 

Control Device: (click to view/edit)	Units	Target Value	Comment
FABRIC FILTER		0	
FABRIC FILTER - MEDIUM TEMPERATURE, I.E. 180F<T<25		0	
BOILER AT LANDFILL		0	

Buttons for 'Add Process', 'Add Lab', and 'Add Control Device' are visible. At the bottom, there are 'Previous Page' and 'Next Page' buttons.

**Figure 31 - Test Plan Process/APCD Tab**

This section is to enter process and Air Pollution Control Device (APCD) data.

- **6a. Enter the process data to be documented during testing:** Section 6a is where process data is documented. Process data is quantifiable information on operational parameters for the production unit or controls. Process data includes documentation of parameters that may be used after the test for compliance assurance monitoring, indicators that the facility was operating at representative operating conditions or indicators of the performance of installed control equipment. It might include fuel feed rate, average steam output, one or more temperatures of the process, scrubber pressure drop, scrubber water flow, ESP current or another measurable parameter. Some process activity information might be used to calculate the emissions limit, for

example x pounds of pollutant per ton of clinker. Process information might also be information required in a Title V permit. *Process data is required.* You can either type the information in the fields directly, or click the “**Add Process**” button. If there are no populated process parameter lines, you should go to the [Permit/SCC Screen](#) to select the SCC and associated process parameter for the tested unit. The first field is pre-populated and highlighted yellow, which means the ERT completed this field based on the SCC you selected or an activity indicator that you established when you selected the SCC. But if the information in a yellow field is incorrect it can be changed by returning to the Permit/SCC Screen where it was established. For example, if the activity information is not correct, returning to the SCC selection may show that the SCC had multiple default activity parameters and the one selected was incorrect. By changing the selection, the first process data parameter will change to the process units identified in the SCC selection list.

While the first line in process parameters list is populated from the SCC selection list, additional process parameters may be added by clicking on “**Add Process**” which will display the “**Process Information**” menu shown in **Figure 32**. This menu is identical to the menu used to populate the SCC activity parameter when no default parameter was established for that SCC.

The screenshot displays the 'Test Plan' software interface. The main window title is 'Test Plan' and the subtitle is 'Emissions Testing of Wood Chip Dryer 2'. The 'Test Plan Date' is set to 1/2/2014. The interface includes a navigation bar with tabs for Facility/Tester, Permit/SCC, Locations/Methods, Regulations, Process/APCD, Methods cont., Audit/Calibrations, Schedule, Reviewers, and Attach. The main content area shows a list of process parameters with columns for Process Parameter, Process Rate, Pollutant Unit, and Measure. A dialog box titled 'Process Information' is open, showing the following details:

- Process Parameter:** Maximum 6 min opacity measured
- Process Rate:** Percent/min
- Pollutant Unit:** (empty)
- Measure:** Percent
- Time Unit:** /min
- Material:** Maximum 6 min opacity
- Action:** measured
- Target Value Range:** Target Low: 0, Target High: 10
- Comments:** Opacity measured by Method 9 observer during Method 29 testing as required for establishing operating limit during permit period.

**Figure 32 - Test Plan Process/APCD Add Process Form**

To add or change the fields under the different column headings you must click in either the “*Process Parameter*” or the “*Process Rate*” columns. You will see a box like **Figure 32**. If the box is not visible, it may be hidden behind the test plan menu. By clicking on the test plan menu bar and moving it to a different location, you will see the “*Process Information*” menu.

Below is a description of the fields:

- Process Parameter:*** Process data parameter(s) documented during testing. Entries with a yellow background were pre-populated based on the SCC. Since the text is a combination of text from the Material and Action fields, you must enter or change text in those fields to change the text in this field.
- Process Rate:*** This is populated with a combination of the text entered in the Measure field and the Time Unit specified in the field to the right of the Measure field. As with the Process Parameter field, to change this field, you must change the text in the other fields. Process Information used to generate process based emissions (i.e. lb/Ton of Clinker) must use the same units specified for the emission rate time unit.
- Pollutant Unit:*** For a process base emission, this is the pollutant mass unit which will become the numerator unit (i.e. lb as in lb/Ton of Clinker). For process information that is not directly associated with mass emissions of a pollutant (such as a process temperature, reactant feed rate or opacity) no pollutant unit is required.
- Measure, Material, Action:*** These items are the same as were defined in the section for selecting the SCC. While a significant number of descriptors are provided in the drop down lists, almost all are primarily for creating an emission unit that combines an emission rate with a process rate. You may provide text which better describes the process parameter and the process rate information. For example the recording of stack opacity could be described by a Measure of “COM percent”, Time Unit of “/min”, Material of “Maximum 6 min opacity” and Action of “measured”.
- Target Low:*** The lower bound of the process data information. This may be an expected value.
- Target High:*** The higher bound of the process information. This may be an expected value.
- Comments:*** Any comments concerning the process data which would clarify what is being measured, how it is measured and for what purpose.

**Caution:** Clicking “Exit” will not save your entry. Click “Save and Exit” to save.

- **6b. Enter the process lab data to be documented during testing:** Section 6b is where process lab data is entered. List the process materials requiring lab analysis to determine some characteristic of feed, output or byproduct from process. Like section 6a, this is quantifiable information that details what is going on during testing (for example, feed material moisture content or the results of a proximate or ultimate analysis of the fuel, etc). You can directly enter information into the Units or Comments fields or click the “**Add Lab**” button to open a form for easy entry, as seen in **Figure 33 - Test Plan Process/APCD Add Lab Form**. Clicking in the “**Analysis Required**” field of an existing parameter will also open the form.

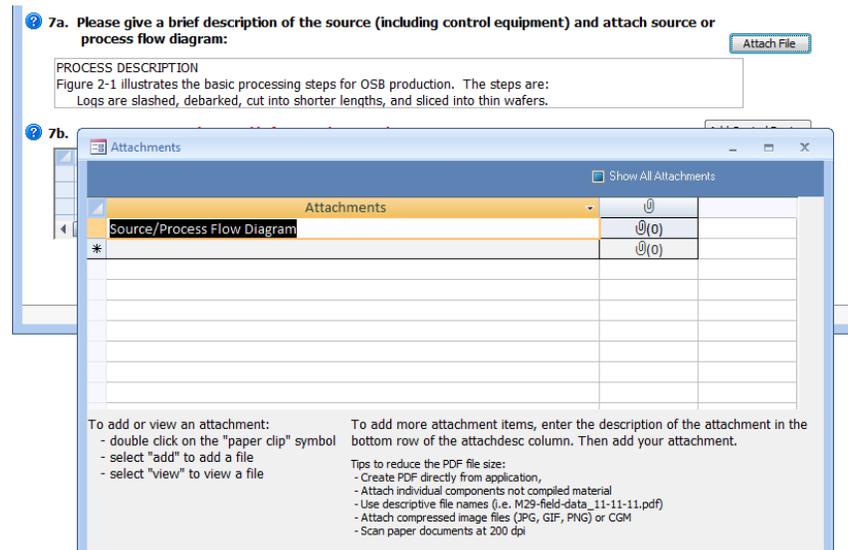
**Figure 33 - Test Plan Process/APCD Add Lab Form**

The fields are described as follows:

- Analysis Required:** A description of the lab analysis. This should include any specification describing the specific preparation and analytical finish rather than a generic term. For example: carbon content by ASTM D 3176 is preferred over carbon content.
- Units:** Units measured within the analysis.
- Comments:** Any comments related to the process lab data.

- **7a. Please give a brief description of the source (including control equipment) and attach source or process flow diagram:** Section 7a is where you will give a description of the source, a description of the control equipment, and attach at least one process flow diagram. It is recommended that you provide a brief description in this text area so that the description is available to a reviewer without opening an attachment and is produced in the printed test plan and test report. You should use attachments for complex or more detailed descriptions and diagrams.

You may submit multiple attachments.



**Figure 34 - Test Plan Process/APCD Attach File**

To attach a file, click on the “**Attach File**” button. Double click on the “*paperclip*” icon to open the “**Attachments**” screen, as seen in **Figure 34**. Click the “**Add**” button to add a file as an attachment.

Once a file has been added as an attachment, click on “**OK**” to return to the “**Source/Process Flow Diagram**” screen. The number of attachments will show to the right of the paperclip.

(For more information concerning attachments, see [Chapter 4: Attachments Screen.](#))

**Note:** When an attachment is associated with an item the “**Attach File**” button will turn blue.

- 7b. Control Devices:** Section 7b is where you will list all emissions control devices in order of process flow. An extensive list of process controls and/or add-on control devices are available using the dropdown list. To enter a control device, you can either click the first blank cell in the “**Control Device**” column or click on the “**Add Control Device**” button. You should choose one of the control devices from dropdown lists unless a generic description of the installed control is not present. If a control is not on the list, you can type the name of the device directly into the field. You should ensure that you list all control devices which influence the emissions of the pollutants being quantified during the test. All devices you select in section 7b should also be described in section 7a with additional information to explain details which cannot be entered in section 7b. You should also insure that all parameters required to document the performance of each control device are listed in item 7a. You should identify the most critical APCD performance monitoring parameter that will be used for continuous compliance demonstration, describe the parameter in the comments field and provide the units of measure for that parameter. An existing entry can be edited by clicking in any column except the Control Device column. As described earlier, clicking in the “**Control Device**” column will open the “**Air Pollution Control Device Information**” screen.

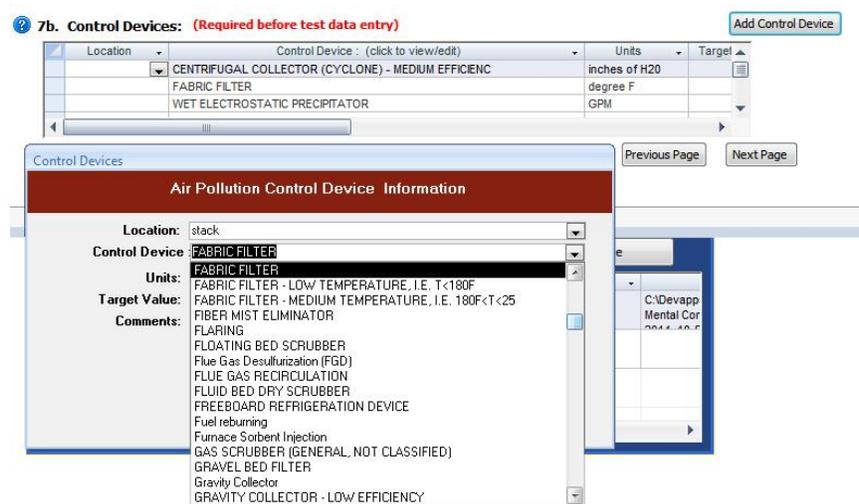


Figure 35 - Test Plan Process/APCD Control Devices editing options

The fields are described as follows:

- Location:** The selection of inlet or stack for location of APCD control device.
- Control Device:** A name or description of the control device as listed in the pull down list.
- Units:** Units of measure for the most critical operating parameter for the control device.
- Target Value:** The desired or expected value for the control device operating parameter.
- Comments:** Any comments pertaining to the control device, explanation of the operating parameter or method of collecting the operating parameter.

## Methods Continued Screen

Click to see video on Methods, Audit, Schedule, Signature and Attachments entry.

The screenshot shows a web-based form titled "Test Plan" with the following details:

- Test Plan Title:** Emissions Testing of Wood Chip Dryer 2
- Test Plan Date:** 5/25/2009
- Navigation Tabs:** Facility/Tester, Permit/SCC, Regulations, Process/APCD, Locations/Methods, **Methods cont.**, Audit/Calibrations, Schedule, Signatures, Attach.
- Question 8:** "Describe below or attach complete documentation of the test method followed including all modifications and/or deviations. If major modification and/or alternative methods requested, attach documentation of request AND approval, including dates." Includes an "Attach File" button and a text area with the following text: "Instead of using the procedures prescribed in NC rule 25NC7725-3, we propose using a combination of Method 202 and Method 315 procedures. These include purging with Nitrogen and the use of Methelene Chloride as the extracant. In addition, we propose to use acetone as a finish solvent following the Methelene..."
- Question 9:** "Does the proposed sampling location meet the minimum EPA Method 1 criteria for acceptable measurement sites? Please list below or attach the supporting documentation." Includes "Yes" and "No" checkboxes (with "No" checked) and an "Attach File" button.
- Question 10:** "Has absence of cyclonic flow been verified per EPA Method 1 (Section 2.4)? If no, absence of cyclonic flow must be verified prior to testing. If yes, please attach supporting documentation." Includes "Yes" and "No" checkboxes (with "No" checked) and an "Attach File" button. The text area contains: "Cyclonic flow will be determined as part of the initial velocity traverse".
- Question 11:** "Select the method that will determine the oxygen concentration :". A dropdown menu is set to "M3A-instrumental".
- Buttons:** "Next Page" at the bottom right.

Figure 36 - Test Plan continued tab

This screen is the continuation of the “Locations/Methods” screen.

- 8. Describe below or attach complete documentation of the test method followed including all modifications and/or deviations:** In this section, it is suggested that the promulgation date of any specified test method be identified. Test methods which are not readily available free on the internet should be attached to the ERT for use by people reviewing the test plan or test report. If modifications and/or alternative methods are being proposed or were used, you must attach a document describing the proposed modification to the test plan and a copy of the request **AND** approval (including dates) to the test report. If the modification/alternative method was approved verbally by a regulatory agency, the name and date of the approval should be included. Written formal approval should be attached using the “**Attach File**” button. Test methods that are different from those published in the *Federal Register* should also be attached. Follow the steps in Item 7a to attach a file.
- 9. Does the proposed sampling location meet the minimum EPA Method 1 criteria for acceptable measurement sites:** In this section, answer the question about Method 1 criteria by checking “yes” or “no”. If Method 1 criteria are not met, explain why the methods used at the sampling location provide a representative sample and document any approval, as applicable. To attach a file, click on “**Attach File**” and follow the steps in Item 7a.
- 10. Has absence of cyclonic flow been verified per EPA Method 1 (Section 2.4):** In this section, answer the question about cyclonic flow by checking “yes” or “no.” This field is for the documentation of the absence of cyclonic flow. If the “no” checkbox has been selected, enter

documentation of why and approval, as applicable, or attach documentation and approval by clicking on “**Attach File**” and following the steps in Item 7a.

- **11. Select the method that will determine the oxygen concentration:** If flue gas characterization is for molecular weight purposes only, you may select:

**Method 2:**

***M2- assign  
29.0 Mol. Wt:*** Ambient air, assign a molecular weight of 29.0 (per Method 2).

**Method 3:**

***M3- mol Wt.Orsat  
or Fyrite:*** Molecular weight only, Orsat or Fyrite.

***M3-assign 30.0 Mol.  
Wt. combustion  
source:*** Combustion source, assign 30.00 for molecular weight.

***M3 – CO<sub>2</sub> or O<sub>2</sub>  
and Stoichiometric  
calc:*** Using CO<sub>2</sub>, O<sub>2</sub> or stoichiometric calculation

***M3A:*** Instrumental

***M3B:*** Using Orsat emission rate correction factors

## Audit/Calibrations Screen

Click to see video on Methods, Audit, Schedule, Signature and Attachments entry.

**12. Do any of the proposed test methods require analysis of EPA audit samples? If yes, you must contact an AASP to arrange for the purchase and delivery of an audit sample.**  Yes  No

**13. Has all testing equipment been calibrated within the past 12 months? If no, please explain.**  Yes  No

**14. Will all calibration gases be certified by EPA Traceability Protocol procedures? If No, describe certification procedure below.**  Yes  No  N/A

**15. Is a dilution system (via EPA Method 205) proposed?**  Yes  No  N/A

**16. If applicable, list the expected calibration gas concentrations for all proposed instrumental test methods. Include as much information as is known at this time.**

CyID	Compound/Analyt	CertProcedure	CertVal	UncertainPerce	CertDate	ExpDate
Air-CC47492	Zero Air		0	0	5/11/2006	
CO2-CC-81020	CO2-O2	G1	5.08	1	5/26/2006	5/26/2009
CO2-SG9133713BAL	CO2-O2	G1	10.92	1	1/24/2005	1/24/2008
CO2-XC025114B	CO2-O2	G1	16.85	1	3/10/2004	3/8/2007

Record: 1 of 10 | No Filter | Search

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Figure 37 - Audit/Calibration tabError! Reference source not found.

The “*Audit/Calibrations*” screen is for data relating to the test method and the calibration of the testing equipment.

- **12. Do any of the proposed test methods require analysis of EPA audit samples:** The test method should indicate whether or not audit samples are required. Select “*Yes*” or “*No*.”
- **13. Has all testing equipment been calibrated within the past 12 months:** It is expected that your response to this question will be “*Yes*.” If the answer is “*No*,” please use the text box for the explanation. You can attach calibration documentation in the “*Attachments*” tab of the ERT.
- **14. Will all calibration gases be certified by EPA Traceability Protocol procedures:** If the answer is “*No*”, use the text box for the explanation. If the answer is not applicable, select “*N/A*.”
- **15. Is a dilution system (via EPA Method 205) proposed:** Select “*Yes*,” “*No*” or “*N/A*.”
- **16. If applicable, list the expected calibration gas concentrations for all proposed instrumental test methods:** Input information on the calibration gases to be used for any instrumental methods. For the test plan, you may enter incomplete information to provide the test plan reviewer the gases that you intent to use and the approximate concentrations. However, once the test is completed, this Item MUST be completed accurately since the instrumental test methods data processing uses the “*CertValue*” in calculating the concentrations.

The following is a description of the fields:

<b>CylID:</b>	This is the cylinder ID provided by the provider and listed on the calibration certificate. For cylinders having more than one calibration gas, input the cylinder once for each gas and include a prefix or suffix with the cylinder ID.
<b>Compound (Analyte):</b>	Input the gas name for the compound with the indicated certification value.
<b>Certification Procedure:</b>	Give the certification procedure used.
<b>Certified Value:</b>	Input the certified value of calibration gas.
<b>Uncertain Percent:</b>	Input the percent uncertainty of the gas from the certificate.
<b>CertDate:</b>	Date the calibration gas was certified.
<b>ExpDate:</b>	Date the certification of calibration expires.

## Schedule Screen

[Click to see video on Methods, Audit, Schedule, Signature and Attachments entry.](#)

Test Plan

Test Plan Title: \* Emissions Testing of Wood Chip Dryer 2 Test Plan Date: \* 5/25/2009

Facility/Tester Permit/SCC Regulations Process/APCD Locations/Methods Methods cont. Audit/Calibrations **Schedule** Signatures Attach.

17. What is the proposed test schedule?

Field set up will be conducted on Aug 15, 2005.  
Testing to be conducted on Aug 16, 2005.

18. Additional comments:

Scaffolding to be installed by plant the week prior to testing.

19. Required Personal Protection Equipment:

Safety Shoes, Hardhat, Safety Glasses, Ear Plugs, Gloves.

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**Figure 38 - Test Plan Schedule Tab**

The Schedule screen concerns the scheduling of the test and any preparations for that test.

- **17. What is the proposed test schedule:** This field is primarily to advise the regulatory authority and facility the dates that emissions testing will be performed, including any set up dates.

- **18. Additional comments:** Provide any additional comments about the test.
- **19. Required Personal Protection Equipment:** This field is primarily to advise the regulatory authority of the type of personal protective equipment that will be required for them to use to access the sampling location and any other locations that are associated with the performance of the test program. It also serves to inform the facility of the source tester's knowledge of the required protective equipment they will use during the source test program.

## Reviewers Screen

[Click to see video on Methods, Audit, Schedule, Signature and Attachments entry.](#)

Test Plan

Test Plan Title: Ash Grove Cement 4544 Test Plan Date: 2/28/2012

Facility/Tester Permit/SCC Regulations Process/APCD Locations/Methods Methods cont. Audit/Calibrations Schedule Reviewers Attach.

**Permitted Facility Representative**

Name: Gerald Brown  
Email: Gerald.Brown@ashgrove.com  
Title:  
Company: Ash Grove Cement Company  
Date Reviewed:

**Testing Company Representative**

Name: David Bagwell  
Email: dbagwell@horizonengineering.com  
Title: Managing Member  
Company: Horizon Engineering, LLC  
Date Reviewed: 4/24/2012

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Figure 39 - Test Plan Reviewers Tab

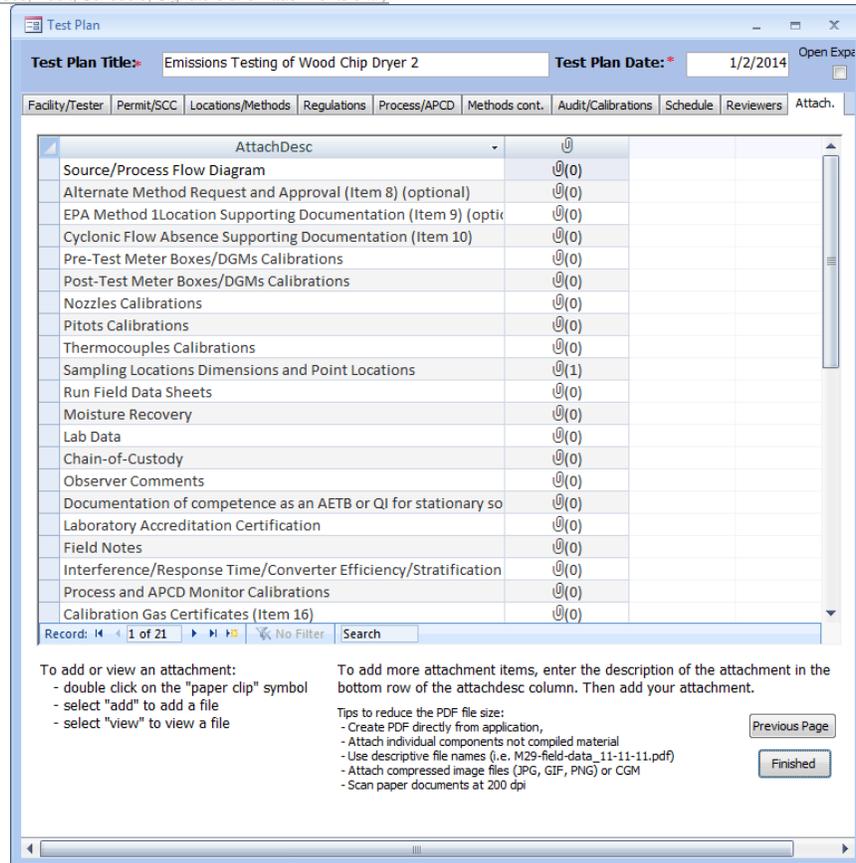
The “**Reviewers**” screen obtains data for the Reviewers of the test. All the fields on this screen are required. The two representative blocks are as follows:

- **Permitted Facility Representative:** The person authorized to represent the facility being tested.
- **Testing Company Representative:** The person authorized to represent the testing company.

**Note:** This is NOT an electronic signature!

## Attachments Screen

Click to see video on Methods, Audit, Schedule, Signature and Attachments entry.



**Figure 40 - Test Plan Attachments Tab**

The Attachments screen allows you to attach any documentation pertaining to the Test Plan.

### *Adding an Attachment*

Several of the questions in the test plan section allow the user to import files as attachments to the test plan. If you added an attachment in one of the earlier tabs, the attachment tab will show a number “1” (or however many attachments were added) next to the paperclip in parentheses.

To add attachments to an existing named documentation area, double click on the paperclip. A window like that in **Figure 41** will open. If files were attached previously, the file name will be listed in the field. If no files were attached, the field will be blank and all but the “Add...” button will be faded. In both situations, to add an attachment, click on the “Add...” button to display a Windows file selection menu.

In this screen you can add additional attachments by double clicking the paperclip next to the description that applies. If your type of attachment isn’t specifically listed, follow these steps:

1. Click the empty lower left hand cell and add a description.
2. Double click the paperclip in the cell to the right of the description.
3. Follow the prompts to add your attachment(s).

These steps can be repeated if you have multiple types of attachments.

**(Note: Many of the requested files will be part of the test report and are not required or available at the time the test plan is prepared.)**

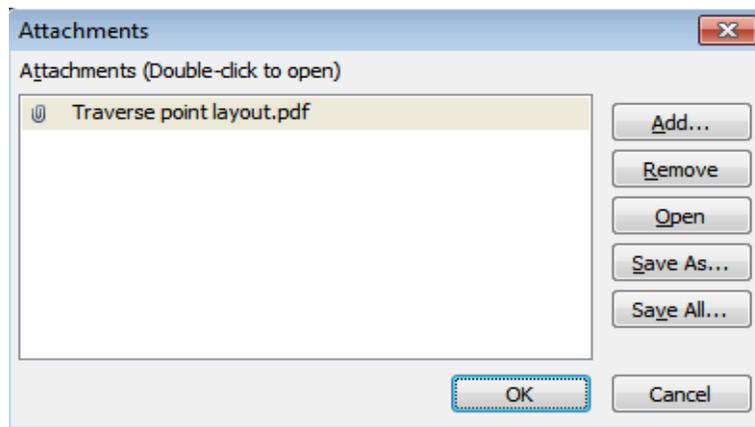


Figure 41 - Test Plan Attachments Options

### Other Attachment Options

Click “OK” to save the changes and return to the “*Test Plan*” attachment screen. Click “Cancel” to return to the “*Test Plan*” attachment screen without saving the changes. The number of attachments will be beside the paper clip image.

**Note** When one or more files are attached to a documentation area, when you double click on the paperclip a window like that in **Figure 41** will open. In addition to adding attachments as described above; one can click on one of the file names and then click on “Open”, “Remove”, “Save As...” or “Save All...” to open, remove or save the selected attachment(s). Simply follow the prompt.  
**Note:** If you cannot see the paperclip image, it is likely that the PDS you are using was created by older ERT version. The old PDS files have an OLE object field instead of an attachment file type. As a result; PDS file sizes in ERT version 3 are greater than ERT version 4. In addition, very large attachments may not be able to be viewed because of memory constraints. If so, revise the PDS file to the ERT version 4 file type which with an .accdb extension. If you create a new PDS you will see the paper clips. If the existing ERT version 3 PDS is extensive and was created in, you can change the PDS to a version 4 format by: 1) Save all the attachments in the old ERT file using a descriptive file name; 2) Create a new blank PDS using ERT version 4; 3) Close ERT, open MS Access and load the blank PDS; 4) Delete all the tables in the PDS except “tblAttachments;” 5) In the Access menu, select “External Data” then select “Import” “Access”; 6) Use “Browse” to locate the ERT version 3 PDS; 7) Specify the importing of all tables, queries, forms; 8) Click “OK”; 9) Select the “Select All” button; 10) Deselect “tblAttachments” and click “OK”; 11) Close Access and open the new PDS.

## Chapter 5: Test Data

### Run Data

[Click to see video on Single Sample Train header & point data entry.](#)

**Figure 42 - Run Data Details Screen**

The ERT separates methods into three basic categories – single train isokinetic/manual methods, paired train manual methods and instrumental methods. Currently, only the paired sampling train form mercury by Method 30B can be documented in the ERT. For a single train isokinetic/manual method, to complete the “*Test Data*” section you may either import the data from a spreadsheet or manually enter the data. For a paired train manual method and an instrumental method, you must enter the data manually.

If you have your field data organized in a spreadsheet format consistent with the template described at <http://www.epa.gov/ttn/chief/ert/index.html#spreadsheets> you can import the majority of information for the “*Header Data*” and “*Point Data*” tabs for single train manual test methods as follows:

- Click “**Run Data**” in the “*Test Data*” area of the “*ERT- Main Menu*” to bring up the “*Run Data Details*” Screen, as in **Figure 42**.
- Click on the “**Add New Run Data**” button to add data.



**Figure 43 - Import from Spreadsheet Option Dialog**

This brings up a spreadsheet option dialog. Click “**Yes**” button to import the data from a spreadsheet (for more information, see [Add New Run Data - Spreadsheet Import](#)). Click the “**No**” button to manually add data directly into the ERT (for more information, see [Add New Run Data – Directly](#)).

## Add New Run Data - Spreadsheet Import

[Click to see video on Single Sample Train header & point data entry.](#)

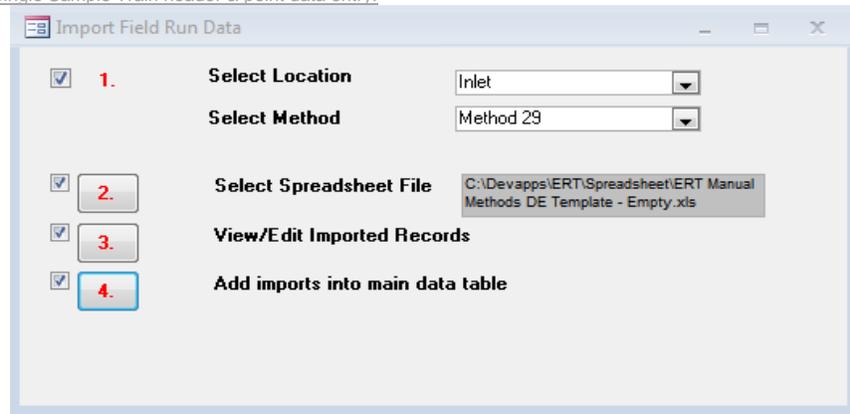


Figure 44 - Import Field Run Data Window

To import single train field data, it must be entered into the sample field data spreadsheet that is consistent with the template provided on the website where you obtained the ERT.

- **Step 1:** Select the *location* and the *method* from the drop down lists, as in **Figure 44**. A green checkmark will automatically appear in the box to the left of the red number 1 after the selection.
- **Step 2:** Click the # 2 and select the spreadsheet in the browse window, then click “OK” or “Open” to select the spreadsheet. The file path will appear beside step 2 “*Select Spreadsheet File*”, as shown in **Figure 44**.
- **Step 3:** Click the # 3 to view the imported data. You will see two tables as in **Figure 45 - View Imported Data Windows**. One table is the header data from the spreadsheet and one table is the point data from the spreadsheet.

Review and edit the data in these windows. Click on the “X” in the top right corner of each window to close them when you have finished your review.

Location	Method	RunNumbe	RunDate	JobNumbe	Personne	Pb	Pstati	FilterNum	FilterNum2	FilterNum3	ReagBo	Umbri
Inlet	Method 29	1	1/12/2011	0		29.92	0.38	0	0	0	0	0
Inlet	Method 29	2	1/12/2011	0		29.92	0.38	0	0	0	0	0
Inlet	Method 29	3	1/13/2011	0		29.92	0.38	0	0	0	0	0

Location	Method	Run #	Job #	Run Date	Poi	Begii	Er	Clock	Gas Met	Velocit	Orifice Pres	D	Ora. Pres	Ac	Stack
Inlet	Method 29	3	0	1/13/2011	A1	0	12	7:10:00 AM	277.1	0.95			1.9		1.9
Inlet	Method 29	3	0	1/13/2011	A2	12	24	7:22:00 AM	286.6	0.94			1.88		1.88
Inlet	Method 29	3	0	1/13/2011	A3	24	36	7:34:00 AM	296.2	0.95			1.9		1.9
Inlet	Method 29	3	0	1/13/2011	A4	36	48	7:46:00 AM	305.7	0.89			1.78		1.78
Inlet	Method 29	3	0	1/13/2011	A5	48	60	7:58:00 AM	315.3	0.74			1.48		1.48
Inlet	Method 29	3	0	1/13/2011	A6	60	72	8:10:00 AM	323.9	0.71			1.42		1.42
Inlet	Method 29	3	0	1/13/2011	A7	72	84	8:22:00 AM	332.4	0.74			1.48		1.48
Inlet	Method 29	3	0	1/13/2011	A8	84	96	8:34:00 AM	341	0.73			1.46		1.46
Inlet	Method 29	3	0	1/13/2011	A9	96	108	8:46:00 AM	349.5	0.61			1.22		1.22
Inlet	Method 29	3	0	1/13/2011	A10	108	120	8:58:00 AM	357.3	0.49			0.98		0.98
Inlet	Method 29	3	0	1/13/2011	B1	120	132	9:27:00 AM	364.6	0.95			1.9		1.9
Inlet	Method 29	3	0	1/13/2011	B2	132	144	9:39:00 AM	374.4	0.95			1.92		1.92
Inlet	Method 29	3	0	1/13/2011	B3	144	156	9:51:00 AM	383.7	0.94			1.88		1.88
Inlet	Method 29	2	0	1/13/2011	B4	156	168	10:03:00 AM	392.2	0.78			1.56		1.56

Figure 45 - View Imported Data Windows

- **Step 4:** Click the # 4 to add the imported data into the main data tables.
- **Step 5** – Click “OK” on the data imported successfully dialog and then close the “*Import Field Run Data*” window.

## Add New Run Data – Directly

[Click to see video on Single Sample Train header & point data entry.](#)

Figure 46 - Enter New Run Key Data Window

Run data do not have to be imported from spreadsheets. They can be manually entered directly into the ERT “*Run Data Details*” screens. To do this:

- Click “Add New Run Data” from the “*Run Data Details*” window (see **Figure 42** - Run Data Details Screen). **Figure 42 - Run Data Details Screen**.
- Click “No” from the import from spreadsheet option dialog (see **Figure 43** - Import from Spreadsheet Option Dialog). You will be prompted to enter a location – method, run number, and run date for the run data to be inputted.
- Select the “*Location – Method*” from the pick list.
- Enter the “*Run Number*”.
- Enter the “*Run Date*”.
- Click the “Add Run Data” button to save data, or click “Exit without Adding Run” to return to “*Run Data Screen*” without saving data.
- For both single train and paired train manual or isokinetic methods, you must repeat this process until all test runs have been added. For instrumental methods, you can add additional runs up to the number specified in the test plan from the “*ITM Run Results*” tab of the “*Run Data Details*” screen. Adding runs from the “*ITM Run Results*” tab will copy a significant amount of calibration and test setup information to the created runs.

Once the location, method, run number and date have been entered, you must find that run under the drop down list called “*Select Location – Method – Run*” (highlighted in yellow) to enter more information or view that run. See the “*Selecting Locations / Methods / Runs*” section.

This will add the key information for the run data to be input. The display will then show either the “*Run Data Details*” screens for an isokinetic run or an “*Instrumental Method*” run depending on the method selected.

### Correcting Run Data Entry Information

Incorrect entry of test data information can be corrected either by deleting the incorrect runs, changing the run numbers associated with one or more runs, or changing the date associated with one or more runs. The following three sections describe the procedures to perform these corrections.

### Delete Run Data

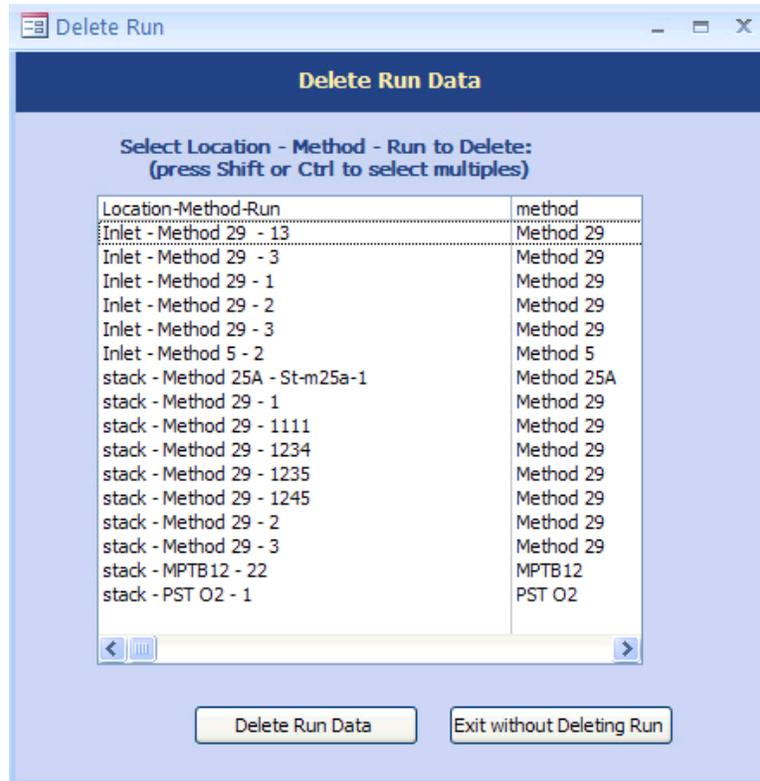


Figure 47 - Delete Run Window

This will delete all of the runs and lab data for the selected run.

- Click the “**Delete Run Data**” button from the “*Run Data Details Screen*”.
- Select the “*Location – Method – Run*” from the pick list.
- Click the “**Delete Run Data**” button to permanently delete the data and return to the “*Run Details*” screen. Click “**Yes**” on the delete confirmation dialog.
- Click on “**Exit without Deleting Run**” to keep the data and return to the “*Run Details*” screen. You will be prompted to confirm the deletion.

### Change Run Number

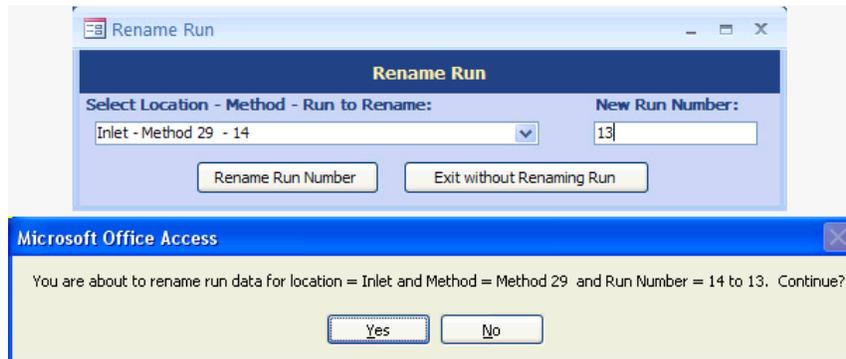


Figure 48 - Rename Run Window with Prompt

This will change the number for the selected run.

- Click the “**Change Run Number**” button on the “*Run Data Details*” screen.
- Select the “*Location – Method – Run*” from the pick list.
- Enter the new run number.
- Click the “**Rename Run Number**” button. You will be prompted to confirm the renaming. Click “**Yes**” on the rename confirmation dialog to save the new run number, receive confirmation message of the change, and return to the “*Run Data Details*” screen. Click “**No**” to return to the “*Change Run Number*” window.
- Click on the “**Exit without Renaming Run**” to return to the “*Run Data Details*” screen without saving changes.

### Change Run Date

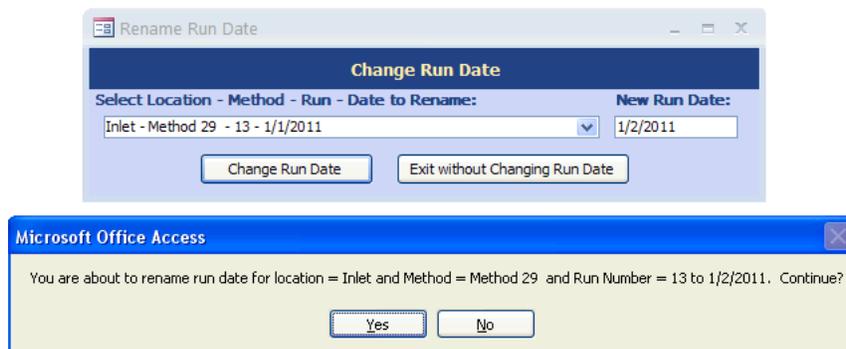


Figure 49 - Change Run Date Window with Prompt

This will change the date for the selected location – method – run - date.

- Click the “**Change Run Date**” button from the run data details screen.
- Select the “**Location – Method – Run – Date**” from the pick list.
- Enter the new run date.
- Click the “**Change Run Date**” button. You will be prompted to confirm the renaming. Click “**Yes**” on the rename confirmation dialog to change the date and return to the “**Run Data Details**” screen. Click “**No**” to return to the “**Run Date**” window without saving.
- Click the “**Exit without Changing Run Date**” to return to the “**Run Data Details**” screen without saving changes.

### Selecting Locations / Methods / Runs

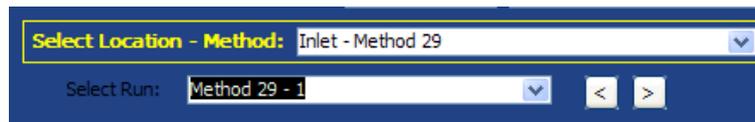


Figure 50 - Select Run Data

This is how you view the data for the different runs when you are on the Run Data Detail screens.

- Select the “**Location – Method – Run**” from the pick list.
- Click on the “<” or “>” button to scroll through runs of selected locations and methods. The “**Method Setup**” tab will be the same for all runs. The effects of scrolling through runs can be seen on the other tabs. Calculations made on 0 values will result in a field with #Error.

Selecting either “<” or “>” will change the run number in the field to the left of the symbols. In addition to changing the run number, changes in the run data details entered into the most of the screens below the run identifier are presented.

## Isokinetic/ Measured Method Test Data

Click to see video on Single Sample Train header & point data entry.

Run Data Details

Facility: Lone Star Industries, Inc dba Buzzi Unicem USA Pty

Permitted Source ID/Description: E-67 Kiln 1

Select Location - Method: Cooler Stack - Method 5

Add New Run Data Delete Run Data

Select Run: Method 5 - 111

Change Run Number Change Run Date

Method Setup Header Data Point Data Lab Data Sampling/Stack Data Results Cyclone Cut Size Emissions

Compounds for this Location / Method: View / Edit Location Information

Location	Target Parameter	Lb/Hr Limit	Test Method	Num Test Runs	Test Run Du
Cooler Stack	Filterable Particulate	0	Method 5	3	60

Record: 1 of 1

Add Target Parameters

Emissions / Concentrations for this Location / Method:

Local	Method	Emission/Concentrat	Corrected Anal	Corrected %	Process Rate, Parameter
Cooler S	Method 5	lb/hr		0	
Cooler S	Method 5	grains/dscf		0	

Record: 1 of 2

Add Emissions/Concentrations

Figure 51 - Run Data Details Screen for Isokinetic/Measured Methods

Depending on the method selected, the ERT will display different run data details tabs. For instrumental methods, go to the [Header Data Screen](#) section below. For single train Isokinetic methods, the tabs include:

- “Method Setup”
- “Header Data”
- “Point Data”
- “Lab Data”
- “Sampling/Stack Data Results”
- “Cyclone Cut Size”
- “Emissions”

You can import field data information for up to nine isokinetic test runs from a spreadsheet (see [Add New Run Data - Spreadsheet Import](#)) or manually enter the information into the appropriate screens. Importing data from spreadsheets populates only data for the header data tabs and the point data tabs, to produce the emissions calculations users are required to enter the lab data by clicking on the “Lab Data” tab. For paired train manual methods, go to [Header Data Screen](#) section below.

## Method Setup Screen

The screenshot shows the 'Run Data Details' window with the 'Method Setup' tab selected. The facility is 'Lone Star Industries, Inc dba Buzzi Unicem USA Pty' and the permitted source is 'E-67 Kiln 1'. The location is 'Cooler Stack' and the method is 'Method 5'. The run number is 'Method 5 - 111'. Below this, there are two tables:

**Compounds for this Location / Method:**

Location	Target Parameter	Lb/Hr Limit	Test Method	Num Test Runs	Test Run Du
Cooler Stack	Filterable Particulate	0	Method 5	3	60

**Emissions / Concentrations for this Location / Method:**

Local	Method	Emission/Concentrat	Corrected Anal	Corrected %	Process Rate, Parameter
Cooler S	Method 5	lb/hr		0	
Cooler S	Method 5	grains/dscf		0	

**Figure 52 - Isokinetic Method: Method Setup Tab**

The Method Setup screen contains a common set of fields for all three categories of test methods. The fields in this section will be pre-populated based on information entered in the test plan. However, they can be modified:

- **View / Edit Location Information:** Allows you to revise the test location information supplied during the test plan development (see **Figure 22** - Test Plan Locations/Methods Location Edit and Insert options).
- **Add Target Parameters:** Allows you to add target parameters for this run at this location/method (see **Figure 23** - Test Plan Locations/Methods Test Parameter for more information).
- **Add Emissions/Concentrations:** Allows you to add emissions/concentrations for this run at this location/method (see **Figure 27** - Test Plan Locations/Methods Emissions/Concentrations Item for more information).
- **Delete Target Parameters or Emission/Concentrations:** Highlight the row of the emission/concentration by clicking on the gray cell to the left of the column named “**Location**” and press the keyboard “**Delete**” button. When you are in the correct column, the cursor will change from a white arrow pointing up and left (↖) to a black arrow (➡) pointing right.

- **Delete Process Rate, Parameter:** To delete the process rate, parameter you must block all of the text in the field and then press the keyboard “Delete” button. It should be noted that the process rate parameter should only be associated with an emission rate and the time units (hr, min, sec) should be the same for both the emissions rate and the process rate.
- **Change Process Rate Parameter:** To add or change the process rate parameter, click within the field and then on the down symbol (▼) to reveal the drop down list of available process parameters. You should choose a process parameter only for emissions rates that have the same time units as the emissions rate.

## Header Data Screen

Click to see video on Single Sample Train header & point data entry.

The screenshot displays the 'Run Data Details' window for 'Method 29', 'Run Number: 1', and 'Run Date: 12/23/2004'. The facility is 'Environ Mental Condoous Furniture Co.' and the permitted source is 'DR2 Dryer 2'. The location is 'stack - Method 29'. The interface is divided into several sections:

- Method Setup:** Includes fields for Method (Method 29), Run Number (1), and Run Date (12/23/2004).
- Equipment ID:** Fields for Dry Gas Meter, Control Console, Umbilical, Stack TC, Tedlar Bag, Orsat Pump, Probe/Pitot, and Nozzle.
- Calibration:** Fields for Y (0.991), DH@ (2.05), Cp (0.84), Dn (0.297), Ambient Pb (30.04), Pstatic (-0.18), and Temperature.
- Checks:** A table for Pre, Mid, and Post checks including Vacuum, Leak Check Total Volume (0.002), Leak Rate, Pitot, Nozzle, and Stack TC.
- Filters:** Fields for FilterNum 1 (12), FilterNum 2 (13), and FilterNum 3.
- Concentrations:** Fields for % CO2 (0 - User Entered) and % O2 (13.2).
- Defaults:** Fields for tstd (68), Pstd (29.92), % CO (0), Fuel Type (Wood), Fd (9240), Fw, and Fc (1830).
- Other:** Fields for Micromanometer ID and Sensitivity.

Figure 53 - Single Train Isokinetic Method: Header Data

Figure 54 - Paired Train Manual Method: Header Data

Most of the components in the “*Header Data*” tab are common between the single train and paired train sampling methodologies. The information for the single train may be imported from spreadsheets. The information for both methodologies may be entered directly into the fields. **Figure 53** shows the layout of the single train or isokinetic train “*Header Data*” tab. **Figure 54** shows the layout of the paired train “*Header Data*” tab. Below are descriptions of the fields for both methodologies. Fields present in only one methodology will be identified.

***Analytical Set Up:***

The analytical Set up area is only present in the paired train sampling methodology. Information included in the “*Analytical Set Up*” area provides the critical parameters the analyst established during the initial instrument calibration in preparation for the analysis. Except for the “*Run Technician*” name every data element is used in the acceptance assessment of the sample results.

***Lab Reported MDL:***

The laboratory must establish their minimum detection limit (MDL). Method 30B requires that the MDL must be determined at least once for the analytical system using an MDL study such as that found in section 15.0 to Method 301.

***Low Point of the Calibration Curve:***

This is the lowest mass which the technician selects for calibration of the analytical instrument. Method 30B states that the lowest point of the calibration curve should be five and

preferably ten times the MDL. Since Method 30B includes an acceptance criterion that a valid analysis result must be within the calibration range, the low point of the calibration curve establishes the minimum analytical result which meets the acceptance criteria.

***High Point of the Calibration Curve:***

This is the highest mass which the technician selects for calibration of the analytical instrument. As with the low point of the calibration curve, the high point of the calibration curve establishes the maximum analytical result which meets the acceptance criteria.

***Est MDL from breakthrough results:***

This value is a calculated value based upon the trap 2 results. The estimated MDL multiplies the standard deviation of the trap 2 mass by the one tailed *t*-value at the 99% significance level with a degree of freedom of the number of samples less one.

***Expected Mass of Hg to be collected:***

This is the mass value of Hg expected to be collected in Section 1 of the sample trap. The expected mass is used to assess the acceptability of the spike level used during the field recovery test. Method 30B section 8.2.6.1 indicates that the pre-sampling spike mass must be within 50 to 150 percent of this expected mass.

***Run Technician Name:***

This field is the name of the person that operated the equipment used to collect the sample. (Optional)

***Mercury Mass Units:***

This field provides the metric units associated with all the reported mass values used in the sample data tab. Metric mass values available range from grams (g) to nanograms (ng). You should select mass units which will display the trap two values with at least number in the one place.

***Gas Meter Units:***

This is the units that the dry gas meter displays. The ERT limits selection to liters, cubic meters and cubic feet. You should select the display units for the gas meters used to collect the sample and shown on the point data sheet.

***Sampling Media Information:***

This area is only present in the paired train sampling methodology. Information in this area is used to identify the supplier of the sampling media, analytical instrumentation, the analyst and the analysis method.

***Trap Manufacturer:***

This is the manufacturer of the sample cartridge or sleeve containing a sorbent media (typically activated carbon treated with iodine or some other halogen) with multiple sections separated by an inert material such as glass wool. These sorbent traps are optimized for the quantitative capture of elemental and oxidized forms of Hg and can be analyzed by multiple techniques.

<b><i>Trap Analysis Source:</i></b>	This is the combined equipment and apparatus used to perform sample analyses. This includes any associated sample preparation apparatus e.g., digestion equipment, spiking systems, reduction devices, etc., as well as analytical instrumentation such as UV AA and UV AF cold vapor analyzers.
<b><i>Analysis Technician:</i></b>	This is the name of the person operating the trap analysis equipment. (Optional)
<b><i>Analysis Method:</i></b>	This is information to identify the method used extract, prepare and analyze the collected samples. Recovery techniques may include acid leaching, digestion, and thermal desorption/direct combustion. Example analytical techniques include, but are not limited to, ultraviolet atomic fluorescence (UV AF), ultraviolet atomic absorption (UV AA) with and without gold trapping, and X-ray fluorescence (XRF) analysis.
<b><u>Equipment ID:</u></b>	Information provided in the equipment ID area is used to identify specific pieces of equipment used for the test run. Identifiers which may be used include but are not limited to manufacturers' product name and serial numbers or test company identification numbers.
<b><i>Dry Gas Meter:</i></b>	The dry gas meter is the piece of hardware responsible for quantifying the volume of gas passing through the meter. Typically this is a diaphragm or bellows meter. The bellows in the meter drive an odometer-like counter indicating the total volume of gas which has passed through the meter. The ID is necessary for calibration documentation purposes. (Optional)
<b><i>Control Console:</i></b>	The control console describes the combination of the dry gas meter, pumps, temperature controllers, manometers, pressure transducers and vacuum gauge. The ID is necessary for calibration documentation purposes. (Optional)
<b><i>Umbilical:</i></b>	This is the sample gas transport line from the sample box to the control console or meterbox. The umbilical usually consists of bundled tubing, thermocouple, electrical lines, etc., used to control the probe and sample box filter temperatures. The Umbilical ID is present only on the " <b><i>Single Train</i></b> " header tab. (Optional)
<b><i>StackTC:</i></b>	This is the ID of the thermocouple device used for monitoring the stack gas temperature. The ID is necessary for calibration documentation purposes.
<b><i>TedlarBag:</i></b>	This is the ID of a Tedlar bag, if used. The Tedlar bag ID is present only on the " <b><i>Single Train</i></b> " header tab. (Optional)
<b><i>OrsatPump:</i></b>	This is the ID of the pump used for filling a Tedlar bag, for example. The Orsat Pump ID is present only on the " <b><i>Single Train</i></b> " header tab. (Optional)

<b><i>Probe/Pitot:</i></b>	This is the sample probe and or Pitot equipment identification number. The Pitot is the piece of hardware used to measure the velocity pressure of the stack gas. The ID is necessary for calibration documentation purposes.
<b><i>Nozzle:</i></b>	The nozzle ID is necessary for calibration documentation purposes. The Nozzle ID is present only on the “ <b><i>Single Train</i></b> ” header tab.
<b><u>Filters:</u></b>	Information provided in the filters area is used to identify the specific filter used for the test run. The numbers assigned to each of the filters is necessary for associating laboratory analyses with the specific test program. Since at this time filters are not used with the paired train methods which can be documented in the ERT, the filter numbers are present only on the “ <b><i>Single Train</i></b> ” header tab.
<b><i>FilterNum1:</i></b>	For particulate sampling, enter the filter’s unique identification number.
<b><i>FilterNum2:</i></b>	This is for the second filter ID, if two filters are used.
<b><i>FilterNum3:</i></b>	This is for the third filter ID, if three filters are used.
<b><u>Calibration:</u></b>	Documenting equipment IDs allows for the calibration data for the specific equipment used in sampling to be included with the test data.
<b><i>Y:</i></b>	This is the dry gas meter correction coefficient, gamma, of an isokinetic sampling train meterbox (such as used for Method 5 sampling). The value is determined by the calibration of the dry gas meter with a volume device traceable to the National Institute of Standards and Technology (NIST). The units of gamma are dimensionless and should be between 0.95 and 1.05.
<b><i>DH@:</i></b>	Delta H @ ( $\Delta H_{@}$ ) is the orifice pressure differential in inches of H <sub>2</sub> O of an isokinetic sampling train meterbox (such as used for Method 5 sampling) that correlates to 0.75 cfm at 528°R and 29.92 in Hg.
<b><i>Cp:</i></b>	The Pitot tube coefficient for an S-type Pitot can range from 0.80 to 0.88 but is usually between 0.84 and 0.864. The default value allowed for S-type Pitots’ meeting the Method 2 design specification and which have not been calibrated is 0.84. Any S-type Pitot with a Cp other than 0.84 should also include documentation of calibration by the procedure described in Section 10 of Method 2. The Cp for a standard Pitot is 0.99.
<b><i>Dn (in):</i></b>	The nozzle diameter is measured in inches. Since at this time the nozzle diameter is not needed with the paired train methods which can be documented in the ERT, the nozzle diameter is present only on the “ <b><i>Single Train</i></b> ” header tab.

<b><u>Ambient:</u></b>	Information provided in this area is used to identify ambient air surrounding the sampling location.
<b><i>Pb:</i></b>	The barometric pressure of the sampling location. If the pressure is reported to sea level conditions, adjust the pressure for the elevation of the location above sea level. A 0.1 inches Hg decrease for every 100 feet of elevation is typically used.
<b><i>Pstatic:</i></b>	The static pressure, inches of water, of the sampling location.
<b><i>Temperature:</i></b>	Ambient Temperature in degrees F. The ambient temperature field is present only on the single train " <b><i>Header Data</i></b> " tab.
<b><u>Concentrations:</u></b>	The following two parameters refer to the concentrations of carbon dioxide and oxygen in the gas stream as measured by one of several other test methods'
<b><i>% CO2:</i></b>	The carbon dioxide percent of the gas stream tested. The pull-down to the right of the field for the CO <sub>2</sub> concentration provides access to the results of instrumental measurements of CO <sub>2</sub> .
<b><i>% O2:</i></b>	The oxygen percent of the gas stream tested. The pull-down to the right of the field for the O <sub>2</sub> concentration provides access to the results of instrumental measurements of O <sub>2</sub> .
<b><u>Checks:</u></b>	The following parameters refer to leak checking of various equipment components. "Pre" refers to checks done before the start of a run, "mid" is in reference to checks performed sometime during the run (such as between port changes), and "post" means after the run. For paired train sampling, there are fields for documenting checks for both sample trains verses a single sampling train system.
<b><i>Vacuum- Pre &amp; Post:</i></b>	The vacuum at which the pre and post sampling train leak checks were performed.
<b><i>Leak Check Total Volume, Mid:</i></b>	For single sampling trains, this is the total volume recorded by the dry gas meter (DGM) during all leak checks performed between the pre test and post test leak checks. This volume is subtracted from the total sample volume recorded for the test run. These leak checks are typically conducted during sampling port changes. Since the ERT capable test method which requires paired sampling trains does not allow for leak checks with port changes this field is present only on the single train " <b><i>Header Data</i></b> " tab.
<b><i>Leak Rate- Pre &amp; Post:</i></b>	These include the pre- and post-test sampling train leak check rates. For Method 5, the post-test leak rate must be less than or equal to 0.02 acfm. For paired sampling trains, both sampling trains must have leak rates below 4%. The pre-test leak rate is compared to the initial sampling rate and the post-test leak rate is compared to the average sampling rate.

**Pitot- Pre, Mid, & Post:** These include the pre, mid, and post-test leak check results, as applicable. This field is present only on the single train “**Header Data**” tab.

**Nozzle- Pre, Mid, & Post:** These are pull-down selections for nozzle inspections for dents, nicks, etc. This field is present only on the single train “**Header Data**” tab.

**Stack TC- Pre, Mid, & Post:** These include the pre, mid, and post-test results of the thermocouple check, as applicable. Since the ERT capable test method which requires paired sampling trains also requires the recording of sorbent trap and probe temperatures, there are checks for these thermocouples.

The image shows two overlapping windows from a software application. The top window is titled "Vlc components" and contains a table with two columns: "Initial" and "Final". The rows are labeled "Impinger 1" through "Impinger 6" and "Silica Gel". The values in the "Initial" column are 564.3, 704.3, 492.4, 0, 0, 0, and 744.9 respectively. The values in the "Final" column are 548.5, 711.2, 499.1, 0, 0, 0, and 758.8. A "Close" button is at the bottom of this window. The bottom window is titled "Change Vlc?" and contains a question mark icon and the text "Do you to replace the current Vlc value with this value: 11.9999023437499?". It has "Yes" and "No" buttons at the bottom.

	Initial	Final
Impinger 1:	564.3	548.5
Impinger 2:	704.3	711.2
Impinger 3:	492.4	499.1
Impinger 4:	0	0
Impinger 5:	0	0
Impinger 6:	0	0
Silica Gel:	744.9	758.8

**Figure 55 - Volume of liquid collected sub menu.**

**Vlc Components:** The following parameters refer to “**Vlc**,” where “**Vlc**” is the volume of liquid condensate. The “**Vlc**” is the volume or mass of water condensed from the sample gas and collected in the impingers of an isokinetic sampling train.

**Vlc:** Click on “**Vlc Components**” button on the single train “**Header Data**” tab to open a form shown in **Figure 55 - Volume of liquid collected sub menu**. to enter “**Vlc Components**”. Enter the values for the initial volume or mass and final volume or mass for up to 6 Impingers and the silica gel. When complete, click on “**Close**”. A prompt will appear with the new calculated “**Vlc**” value to verify that the current “**Vlc**” value should be replaced with the new “**Vlc**” value. Click “**Yes**” to replace current value.

Click “No” to close without replacing the current “Vlc” value. If you selected “Yes” to the prompt the “Vlc” value will populate the “Vlc” data field in the header data tab. The paired train header tab does not have the capability to document individual impinger contents at this time.

**Micromanometer**

**ID:** This is the identification number of the micromanometer.

**Sensitivity:** This is the units of inches of water column.

**Defaults:** The following parameters refer to the EPA standards.

**Tstd:** This is the standard temperature which defaults to EPA standard of 68 degrees F. When the test method performed requires the use of a different standard temperature, the “68” in this field should be changed to the temperature specified.

**Pstd:** This is the standard pressure which defaults to EPA standard of 29.92 inches of mercury. When the test method performed requires the use of a different standard pressure, the “29.92” in this field should be changed to the pressure specified.

**% CO:** This is the carbon monoxide percentage which defaults to zero (0).

**Fuel Type:** The selection of the **Fuel Type** with this drop down menu populates the three F-factor fields below this selection with the values presented in Table 19-2 of EPA Method 19. In addition, “Override” may be selected and fuel specific F-factors as calculated by equations 19-13, 19-14 and 19-15 in EPA Method 19 may be entered in the appropriate F-factor field. The values entered are based upon an ultimate analysis of the fuel or combination of fuels using equations 19-16, 19-17 and 19-18 of EPA Method 19.

**Fd:** The value “**Fd**” is the ratio of the quantity of dry effluent gas generated by combustion to the gross calorific value of the fuel. When combined with the oxygen concentration, the emission rate in lb/MMBtu can be calculated from the dry pollutant emissions concentration. By selecting the fuel type, the F-factor, “**Fd**,” from US EPA Reference Method 19 is populated in this field. If override is selected, the user should enter the “**Fd**” as calculated by equation 19-13 or 19-16 of US EPA Reference Method 19.

**Fw:** The value “**Fw**” is the ratio of the quantity of wet effluent gas generated by combustion to the gross calorific value of the fuel. When combined with the wet oxygen concentration and the moisture concentration, the emission rate in lb/MMBtu can be calculated from the wet emissions concentration. By selecting the fuel type, the F-factor, “**Fw**,” from US EPA Reference Method 19 is populated in this field. If override is selected, the user should enter the “**Fw**” as calculated by equation 19-14 or 19-17 of US EPA Reference Method 19.

**F<sub>c</sub>:** The value “F<sub>c</sub>” is the ratio of the theoretical carbon dioxide produced during combustion to the higher heating value of the fuel combusted. When combined with the carbon dioxide, the emission rate in lb/MMBtu can be calculated from either the wet or dry emissions concentration. By selecting the fuel type, the F-factor, “F<sub>c</sub>,” from US EPA Reference Method 19 is populated in this field. If override is selected, the user should enter the “F<sub>c</sub>” as calculated by Equation 19-15 or 19-18 of US EPA Reference Method 19.

### Point Data Screen

Run Data Details

Facility: Environ Mental Concious Furniture Co.

Permitted Source ID/Description: DR2 Dryer 2

Select Location - Method: stack - Method 29

Select Run: Method 29 - 2

Method Setup | Header Data | Point Data | Lab Data | Sampling/Stack Data Results | Cyclone Cut Size | Emissions

Method:	RunNumber:	RunDate:
Method 29	2	12/23/2004

Poin	BeginTim	EndTim	Clock	GasMeter	DeltaP	OrificePresDesir
A1	0	4	3:31:00 PM	741.792	0.28	1.26
A2	4	8	3:35:00 PM	743.955	0.28	1.26
A3	8	12	3:39:00 PM	746.118	0.31	1.39
A4	12	16	3:43:00 PM	748.281	0.31	1.39
A5	16	20	3:47:00 PM	750.444	0.29	1.30
A6	20	24	3:51:00 PM	752.608	0.29	1.30
A7	24	28	3:55:00 PM	754.771	0.2	0.90
A8	28	32	3:59:00 PM	756.934	0.2	0.90
B1	32	36	4:03:00 PM	759.097	0.29	1.30
B2	36	40	4:07:00 PM	761.260	0.29	1.30
B3	40	44	4:11:00 PM	763.423	0.3	1.35
B4	44	48	4:15:00 PM	765.586	0.3	1.35
B5	48	52	4:19:00 PM	767.749	0.27	1.21
B6	52	56	4:23:00 PM	769.912	0.27	1.21

Figure 56 - Isokinetic Method: Point Data Tab

Although the point data for single train and paired train sampling are similar, the point data screen for paired trains provides additional columns for documenting comparable information for the duplicate components for the combined test train. At this time, the point data for the single sampling train may be imported from the spreadsheet. Data for both the single sample train and the paired sampling train can be manually entered here. Use the side and bottom scroll bars to view more information. Recall at any time you can change the width of the columns in Access by placing the cursor over the split between the columns and clicking and dragging the column to the desired width.

Point	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePres	OrificePres	StackTer	StackTe	ProbeTempA	ProbeTempB
D5			0	204.870	144.810							
4	0	3	11:52:48 AM	205.578	145.587	0.163	1.63	1.657	203	203	249	249
3	3	6	11:55:41 AM	206.280	146.367	0.15	1.49	1.433	204	204	248	248
2	6	9	11:58:34 AM	206.973	147.141	0.134	1.34	1.342	203	203	246	246
1	9	12	12:01:26 PM	207.675	147.918	0.148	1.70	1.697	202	202	243	243
A5	12	15	12:04:19 PM	208.374	148.689	0.145	1.67	1.638	200	200	241	241
4	15	18	12:07:12 PM	209.070	149.460	0.155	1.63	1.732	204	204	249	249
3	18	21	12:10:05 PM	209.769	150.237	0.141	1.70	1.671	206	206	251	251
2	21	24	12:12:58 PM	210.471	151.014	0.164	1.41	1.504	206	206	252	252
1	24	27	12:15:50 PM	211.170	151.794	0.146	1.69	1.743	205	205	246	246
B5	27	30	12:18:43 PM	211.863	152.565	0.156	1.47	1.417	204	204	244	244
4	30	33	12:21:36 PM	212.568	153.339	0.146	1.73	1.786	208	208	260	260
2	36	42	12:30:14 PM	213.279	154.116	0.136	1.39	1.468	218	218	253	253
3	33	36	12:24:29 PM	213.972	154.887	0.16	1.48	1.448	219	219	262	262
1	42	39	12:27:22 PM	214.671	155.658	0.139	1.56	1.621	217	217	256	256
C5	39	45	12:33:07 PM	215.367	156.429	0.166	1.68	1.611	215	215	261	261
4	45	48	12:36:00 PM	216.072	157.206	0.153	1.46	1.438	224	224	279	279

Figure 57 - Paired Sample Train Point Data Tab

Below is a description of the column fields:

- Point:** The sampling point label, such as A1, A-1, D-2, etc.
- BeginTime:** The cumulative sampling time that sampling at the sample point was started, in minutes. Port changes DO NOT reset the time to zero (0).
- EndTime:** The cumulative sampling time that sampling at the sample point was ended, and is the begin time plus the sampling time per point. Values in end time are used in calculating Net Run Time and isokinetics.
- Clock:** The actual clock time at the start of sampling at a point.
- GasMeter:** The dry gas meter volume reading at the *beginning* of the sampling at a point. This means that the final volume reading is recorded in a row without a point label and no other recorded point data. Sometimes the sampling data is recorded at the end of sampling at a point which would require that the first volume reading is recorded without any other sampling data. Values in “Gas Meter” are used in the calculation of sample volume metered, standard sample volume metered, isokinetics, calculated moisture content of sampled gas stream, dry mole fraction of water, wet molecular weight of gas stream, velocity of gas stream, and actual and standard stack gas flow. For paired sample train tests there are two columns for recording the gas meter volumes.

<b><i>DeltaP:</i></b>	The velocity pressure (delta p) expressed in inches of water. Values in “ <b><i>Delta P</i></b> ” are used in the calculation of isokinetics, average delta p, velocity of gas stream and actual and standard stack gas flow.
<b><i>OrificePresDesired:</i></b>	This is the orifice pressure setting required for sampling isokinetically, measured by inches water. For paired sample train tests there are two columns for recording the desired orifice pressure.
<b><i>OrificePresActual:</i></b>	Orifice pressure actually sampled or reached, measured by inches of water. The values in the “ <b><i>Orifice Pressure Actual</i></b> ” are used in the calculation for “ <b><i>Delta H</i></b> ,” sample volume corrected to standard conditions, isokinetics, moisture percentage, dry mole fraction of water, velocity of gas stream and actual and standard stack gas flow. For paired sample train tests there are two columns for recording the actual orifice pressure.
<b><i>StackTemp:</i></b>	Stack temperature is the temperature of the effluent gas at the sampling point and is expressed as degrees F. The values in the stack temp are used in the calculation for isokinetics, moisture percentage at saturation, dry mole fraction of water, wet molecular weight of sampled gas stream, average stack temperature, velocity of gas stream, and actual and standard stack gas flow. For paired sample train tests there are two columns for recording the stack temperature.
<b><i>ProbeTemp:</i></b>	This is the temperature of the sampling probe, degrees F. For paired sample train tests there are two columns for recording the probe temperature.
<b><i>Trap Temp:</i></b>	This is the temperature of the sample collection traps. For paired sample train tests there are two columns for recording the trap temperature. There is no column for trap temperature for single train sample methods.
<b><i>FilTempIn:</i></b>	This is the filter temperature entering the filter box or compartment, degrees F. All filter temperatures should be the temperature measured by a thermocouple in direct contact with the sample gas. Where a sampling protocol requires the monitoring of two filter temperatures, this may be used as the exit gas temperature for the first filter. For example, this would be the Method 5 filter temperature for a combined Method 5 and Method 202 sampling train.
<b><i>FilTempOut:</i></b>	This is the filter temperature exiting the filter box or compartment, degrees F. Where a sampling protocol requires the monitoring of two filter temperatures, this may be used as the exit gas temperature for the second filter. For example, this would be the Method 202 filter temperature for a combined Method 5 and Method 202 sampling train.

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<b><i>FinalExitTemp:</i></b>	This is the temperature of sample gas exiting silica gel impinger, degrees F. For paired sample train tests there are two columns for recording the final exit temperature.
<b><i>DryGasInlet:</i></b>	This is the dry gas meter inlet gas temperature, expressed as degrees F.
<b><i>DryGasOutlet:</i></b>	This is the dry gas meter outlet gas temperature, expressed as degrees F. The values in the dry gas outlet are used in the calculation for dry gas meter temperature, sample volume corrected to standard conditions, isokinetics, moisture percentage of stack gas, dry mole fraction of water, wet molecular weight of sampled gas stream, average stack temperature, velocity of gas stream and actual and standard stack gas flow. For paired sample train tests there are two columns for recording the dry gas outlet temperature.
<b><i>PumpVac:</i></b>	This is the vacuum of the sampling pump, measured in inches mercury. For paired sample train tests there are two columns for recording the pump vacuum.
<b><i>SampleRate:</i></b>	This is the sampling rate, measured in cubic ft per min. For paired sample train tests there are two columns for recording the sampling rate. For paired sample train tests this is in the units of measure selected on the “ <b><i>Header Data</i></b> ” tab and is a required field which is used in the quality analysis of the test.
<b><i>Notes:</i></b>	These are any observations or comments concerning the test run.

### Single Sample Lab Data Screen

[Click to see video on Manual Method Lab Data entry.](#)

The screenshot shows the 'Run Data Details' window with the following fields and data:

- Facility: Environ Mental Concious Furniture Co.
- Permitted Source ID/Description: DR2 Dryer 2
- Select Location - Method: stack - Method 29
- Select Run: Method 29 - 2
- Run Date: 12/23/2004

Compound	Mass	Units	Flag	Comments
Zinc	20	mg		
Silver	23	mg		
Nickel	23	mg		
Manganese	23	mg		
Lead	23	mg		
Chromium	23	mg		

Figure 58 - Isokinetic Method: Lab Data Tab

At this time the single sample “*Lab Data*” screen presents a limited amount of information and the comparable paired sample screen is named “*Sample Data*”. Enter the lab data for each compound. Below is a description of the single sample “*Lab Data*” fields:

- Compound:** Analyte name from the “*Setup*” window.
- Mass:** Sample catch weight reported from the lab.
- Units:** The mass units, including: gm (grams), mg (milligrams), ug (micrograms), ng (nanograms) or pg (picograms).
- Flag:** Lab quantifier comment about the sample data, which may be ND, EMPC, J, etc. EMC Guidance document GD-051F recommends using the following flags for stack test results which have multiple reported fractions: BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory’s reported detection level(s); DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory’s reported detection level(s); and ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory’s reported detection level(s).

**Comments:**

Observations or comments. EMC Guidance document GD-051F recommends the reporting of individual components and laboratory detection level(s) in the comment field. Each component should be provided in the order of the sampling train with commas separating the individual values. Values which are below the detection limit should be enclosed with brackets and the value preceded with a less than sign. For example, a four fraction sample would be reported as 0.036, [<0.069], 1.239, [<0.945]. It is suggested that the method to address below detection level results should be included in the comment field as well as a summary of the methodology used to establish the detection level.

**Paired Sample Data Screen**

	Sample A	Sample B
Trap ID:	5-1A	5-1B
Section 1 Hg Mass (m1 / ms), incl. plug	58.00 ng	126.00 ng
Section 1 Spike Value (Mspiked)	0.00 ng	60.00 ng
Section 1 Spike Recovery (Crec)	ug/dscm	3.9862E+00 ug/dscm
Section 1 Spike Recovery Mass	ng	6.1786E+01 ng
Section 1 Recovery Percentage (R)	%	102.976 %
Section 2 Hg Mass (M2)	1.500 ng	3.500 ng
Section 2 Breakthrough (%B)	2.586 %	2.778 %
Initial sampling rate	2.3300E-01 l/min	2.5800E-01 l/min
Average sampling rate	2.4555E-01 l/min	2.7150E-01 l/min
Maximum deviation from sampling rate	6.9 %	6.2 %
Total Sample Volume (Vt)	1.4000E-02 M3	1.5500E-02 M3
Spl Vol deviation from field recovery run	252.9 %	218.7 %
Sample Mercury Mass Collected	5.9500E+01 ng	6.9500E+01 ng
Sample Mercury Concentration (Cd)	4.2500E+00 ug/dscm	4.4839E+00 ug/dscm
Sample Mercury Concentration (Cw)	1.0850E+00 ug/scm	1.1450E+00 ug/scm
Test Run Mercury Concentration	4.3670E+00 ug/dscm	
Paired trap agreement relative deviation (R)	2.6777 %	

Figure 59 - Paired Sample Train: Sample Data Screen

For paired sample trains, the “*Sample Data*” screen contains only eight fields for the user to provide information. The remaining information presented is intermediate calculations and final calculated results based upon the user entered information. Below is a description of the user entered and calculated fields:

<b>Trap ID:</b>	This is usually an alphanumeric code as required by section 6.1.1 of Method 30B which uniquely identifies a cartridge or sleeve containing a sorbent media with two sections separated by an inert material.
<b>Section 1 Hg Mass:</b>	This is the mass determined by the analysis of the first section of the sorbent trap and the inert separation material. The units of measure displayed after the date entry fields are the units selected on the paired train “ <b>Header Data</b> ” screen.
<b>Section 1 Spike Value:</b>	This is the mass which was spiked (added) to “ <b>Section 1</b> ” of one of the pairs of traps used for the Field Recovery Test. All spiked samples will be considered to be one of the tests for the “ <b>Field Recovery Study</b> .” The mass spiked should be between 50 and 150 percent of the expected mass collected on the unspiked samples.
<b>Section 1 Spike Recovery:</b>	For samples which were spiked, the concentration calculated by Method 30B Equation 30B-6 is presented. The units of measure are $\mu\text{g/dscm}$ .
<b>Section 1 Spike Recovery Mass:</b>	For samples which were spiked, the product of the spike recovery concentration and the volume of gas sampled are presented. The units of measure are those selected in the “ <b>Header Data</b> ” screen.
<b>Section 1 Recovery Percentage:</b>	For samples which were spiked, the percentage of spike mass recovered calculated by Method 30B Equation 30B-7 is presented. While there are no specifications for individual recoveries, the average of all the Field Recovery tests should be between 85% and 115%.
<b>Section 2 Hg Mass:</b>	This is the mass determined by the analysis of the second section of the sorbent trap. The units of measure displayed after the entry fields are the units selected on the “ <b>Header Data</b> ” screen. You should adjust the units of measure on the “ <b>Header Data</b> ” screen such that all figures for the mass are visible within the three visible decimal places of this field.
<b>Section 2 Breakthrough:</b>	This is the breakthrough percentage from the section 1 mass. Method 30B Equation 30B-2 calculates breakthrough by dividing the Section 1 sorbent trap results by the Section 2 sorbent trap results. The units of measure are percent. The acceptability of the breakthrough percentage is dependent on the average concentration for the test run.
<b>Initial Sampling Rate:</b>	This is the initial sample flow rate entered in the point data by the source tester. This value will be used to assess the acceptability of the Pre-test leak rate and the ability of the source tester to maintain this sampling rate during the test period. The

	units of the sampling rate are those selected in the “ <b>Header Data</b> ” screen.
<b>Average Sampling Rate:</b>	This is the average sampling rate achieved by the source tester during the run. This value will be used to assess the acceptability of the Post-test leak rate and the ability of the source tester to maintain this sampling rate during the test period. The units of the sampling rate are those selected in the “ <b>Header Data</b> ” screen.
<b>Maximum deviation from sampling rate:</b>	This is the maximum sampling rate deviation from the average sampling rate. While there are no criteria for acceptability, this value is an indicator of the source testers’ ability to achieve the intent of the method to maintain a constant sample flow rate. The units of the deviation are in percent.
<b>Total Sample Volume:</b>	This is the total volume of gas sampled through the collection traps. The units of this value are Cubic Meters. This value will be compared to the average sample volume collected during the “ <b>Field Recovery</b> ” study tests.
<b>Spl Vol deviation from field recovery run:</b>	This is the percentage deviation from the average sample volume recorded for the “ <b>Field Recovery</b> ” study tests. To meet the acceptability requirements of Method 30B Section 8.3.3.3, each test run must be within 20 percent of the volume for the “ <b>Field Recovery</b> ” study tests.
<b>Sample Mercury Mass Collected:</b>	This is the sum of the mass collected on Section 1 and Section 2 reduced by any mass spiked on Section 1. The units of measure are those selected in the “ <b>Header Data</b> ” screen.
<b>Sample Mercury Concentration (Cd):</b>	This is the dry concentration of mercury measured by each of the two sampling trains based upon the “ <b>Sample Mass</b> ” collected and the “ <b>Total Volume Sampled</b> ”. The units of measure for the concentration are in µg/dscm.
<b>Sample Mercury Concentration (Cw):</b>	This is the wet concentration of mercury measured by the two sampling trains based upon the dry concentration and the measured moisture content. The units of measure for the concentration are in µg/scm.
<b>Test Run Mercury Concentration:</b>	This is the average of the paired trap concentrations. Although the values are displayed to five significant figures users should base any decision on local policy for rounding and use of significant figures. EPA policy is that final values should be rounded to two or three significant figures.
<b>Paired Trap Agreement Relative Deviation:</b>	This is the relative difference between the two samples as calculated by Method 30B Equation 30B-5. The unit of measure is percent. The criteria specified in Method 30B for acceptance depends upon the average measured concentration.

**Sampling/Stack Data Results Screen**



Figure 60 - Isokinetic Method: Data Results Tab



Figure 61 - Paired Sampling Trains: Data Results Tab

This tab shows results for a specific run, which were calculated from data entered into the previously. Except for the percent isokinetic field at the bottom left of the isokinetic “*Methods*” screen as shown in **Figure 60**, the data elements displayed are identical. Since the Paired Sampling trains have two independent sampling systems, the paired sampling train “*Stack Data Results*” has a separate column for each sampling train in the “*Sampling Train Parameters*” area as shown in Figure 61. None of the fields are editable.

By placing your mouse over either the abbreviations or the data fields and pausing for about two seconds, a popup tip will appear explaining the abbreviations. This feature is not used for either “*Net Run Time*” or “*Net Traverse Points*” as these are easily deciphered.

Click the “**View All Runs**” button to display a print-ready window showing the results from all runs in a side-by-side manner.

Below is a description of the fields:

<b><i>NetRunTime:</i></b>	Net time in minutes of run.
<b><i>NetTravPts:</i></b>	Net number of traverse points.
<b><i>Dn:</i></b>	Diameter of nozzle, inches.
<b><i>Cp:</i></b>	Pitot coefficient.
<b><i>Y:</i></b>	Meter box coefficient, Gamma.
<b><i>Pb:</i></b>	The barometric pressure of the sampling location.
<b><i>DeltaH:</i></b>	DGM orifice pressure differential, water inches.
<b><i>Vm:</i></b>	Sample Volume metered, actual cubic feet.
<b><i>Tm:</i></b>	Dry gas meter temperature, degrees F.
<b><i>Vmstd:</i></b>	Sample volume corrected to standard conditions, DSCF.
<b><i>Vlc:</i></b>	Equivalent volume of liquid water collected in moisture sample, ml.
<b><i>Vwstd:</i></b>	Volume of water collected at standard conditions, SCF.
<b><i>%I:</i></b>	Percent Isokinetic, percentage.
<b><i>% H2O:</i></b>	Calculated moisture content of sampled gas stream, percentage.
<b><i>% H2O<sub>sat</sub>:</i></b>	Calculated moisture content of saturated gas stream, percentage.
<b><i>Mfd:</i></b>	Dry mole fraction, 1-BWS.
<b><i>% CO<sub>2</sub>:</i></b>	Carbon Dioxide concentration of sampled gas stream, percentage.
<b><i>% O<sub>2</sub>:</i></b>	Oxygen concentration of sampled gas stream, percentage.

<b>% CO + N2:</b>	Balanced gas concentration of sampled gas stream, percentage.
<b>Fo:</b>	Ratio of excess oxygen and carbon dioxide. Calculation uses $(20.9 - \%O_2)/\%CO_2$ .
<b>Md:</b>	Dry molecular weight of sampled gas stream, lbs/lb-mole.
<b>Ms:</b>	Wet molecular weight of sampled gas stream, lbs/lb-mole.
<b>Pg:</b>	Static pressure of sampled gas, water inches.
<b>Ps:</b>	Absolute pressure of sampled gas, inches of Hg.
<b>Ts:</b>	Temperature of sampled gas, degrees F.
<b>DeltaPavg:</b>	Average Pitot tube differential pressure, water inches.
<b>Vs:</b>	Velocity of gas stream, feet per second.
<b>Dstk:</b>	Diameter of exhaust, feet.
<b>Dwdth:</b>	Width of exhaust, feet.
<b>Dlngh:</b>	Length of exhaust, feet.
<b>As:</b>	Area of stack, feet squared.
<b>Qsd:</b>	Dry volumetric flow rate of exhaust at standard conditions, DSCFM.
<b>Qaw:</b>	Actual volumetric flow rate of exhaust, ACFM.
<b>MMBtu/Hr:</b>	Heat Rate, mmBtu per hour.

*Note: Fields with "#Error" is a result of missing or incomplete Run data. See the descriptions for the point data columns to identify data entry errors that may cause one or more field in the sampling results tab to display "#Error." Errors in the sampling results may also be due to errors in one of the fields in "Calibration," "Concentration," or volume of liquid components (Vlc).*

### Cyclone Cut Size Screen

**Run Data Details**

Facility: Environ Mental Concious Furniture Co.

Permitted Source ID/Description: DR2 Dryer 2

Select Location - Method: stack - Method 29

Select Run: Method 29 - 2

Method Setup | Header Data | Point Data | Lab Data | Sampling/Stack Data Results | **Cyclone Cut Size** | Emissions

**Note: These results are only valid for Methods using PM10 and PM2.5 Cyclone Head!**

Method:	RunNumber:	RunDate:
Method 29	2	12/23/2004

**PM10-2.5 Results Calculations**

u:	Stack Gas Viscosity	173.3
Qs:	Flow Rate at Cyclone Conditions, ACFM	0.893
Qsrd:	Sampling Rate at Standard Conditions, DSCFM	0.519
Nre:	Reynolds Number	5589
C:	Cunningham Correction Factor	1.130
D50_PM10:	Cut Diameter of PM10 Cyclone I, Micrometers	6.25
D50_PM2.5:	Cut Diameter of PM2.5 Cyclone IV, Micrometers	1.21

**Figure 62 - Isokinetic Method: Cyclone Cut Size Tab**

These results are calculated for every isokinetic method. However, they are only intended for methods using PM10 and PM2.5 cyclone heads. Click on the value to expand the value to twelve positions to the right of the decimal.

### Emissions Screen

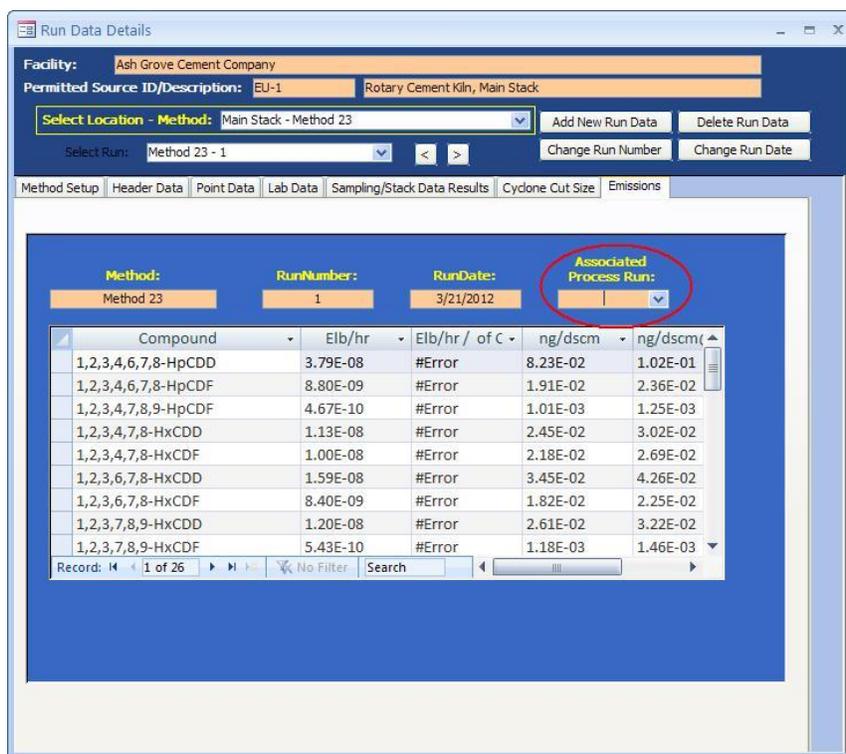


Figure 63 - Isokinetic or Paired Train Method: Emission Results Tab

This tab shows the calculated emissions/concentrations for each compound by run. Generally, these fields are not editable. Columns other than “*Compound*” are dependent on the “*Emissions / Concentrations*” selected in the “*Methods Setup*” tab (Figure 52 - Isokinetic Method: Method Setup Tab **Error! Reference source not found.**). If a process rate variable has been associated with an emission rate, there will be an additional column which presents the process based emissions calculation. You will see the text “#Error” in this column until the test run has an associated process rate selected. To calculate the process based emissions select the process run using the drop down menu in the far right salmon colored field below the text “*Associated Process Run*” which is circled in Figure 63 - Isokinetic or Paired Train Method: Emission Results Tab **Error! Reference source not found.**. The “#Error” will be replaced by the quotient of the test run emission rate divided by the process rate for the selected process run.

Below is a description of a few of the more common column headings:

<b>Compound:</b>	Analyte name from setup window.
<b>Gr/dscf:</b>	Grain per dry standard cubic feet.
<b>Gr/dscf@7%O2:</b>	Grain per dry standard cubic feet corrected to 7% O <sub>2</sub> .
<b>Elb/hr:</b>	Pounds per hour.

*Elb/hr/Tons of ...:*

Pounds per Ton of ... The full text of the divisor (Tons of ...) is dependent on the choice of process variable selected under the “*Process Rate Parameter*” heading of the “*Emissions / Concentration*” area of the “*Method Setup*” tab.

### Paired Train QA/QC Screen:

QA/QC Test or Specification	Acceptance Criteria	Demonstrated Performance
Pre-test leak check	≤ 4% of target sampling rate	The pre-test leak check for Sample A was 4% of the target (initial) sample rate therefore meeting the acceptance criteria of ≤ 4% of target sampling rate. The pre-test leak check for Sample B was 4% of the target (initial) sample flow rate therefore meeting the acceptance criteria of ≤ 4% of target sampling rate.
Post-test leak check	≤ 4% of average sampling rate	The post-test leak check for Sample A was 0.01 l/min which is 4.05% of the average sample flow rate of 0.25 l/min, and therefore met the acceptance criteria of ≤ 4% of target sampling rate. The post-test leak check for Sample B was 0.01 l/min which is 4.049% of the average sample flow rate of 0.27 l/min, and therefore met the acceptance criteria of ≤ 4% of target sampling rate.
Sample flow rate.	Adjust the sampling flow rate as necessary to maintain the initial sample flow rate.	The maximum flow rate variation for Sample A was 6.9% of the initial sample flow rate of 0.233 l/min. The maximum flow rate variation for Sample B was 6.2% of the initial sample flow rate of 0.258 l/min.
Test run total sample volume.	Within ± 20% of total volume sampled during field recovery test.	The total volume sampled for Sample A was 0.01 M3 and for Sample B was 0.02 M3 verses the average sample volume of 0.05 M3 for the field recovery test spiked samples. The maximum deviation of the total volume sampled was 252.9% of the total volume sampled during the field recovery test. One or both samples were greater than the ± 20% acceptance criteria
Sorbent trap section 2 breakthrough	≤ 10% of section 1 Hg mass for Hg concentrations > 1 µg/dscm; ≤ 20% of section 1 Hg massD or ≤ 0.2 µg/dscm absolute difference for Hg	The average Hg concentration was > 1 µg/dscm. The Hg in section 2 was 1.5 µg for Sample A and 3.5 µg for Sample B for breakthroughs of 2.586% for Sample A and 2.778% for Sample B, thus meeting the acceptance criteria for Hg concentrations > 1 µg/dscm of ≤ 10% of section 1 Hg mass. For Sample A the Hg in section 2 was ≤ 50% of the section 1 Hg mass therefore this sample may meet the acceptance criteria if the sample Hg concentration is ≤ 20% of the Hg concentration equivalent to the
Paired sorbent trap agreement.	≤ 10% Relative Deviation (RD) mass for Hg concentrations > 1 µg/dscm; ≤ 20% RD or ≤ 0.2	The average Hg concentration was > 1 µg/dscm. The Hg concentration was 4.25 µg/dscm for Sample A and 4.484 µg/dscm for Sample B for a paired sorbent trap agreement of 2.68% relative deviation (RD), thus meeting the ≤ 10% acceptance criteria.

Figure 64 - Paired Sampling Train: QA/QC Tab

For paired sampling trains, there is a QA/QC tab which identifies several of the QA/QC specifications contained in the test method and the Acceptance Criteria specified in the test method. In addition, the last column has text which describes the specific conditions for deciding the acceptability criteria and an acceptability assessment. Because of differences in display of numbers by the software, and variations in the rounding and significant figures conventions of different programs, the values presented show more decimal places than necessary. The acceptability assessment uses EPA’s criteria of carrying all digits through the calculations and rounding to two significant places except when otherwise indicated. It is assumed that acceptance criteria presented in the method with one or two places are to be evaluated at two significant figures and that criteria presented in the method with three places are to be evaluated at three significant figures.

Due to the length of the text, you may not be able to see all of the information for a QA/QC specification, you can adjust the row heights or column widths. Do this by placing your cursor in

the row indicator on the left or column header above until the cursor changes to a symbol indicating the ability to change the width or height.

QA/QC specifications which are assessed include:

- Pre-test leak check
- Post-test leak check
- Sample flow rate
- Test run total sample volume
- Sorbent trap section 2 breakthrough
- Paired sorbent trap agreement
- Field recovery test
- Sample analysis
- Calibration Curve

## Instrumental Method Test Data

[Click to see video on Instrument Method entry.](#)

The screenshot displays the 'Run Data Details' window for an Instrumental Method (ITM). The facility is 'BP - Decatur Works' and the permitted source is 'AB8103 Hot Oil Furnace'. The selected location and method are 'Boiler AB8103 Outlet - Method 7E'. The 'Compounds for this Location / Method: ITM' table shows one entry: 'Boiler AB8103 Outlet' for 'Nitrogen oxides (NOx)' with a limit of 0 lb/hr and 9 test runs. The 'Emissions / Concentrations for this Location / Method:' table shows three entries for 'Boiler AE Method 7E' with parameters 'ppm corrected', 'lb/hr', and 'Corrected %'.

Location	Target Parameter	Lb/Hr Limit	Test Method	Num Test Runs	Test Run Du
Boiler AB8103 Outlet	Nitrogen oxides (NOx)	0	Method 7E	9	21

Local	Method	Emission/Concentrat	Corrected Anal	Corrected %	Process Rate, Parameter
Boiler AE Method 7E		ppm corrected	O2	3	
Boiler AE Method 7E		ppm		0	
Boiler AE Method 7E		lb/hr		0	

Figure 65 - Run Data Details Screen for Instrumental Methods

**16. If applicable, list the expected calibration gas concentrations for all proposed instrumental test methods. Include as much information as is known at this time.**

CylID	Compound(Analyt	CertProcedure	CertVal	UncertainPerce	CertDate	ExpDate
N2Z	N2Z	NA	0	0	1/11/2012	1/11/2012
NOxH-SA12283	NOx - SA 12283	1997 EPA Traceab	51.3	1	9/15/2010	9/15/2012
NOxM-SA 12283	NOx - SA 12283	1997 EPA Traceab	25	1	9/15/2010	9/15/2012
O2H-CC243836	O2 - CC243836	1997 EPA Traceab	19.9	1	3/23/2011	3/23/2014

Record: 1 of 9 | No Filter | Search

Previous Page | Next Page

**Figure 66 - Calibration gas cylinder identification and information.**

You must enter the instrumental method test data manually. Begin by returning to the “*Audit/Calibrations*” tab in the “*Setup / Test Plan*” area. Update or input the calibration gases certified cylinders information in Item 16, as shown in **Error! Reference source not found.** When you update or input the calibration gas cylinder information, you must enter a unique name in the “*CyIID*” column for each gas that was used in the emissions test. For cylinders which contain multiple calibration gases, you can make the cylinder identification number unique with the addition of the compound and range indicator (as an example see the names used under “*CyIID*” in **Figure 66**). Once unique cylinder identification is provided in the “*CyIID*” column, you should insure that the remainders of the columns contain the correct information as is documented by the certificate provided by the cylinder supplier.

In addition, you must enter all the instrumental test method data required for any Performance Specifications prior to entering the CEM data associated with the reference method test runs.

Once you have performed the audit calibration update, the procedure is similar to inputting isokinetic data with the exception that the tabs in the “*Run Data Details*” screen for Instrumental Methods differ from those of the isokinetic methods screen. These tabs include: “*Method Setup*,” “*Calibrations*,” “*ITM Run Results*,” and “*Emissions*”. While the information in the “*Method Setup*” and “*Emissions*” are identical to the isokinetic methods screens, the differences in the test methods require different information than isokinetic test methods.

To minimize data entry time and reduce data entry errors, it is suggested that the first run be completed prior to adding subsequent test runs. The ERT uses information in the completed test run to pre populate the next test run. For example, all information in the “*Calibrations*” tab is retained and selected information in the “*ITM Run Results*” tab is transferred to the appropriate field for the next run. Users can revise these pre populated fields if needed. In addition, to minimize warning messages, users should enter the specific required information suggested in the below instructions before entering the majority of the remaining information.

### Method Setup Tab

Run Data Details

Facility: BP - Decatur Works

Permitted Source ID/Description: AB8103 Hot Oil Furnace

Select Location - Method: Boiler AB8103 Outlet - Method 7E

Select Run: Method 7E - 1

Method Setup | Calibrations | ITM Run Results | Emissions

View / Edit Location Information

**Compounds for this Location / Method: ITM**

Location	Target Parameter	Lb/Hr Limit	Test Method	Num Test Runs	Test Run Du
Boiler AB8103 Outlet	Nitrogen oxides (NOx)	0	Method 7E	9	21

Record: 1 of 1

Add Target Parameters

**Emissions / Concentrations for this Location / Method:**

Local	Method	Emission/Concentrat	Corrected Anat	Corrected %	Process Rate, Parameter
Boiler AE	Method 7E	ppm corrected	02	3	
Boiler AE	Method 7E	ppm		0	
Boiler AE	Method 7E	lb/hr		0	

Record: 1 of 3

Add Emissions/Concentrations

Figure 67 - Instrumental Method: Method Setup Tab

As is the case with the method setup screen for the isokinetic methods, the majority of the fields in this section will be pre-populated based on information entered in the test plan. However, they can be modified without returning to the test plan by using the following:

- **View / Edit Location Information:** Allows you to revise the test location information supplied during the test plan development (see **Figure 22** - Test Plan Locations/Methods Location Edit and Insert options for more information **Error! Reference source not found.**).
- **Add Target Parameters:** Allows you to add target parameters for this run at this location/method (see **Figure 24** - Test Plan Locations/Methods Select Location, Method, and Compounds screen for more information).
- **Add Emissions/Concentrations:** Allows you to add emissions/concentrations for this run at this location/method (see **Figure 27** - Test Plan Locations/Methods Emissions/Concentrations Item for more information).
- **Delete Target Parameters or Emission/Concentrations:** Highlight the row of the emission/concentration by clicking on the gray cell to the left of the column named location and press the keyboard “**Delete**” button.

- **Delete Process Rate, Parameter:** To delete the process rate, parameter you must block all of the text in the field and then press the keyboard “Delete” button. It should be noted that the process rate parameter should only be associated with an emission rate and the time units (hr, min, sec) should be the same for both the emissions rate and the process rate.
- **Change Process Rate Parameter:** To add or change the process rate parameter, click within the field and then on the down symbol (▼) to reveal the drop down list of available process parameters. You should choose a process parameter only for emissions rates and which have time units the same as the emissions rate.

### Calibrations Tab

The screenshot shows the 'Calibrations Tab' in the 'Run Data Details' window. The facility is 'Environ Mental Concious Furniture Co.' and the permitted source is 'DR2 Dryer 2'. The method is 'stack - Method 25A'. The current run is 'Method 25A - St-m25a-1'.

The 'Direct and System Calibrations' table is as follows:

Calibration Set	Mode	Gas Label	Cylinder ID	Cert. Value	Response	Error %	Certification	Date Of Expiration
Direct	Zero		CO2-CC-81020	5.08	-0.1	-1.11	5/26/2006	5/26/2009
Span	Low		CO2-CC-81020	5.08	51.8	10.05	5/26/2006	5/26/2009
	Mid		CO2-SG913371	10.92	259	53.35	1/24/2005	1/24/2008
	High		NOx-CC2555	156.6	465	66.32	1/24/2005	5/18/2008
System	Zero		CO2-CC-81020	5.08	0.1	-11.12	5/26/2006	5/26/2009
	Upscale		NOx-XCO3034	414	258.1	55.51	3/29/2006	3/29/2008

Below this table is a section for entering new calibration data, with columns for Calibration Set, Mode, Gas Label, Cylinder ID, Cert. Value, Response, Error %, Certification, and Date Of Expiration. The 'Direct' mode is selected, and the 'Response' and 'Error %' fields are currently empty.

Figure 68 - Instrumental Method: Calibrations Tab

The results of the instrument calibration and system zero and span responses must be entered in the “Calibrations” tab prior to data entry in the “ITM Results” tab. In addition, you should enter the “set” number and the “span” values for before you select any calibration cylinders under “Cylinder ID”. After entering a “set” number and “span” value, select the “Cylinder ID” from the pick list. For each selected “Cylinder ID,” the orange fields will be automatically filled using information that was entered in the “Audit/Calibrations” tab of the “Test Plan”. You will note that when you select the “Cylinder ID,” the ERT will display an error percent in the yellow fields. Initially this value is based upon calculations using the certification value and a response

of zero. When you enter the actual response for the “*Direct and System Calibrations*” you will note that the calculated error percent changes.

*Note: Be sure to input the span value before inputting the responses; otherwise a non-fatal error message is generated (which may be ignored).*

Below is a description of the columns:

<b><i>Calibration Set:</i></b>	The number used to associate this set of calibrations with the run data entered in the “ <i>ITM Run Results</i> ” tab.
<b><i>Calibration Mode:</i></b>	Direct or System.
<b><i>Span:</i></b>	Span concentration used to calculate percent bias and percent drift. Generally, the span value is set at the concentration of the high level calibration gas although the value is dependent on the method being used.
<b><i>Gas Label:</i></b>	Direct Mode includes Zero, Low, Mid and High. System mode includes zero and upscale. Calibration level of measurement range.
<b><i>Cylinder ID:</i></b>	Cylinder identification number on the gas cylinder and any additional label to make this identifier unique for the gas and concentration. This field is populated by the selection of one of the available ID’s entered in the test plan section of the ERT.
<b><i>Cert. Value:</i></b>	Calibration gas certified concentration. This field is automatically populated from the information entered in the test plan section of the ERT.
<b><i>Response:</i></b>	The analyzer’s response to gas injection. This is the value measured by the instrument when challenged with gas from the gas cylinder identified in the Cylinder ID column.
<b><i>Error %:</i></b>	Difference between certified value and analyzer measurement. Specific calculation procedures are dependent on the reference method being performed.
<b><i>Date of Certification:</i></b>	Date cylinder received certification for use. This field is automatically populated from the information entered in the test plan section of the ERT.
<b><i>Date of Expiration:</i></b>	Date cylinder certification expires. This field is automatically populated from the information entered in the test plan section of the ERT.

### ITM Run Results Screen

Run Data Details

Facility: Environ Mental Concious Furniture Co.

Permitted Source ID/Description: DR2 Dryer 2

Select Location - Method: stack - Method 25A

Select Run: Method 25A - St-m25a-1

Method Setup | Calibrations | ITM Run Results | Emissions

(Run Id's if selected from another run)

Run: St-m25a-1 Flow Rate, SCFM: 1000

Run Date: 4/4/2006 Moisture, %: 10

Start Time: 10:00:00 AM CO2, %: 7.1

End Time: 11:00:00 AM O2, %: 13

Fo: 1.11

**ANALYZER** **OPERATING PARAMETERS** Fuel Type: Override

Make: Model: S/N: Operating Range: 462 Units(% ,ppm,ppb): ppm No. Readings/Avg.: 0 Time Interval of Avg.: Fd: 9860 Fw: 11950 Fc: 1910

Calibration Set	Gas Mode	Cylinder ID	Cert. Value	Instrument Response	System Bias %	System Drift %
1	Pre	CO2-CC-81020	5.08	0	0.02	
	Upscale	NOx-XCO30342B	414	261	0.43	
	Post	CO2-CC-81020	5.08	0.2	0.06	0.04
	Upscale	NOx-XCO30342B	414	258.2	-0.17	0.6

Cavg: 15.3 ppbvd Units

Cgas: 24.2 ppbvd Units

Add New Run

Figure 69 - Instrumental Method: ITM Run Results Tab

Enter the results from the test run. If you followed the guidance presented in the first section of “*Instrumental Test Method Data*,” only one blank run was created. By completing the information in the “*ITM Run Results*” for one run and adding new runs with the menu button on this page, much of the information on this page will be pre populated on the pages of the new runs. If “*ITM Run Results*” have been completed on some but not all runs or if the number of runs entered is equal or greater than specified in the test plan, the “**Add New Run**” button will be available on only the last run. If the “**Add New Run**” button is not visible, new runs can be added using the “**Add New Run Data**” button near the top of the screen.

To complete the information on the “*ITM Run Results*” tab, it is suggested that the units for “*Cavg*” be selected before selecting the calibration set or entering any system response information. If you start entering data in the “*Start Time*” field, you can use the *tab* key to progress through all data entry fields without using the mouse to change fields. If flow rate, moisture percent, CO<sub>2</sub> concentration percent or O<sub>2</sub> concentration percent have been documented in the ERT by other tests, you can select the test and run ID using the drop down menu to populate these fields. You should associate the test run data with the calibration gas set by selecting the set from the “*Set*” pick list. **Figure 70** shows the use of both the selection of other stack test results for populating the stack parameter information and the use of the set pick list for associating calibration sets with the test run. Enter the zero and upscale system responses for the pre and post test calibrations. Then record the test run average concentration value measured by

the instrument in “*Cavg*”. The value in “*Cgas*” will be calculated. If the source is a combustion unit you can select the fuel type and the F-factors for that fuel will be populated in the orange field below the “*Fuel Type*” selection field. If the “*Fuel Type*” option “*Override*” is selected, you can enter fuel specific F-factors based upon an analysis of the combusted fuel.

The screenshot displays the 'Run Data Details' window with the following sections:

- Facility:** BP - Decatur Works
- Permitted Source ID/Description:** AB8103 Hot Oil Furnace
- Select Location - Method:** Boiler AB8103 Outlet - Method 7E
- Select Run:** Method 7E - 9
- Buttons:** Add New Run Data, Delete Run Data, Change Run Number, Change Run Date
- Method Setup | Calibrations | ITM Run Results | Emissions**
- Run Information:** Run: 9, Run Date: 1/11/2012, Start Time: 11:52:00 AM, End Time: 12:12:00 PM
- Flow Rate, SCFM:** 0
- Moisture, %:** 0
- CO<sub>2</sub>, %:** 0
- O<sub>2</sub>, %:** 4.4
- Fo:** 0
- ANALYZER:** Make: CAI, Model: 400CLD, S/N: T04053
- OPERATING PARAMETERS:** Operating Range: 10, Units(% ,ppm,ppb): ppb, No. Readings/Avg.: 2, Time Interval of Avg.: 1 m
- Calibration Table:**

Set	Pre	Zero	Gas	Cylinder	Cert.	System	System	
Mode	Level	ID	Value	Response	Bias	%	Drift	%
5	NZZ	0	NZZ	0	0.3	0.58		
6	NZZ	0						
7	NZZ	0						
8	NZZ	0						
9	NZZ	0						
21	NZZ	0.1						
10	NZZ	0						
11	NZZ	0						
12	NZZ	0						
13	NZZ	0						
14	NZZ	0						
15	NZZ	0						
16	NZZ	0						
17	NZZ	0						
18	NZZ	0						
- Summary:** Cavg: 25.66 ppmvd, Cgas: 24.526 ppmvd
- Buttons:** Add New Run

Figure 70 - ITM Run Results, stack parameter and calibration set selection.

If additional test runs are required and the “**Add New Run**” button is visible within the green “*ITM Run Results*” screen, you can add the next run by clicking on this button. The screen then updates with the next numbered run pre populated in the *run* field. The run date field will have the same run date. In addition, the “*ANALYZER*” section, the “*OPERATING PARAMETER*” section, the pre test calibrations and the fuel type fields will be pre- populated with information from the previous run. The start time, end time, flow rate, moisture, CO<sub>2</sub>, O<sub>2</sub>, Post-test calibrations and “*Cavg*” will be empty. In addition to entering data into the empty fields, you can revise any pre populated fields or change the calibration set.

If you select a run ID associated with the test you are viewing, or a Run Id from another test, the run Id will be automatically filled. If the ID is not associated, an alert box stating “*Data type mismatch in criteria expression*” will appear and the system will not record the run results. If this happens, close the “*Run Data Details*” screen and click on the “*Data Details*” tab’s “**Run Data**”. Select the “*Location – Method*” and begin again.

You can click on “**Delete Run Data**” on “*Run Data Details*” screen to remove erroneous run data.

Field descriptions are below:

<b>Run:</b>	Prefilled, but editable, number of run.
<b>Run Date:</b>	Date run was performed.
<b>Start Time:</b>	Hour-minute-second AM/PM that run was performed. Time can be entered as 24 hour time or 12 hour time with the AM/PM extension and the time will revert to the latter time format.
<b>End Time:</b>	Hour-minute-second AM/PM that run was completed. Time can be entered as 24 hour time or 12 hour time with the AM/MP extension and the time will revert to the latter time format.
<b>Flow Rate, SCFM:</b>	The standard cubic feet per minute volumetric flow rate.
<b>Moisture, %:</b>	Percentage moisture in gas.
<b>CO<sub>2</sub>, %:</b>	Percentage carbon dioxide, CO <sub>2</sub> .
<b>O<sub>2</sub>, %:</b>	Percentage oxygen, O <sub>2</sub> .
<b>Fo:</b>	Ratio of excess Oxygen and Carbon Dioxide. Calculation uses $(20.9 - \% O_2) / \% CO_2$ .
<b>Analyzer:</b>	
<b>Make:</b>	Analyzer Make.
<b>Model:</b>	Analyzer model number.
<b>S/N:</b>	Serial Number of Analyzer.
<b>Operating Parameters:</b>	
<b>Operating Range:</b>	Acceptable range of fluctuations of concentrations of analytes being measured.
<b>Units (% , ppm, ppb);</b>	Units used for the operating range.
<b>No. Readings /Avg:</b>	Number of readings or average number of readings.
<b>Time Interval of Avg:</b>	Time interval between readings.
<b>Fuel Type:</b>	Drop-down menu of fuel types. The selection of the fuel type populates the three F-factor fields below this selection with the values presented in Table 19-2 of EPA Method 19. In addition, “ <i>Override</i> ” may be selected and fuel specific F-factors as calculated by equations 19-13, 19-14 and 19-15 in EPA Method 19 may be entered in the appropriate F-factor. The values

entered are those calculated based upon an ultimate analysis of the fuel or combination of fuels using Equations 19-16, 19-17 and 19-18 of EPA Method 19.

- F<sub>d</sub>*:** The value “***F<sub>d</sub>***” is the ratio of the quantity of dry effluent gas generated by combustion to the gross calorific value of the fuel. When combined with the oxygen concentration, the emission rate in lb/MMBtu can be calculated from the dry pollutant emissions concentration. By selecting the fuel type, the F-factor, “***F<sub>d</sub>***”, from US EPA Reference Method 19 is populated in this field. If “***Override***” is selected, the user should enter the “***F<sub>d</sub>***” as calculated by Equation 19-13 or 19-16 of US EPA Reference Method 19.
- F<sub>w</sub>*:** The value “***F<sub>w</sub>***” is the ratio of the quantity of wet effluent gas generated by combustion to the gross calorific value of the fuel. When combined with the wet oxygen concentration and the moisture concentration, the emission rate in lb/MMBtu can be calculated from the wet emissions concentration. By selecting the fuel type, the F-factor, “***F<sub>w</sub>***”, from US EPA Reference Method 19 is populated in this field. If “***Override***” is selected, the user should enter the “***F<sub>w</sub>***” as calculated by Equation 19-14 or 19-17 of US EPA Reference Method 19.
- F<sub>c</sub>*:** The value “***F<sub>c</sub>***” is the ratio of the theoretical carbon dioxide produced during combustion to the higher heating value of the fuel combusted. When combined with the carbon dioxide, the emission rate in lb/MMBtu can be calculated from either the wet or dry emissions concentration. By selecting the fuel type, the F-factor, “***F<sub>c</sub>***”, from US EPA Reference Method 19 is populated in this field. If “***Override***” is selected, the user should enter the “***F<sub>c</sub>***” as calculated by Equation 19-15 or 19-18 of US EPA Reference Method 19.
- Calibration Set:*** The number assigned to the set of readings. The number used to associate this data to the data entered in “***Calibrations***” tab.
- Calibration Mode:*** Pre (before) and post (after) readings.
- Gas Label:*** Calibration level of measurement range, assigned as zero or upscale.
- Cylinder ID:*** Cylinder identification number on the gas cylinder and label.
- Cert. Value:*** Prefilled calibration gas certified concentration.
- Instrument Response:*** The manufactured listing of the proper instrument response settings.
- System Bias %:*** Calculated percentage of bias.
- Drift %:*** Calculated percentage of drift.

**Cavg:** Average gas concentration displayed by gas analyzer.

**Cgas:** Average gas effluent concentration.

### Emissions Tab

Run Data Details

Facility: BP - Decatur Works

Permitted Source ID/Description: AB8103 Hot Oil Furnace

Select Location - Method: Boiler AB8103 Outlet - Method 7E

Select Run: Method 7E - 6

Method Setup | Calibrations | ITM Run Results | Emissions

Method:	RunNumber:	Associated Process Run:	Cgas dry:
Method 7E	6	8	24.3677 ppmvd

compound	Elb/hr	Elb/hr / Million Btu:	ppm	ppm@3%O2	lb/mmBtu
Nitrogen oxides (NOx)	3.75E+00	3.25E-02	2.44E+01	2.65E+01	3.21E-02

Record: 1 of 1

**Figure 71 - Instrumental Method: Emissions Tab**

This shows the calculated emissions/concentrations for each compound by run. Column headings other than “*compound*” are based upon the output units selected in the “*Emissions / Concentrations*” area of the “*Setup / Test Plan*” or the “*Method Setup*” of the “*Run Data Details*” screen (see **Figure 67** - Instrumental Method: Method Setup Tab).

Some of the more common column names are as follows:

**Compound:** Analyte name from Setup window.

**Elb/hr:** Emissions, pounds per hour.

**Elb/hr/Million Btu:** Pounds per Million Btu... Units in this form are calculated from the emissions rate (pounds per hour) and the process rate (Million Btu per hour) The full text of the divisor (million Btu...) is dependent on the choice of process variable selected under the “*Process Rate Parameter*” heading of the “*Emissions / Concentration*” area of the “*Method Setup*” tab.

<i>ppm</i>	Concentration, parts per million.
<i>ppm@7%O2:</i>	Concentration, pounds per million corrected to 7% O <sub>2</sub> .
<i>Lb/mmBtuO2</i>	The pounds per million Btu of fuel combusted when calculated using one of the F-factors.

## Performance Specification Data

[Click to see video on RATA Data Entry.](#)

The ERT calculates Continuous Emissions Monitoring Systems (CEMS) Relative Accuracy Test Audits (RATAs) and Calibration Drift using the instrumental test method results from ERT data entered for Method 3A, Method 10, Method 7E or Method 6c as described above and the manual entry of the continuous emissions monitoring systems data as described below. The first step in the process is the addition of at least nine test runs of the applicable reference method. The user should verify that the reference method emissions are in the same units generated by the CEMS. Next, you should click on the “**Add New Run Data**” as described in [Chapter 5: Add New Run Data – Directly](#). When you select one of the performance specifications, you will notice that the fields for “**Run Number**” and “**Run Date**” are no longer visible. Clicking on “**Add Run Data**” will create the forms for documenting the performance specification. To enter data into the performance specification forms you should select the performance specification from the “**Select Location – Method**” menu. The performance specification “**Run Data Details**” screen as shown in **Figure 72 - Performance Specification Run Data Details** will be displayed.



<b><i>RA Start Date:</i></b>	This is the date of the first test run for evaluating the relative accuracy of the CEMS.
<b><i>RA End Date:</i></b>	This is the date of the last test run for evaluating the relative accuracy of the CEMS.
<b><i>PPMv Standard:</i></b>	This is the emissions limitation standard when the measured pollutant is not corrected for dilution.
<b><i>Oxygen Correction:</i></b>	This is the oxygen concentration used to standardize the concentration values for the measured pollutant.
<b><i>PPM@O2 Standard:</i></b>	This is the emissions limitation standard when the measured pollutant is corrected for dilution using the measured oxygen concentration.
<b><i>Lb/Hr Standard:</i></b>	This is the emissions limitation standard when the measured pollutant is expressed as an hourly emissions rate.
<b><i>Lb/MMBTU Standard:</i></b>	This is the emissions limitation standard when the measured pollutant is expressed as a ratio of the mass emissions per unit of fuel energy.
<b><i>Run:</i></b>	These are the run numbers which are pre-populated from the reference test method for the pollutant and the parameter used for correcting the pollutant.
<b><i>Run Date:</i></b>	These are the dates of the test runs which are pre-populated from the reference test method for the pollutant and the parameter used for correcting the pollutant.
<b><i>Start Time:</i></b>	These are the start times of the test runs which are pre-populated from the reference test method for the pollutant and the parameter used for correcting the pollutant.
<b><i>End Time:</i></b>	These are the end times of the test runs which are pre-populated from the reference test method for the pollutant and the parameter used for correcting the pollutant.
<b><i>PPM:</i></b>	These are the uncorrected concentrations for the pollutant or diluent measured by the CEMS during the reference method test runs. These values are entered by the user.
<b><i>Lb/Hr:</i></b>	These are the emissions rates in pounds per hour for the pollutant measured by the CEMS during the reference method test runs. These values are entered by the user.
<b><i>Lb/MMBTU:</i></b>	These are the emissions factors in pounds per million Btu fuel combusted for the pollutant or diluent measured by the CEMS during the reference method test runs. These values are entered by the user.
<b><i>Exclude Run:</i></b>	This column contains boxes which may be checked to exclude runs from the relative accuracy calculations. Up to three boxes



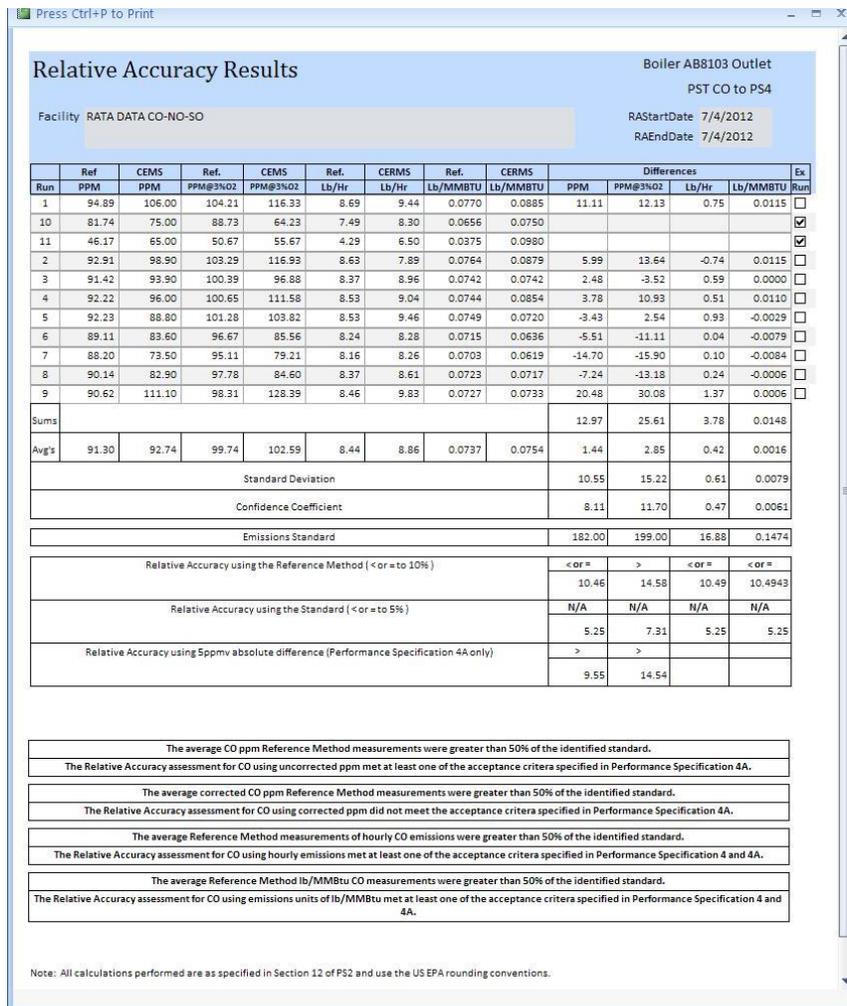
high calibration gas value and seven pairs of fields for the results of the daily low and high calibrations.

Field descriptions for the “*CEMS Cal. Drift and Run Data*” are as follows:

<b>Analyzer Span:</b>	This is the operational range of the CEM instrument.
<b>Low Cal. Known:</b>	This is the low calibration gas value for the CEMs.
<b>High Cal Known:</b>	This is the high calibration gas value for the CEMs.
<b>CD End Date:</b>	This is the date of the last day for the calibration drift assessment.
<b>Day:</b>	This is the numerical order of the consecutive days used for assessing the calibration drift results.
<b>Low:</b>	These are the results of the daily low calibrations of the CEMS.
<b>High:</b>	These are the results of the daily high calibrations of the CEMS.

After entering the required data in the tabs “*CEMS Information and Run Data*” or “*CEMS Calibration Drift Data*,” the results can be displayed. Click on the box below the data entry fields “**Relative Accuracy Results**” or the “**Calibration Drift Results**,” respectively. For the calculation of the RATA results, users are permitted to exclude up to three test runs from the calculations by checking the box in the “*Exclude Run*” column. Users which select more than three runs for exclusion will receive a pop-up warning stating that they can only exclude up to 3 runs. Also, users that do not leave nine or more runs available for calculating the relative accuracy will receive a pop-up warning stating that they must have 9 runs for the RA report. The ERT will not perform calculations if there are not nine runs remaining.

**Relative Accuracy Results**



**Figure 74 - RATA results report**

A “**Relative Accuracy Results**” report similar to **Figure 74 - RATA results report** will be produced if the “**Relative Accuracy Results**” box is selected. This report includes the ERT calculated emissions for the reference test method, the emissions the user entered for the CEMS, the differences between the reference test method and the CEMS and the averages of each of the data selected for inclusion by the user. Below the averages of the differences, the RATA results report presents the calculated standard deviation, the confidence coefficient, the relative accuracy calculations using the reference method and the relative accuracy calculations using the emissions standard. The descriptions to the left of the calculations of the relative accuracy provide a summary of the acceptance criteria and when they are to be applied. Above each of the calculated values for the “**Relative Accuracy Results**” report is one of the mathematical symbols “< or =” or “>” indicating the relative value of the relative accuracy compared to the acceptance criteria.

While the Relative Accuracy values are presented to more than two significant figures, the symbols are assigned based upon the US EPA criteria for significant figures and rounding conventions. The EPA conventions for calculating and reporting were clarified in a June 6, 1990 memorandum titled *Performance Test Calculation Guidelines* which is available at <http://www.epa.gov/ttn/emc/informd/tid-024.pdf> and reiterated in the Office of Compliance National Stack Testing Guidance which is available at <http://www.epa.gov/compliance/resources/policies/monitoring/caa/stacktesting.pdf>. Below the descriptions and relative accuracy calculations are descriptions of the decision criteria used for selecting the performance criteria calculation and a written statement comparing the calculated results to the acceptance criteria. While Figure 74 presents calculations for all units of emissions, a RATA for only one set of units will have printed results for only the units where there are standards, calculated test results and CEM data.

### Calibration Drift Results

Likewise, if the “**Calibration Drift Results**” box is selected, a report similar to **Figure 75** - Calibration Drift Results report will be produced. The “**Calibration Drift Report**” includes the measured responses for the daily calibrations at the low and high values, the differences between the responses and the calibration standard for each day, and the percent of span that the differences represent. Below the calibration drift results the report presents the criteria specified in the performance specification for acceptance.

Day	Low Response	High Response	Low PPM Drift	High PPM Drift	Low % of Span	High % of Span
1	22.00	105.00	2.00	5.00	1.33	3.33
2	19.00	95.00	-1.00	-5.00	-0.67	-3.33
3	18.00	93.00	-2.00	-7.00	-1.33	-4.67
4	20.00	100.00	0.00	0.00	0.00	0.00
5	25.00	120.00	5.00	20.00	3.33	13.33
6	20.00	100.00	0.00	0.00	0.00	0.00
7	20.00	100.00	0.00	0.00	0.00	0.00

ALL Differences Must Not Exceed 5% for Six Out Of Seven Days!

Page 1 of 1

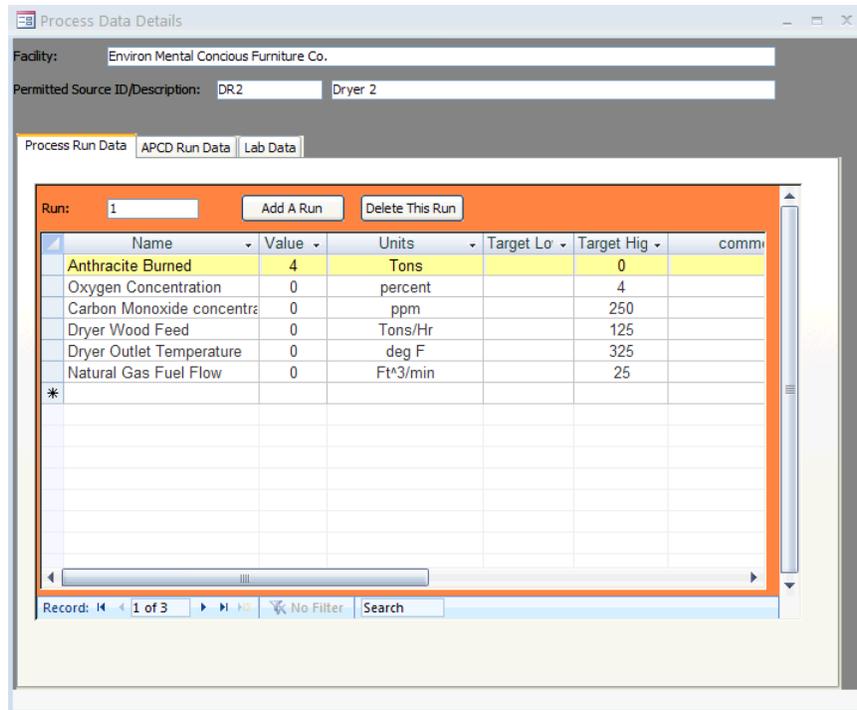
**Figure 75 - Calibration Drift Results report**

## Process Data

[Click to see video on Process Data Entry.](#)

Click the “**Process Data**” button in the “**Test Data**” area of the main menu to display the “**Process Data**” screen. This allows entry of process run data, APCD run data and lab data that was identified to be captured in the test plan.

### Process Run Data Tab



Process Data Details

Facility: Environ Mental Conciuous Furniture Co.

Permitted Source ID/Description: DR2 Dryer 2

Process Run Data | APCD Run Data | Lab Data

Run: 1 Add A Run Delete This Run

Name	Value	Units	Target Lo	Target Hig	comm
Anthracite Burned	4	Tons	0	0	
Oxygen Concentration	0	percent		4	
Carbon Monoxide concentra	0	ppm		250	
Dryer Wood Feed	0	Tons/Hr		125	
Dryer Outlet Temperature	0	deg F		325	
Natural Gas Fuel Flow	0	Ft <sup>3</sup> /min		25	
*					

Record: 1 of 3 No Filter Search

**Figure 76 - Process Data: Process Run Data Tab**

This list was created during the test plan on item 4a. (See [Process/APCD Screen](#) section for more information.)

The name, units, target low and target high are prefilled with data from item 4a, and *are not editable*. If corrections to the information shown under these columns are required, you should close this window and click on “**Process Info**” under the “**Setup / Test Plan**” area of the “**Main Menu**”. Corrections to the information in the first line which is highlighted yellow may be a default established by the selection of the SCC. However, if the name and units were established by the user during the selection of the SCC, you may be able to return to the SCC selection area under the “**Setup / Test Plan**” to revise this information. Process activity rate information (i.e., the name is a production or feed material parameter and the units have a denominator of time), consistent with a measured emissions rate calculated by the ERT may be paired with the emissions rate in the “**Emissions**” tab of “**Run Data Details**” for either an isokinetic or instrumental test method.

- Enter the value for the process name for the duration of the run. Enter comments as needed for the run.
- Move to the next or previous runs by using the navigation bar at the bottom of the screen.



**Figure 77 - Run Navigation Bar**

- Click the “**Add a Run**” button to add a new process run.
- To delete run data, highlight the row by clicking on the gray cell before cell containing the name of the run. Click on “**Delete This Run**”. The first run cannot be deleted. You should be extremely wary of deleting individual rows as this may introduce unintended consequences where this row is used to calculate a process based emissions. You may wish to use Windows Explorer to duplicate the Project Data Set prior to performing a row deletion and evaluate the results of the deletion.

*Note: Only the “Value” and “Comments” columns are active on this tab.*

### **APCD Run Data Tab**

Facility: Environ Mental Concious Furniture Co.  
 Permitted Source ID/Description: DR2 Dryer 2

Process Run Data | **APCD Run Data** | Lab Data

Run: 1    Add A Run    Delete this Run

APCDName	Value	UOM	TargetValu	comments
FABRIC FILTER	10		0	
FABRIC FILTER - MEDIUM TEMPERATURE	0		0	
BOILER AT LANDFILL	0		0	
BAGHOUSE	0		0	
*	0		0	

Record: 1 of 1    No Filter    Search

**Figure 78 - Process Data: APCD Run Data Tab**

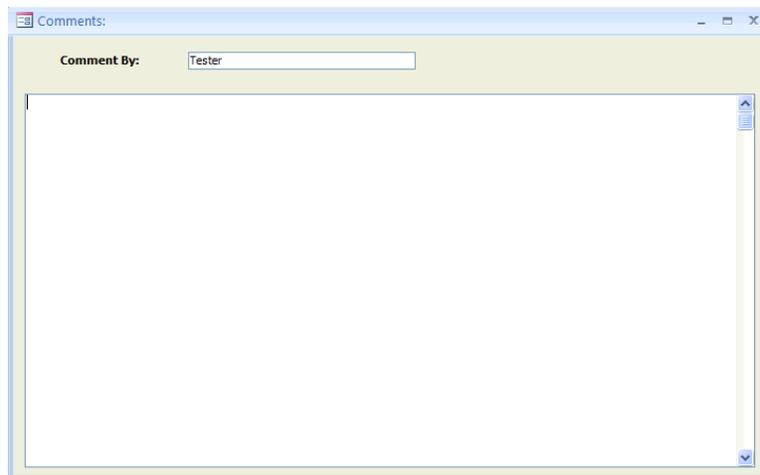


This list was created during the test plan on item 4b (see **Figure 33 - Test Plan Process/APCD Add Lab Form** section for more information).

- Enter the value for the lab data results for the parameter identified by the name for the duration of the run. You should insure that the value entered is consistent with the units of measure specified.
- Enter comments for the value entered in the lab data run as needed.
- Move to the next or previous runs by using the navigation bar.
- Click the “**Add a Run**” button to add a new process run.
- Click the “**Delete This Run**” button to delete run data.

*Note: Only the Value and Comments columns are active on this tab.*

## Tester DQ Assessment



**Figure 80 - Tester Comments Window**

Click the “**Tester DQ Assessment**” button in the “*Test Data*” area of the “*ERT Main Menu*” to allow entry of any comments from the tester on: 1) their assessment of the validity of the test, 2) the representativeness of the process operation, 3) an assessment of the achievement of the data quality objectives, 4) the use of the data quality indicators supporting the statements about meeting the DQO’s, 5) documentation on the conduct of the tests, 6) explanations of the test results, and 7) any other statements about the use of the test for other purposes.

This is a freeform text field that is unlimited in the amount of text that can be entered.

This text will be included in the printed test report.

The “*Tester DQ Assessment*” tab can be used to enter a narrative of the test plan, any deviations from methods, mishaps or problems during testing, a summary or discussion of the results, etc. *It is highly recommended that testers provide comments in this section.*

## Attachments

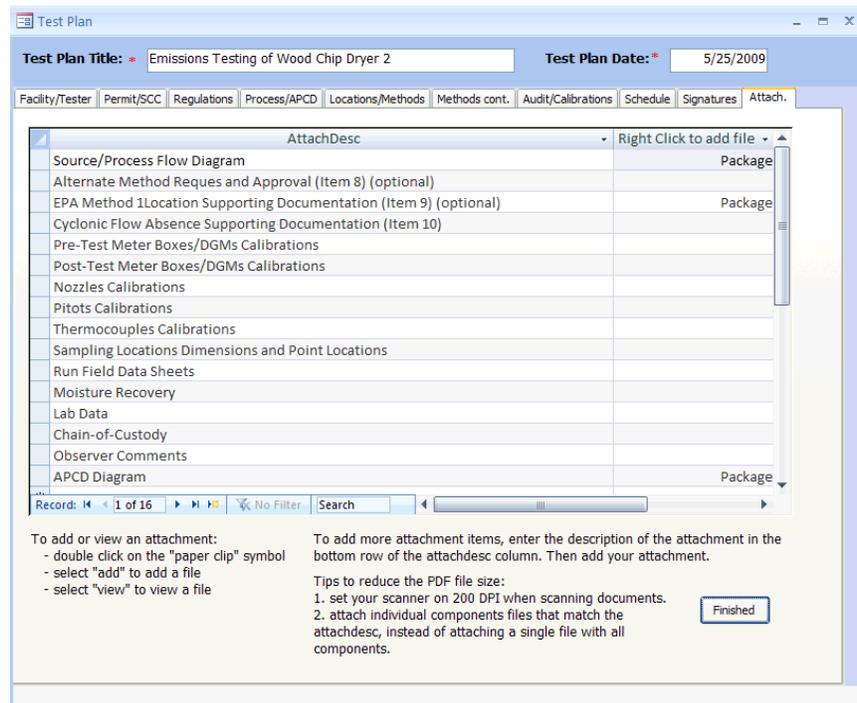


Figure 81 - Attachments Tab

Once the test data have been entered, click “**Attachments**” in the “*Test Data*” area of the “*ERT Main Menu*”. This will display the “*Attachments*” screen from the test plan.

All documents to support the test need to be included as attachments here.

See the [Attachments Screen](#) section of the Test Plan for more information on how to attach files.

## Completeness Check

[Click to see video on Completion Check.](#)

The ERT provides a means for the stack test report writer, the source test company test reviewer, the tested company representative and others to systematically review the ERT project data file for completeness prior to the creation of the “*Submission Package File*” and submission to CEDRI. The ERT checks those specific locations in the Project Data Set to determine whether text has been entered into the field for a required or optional piece of documentation or an attachment has been provided for the item.

Note: ERT will answer the salmon colored Completeness questions with a "Yes" or "No" based on the response is provided in the applicable area or a file is attached in the applicable line. Clicking in the "Click to Show ERT Data" column will show the applicable area or attachment. Selecting the "Update Completeness Answers" button will refresh the answers based on any new content entered into ERT. The Completeness answers can only be changed by entering data into the applicable areas or adding attachments. Only the Source or Testing Company can add or edit data in the Project Data Set.

Question	Answer	Comment	Click to Show ERT Data
Is a full description of the process and the unit being tested (including installed controls) provided?	Yes		[Test Plan Item 7a & 7b) - Review process documentation.
Has a detailed discussion of source operating conditions, air pollution control device operations and the representativeness of measurements made during the test been provided?	Yes		Review the source/testers Test Data Quality Assessment.
Were the operating parameters for the tested process unit and associated controls described and reported?	Yes		Review Process Run Data.
Is there an assessment of the validity, representativeness, achievement of DQO's and usability of the data?	Yes		Review the Tester's DQ assessment
Have field notes addressing issues that may influence data quality been provided?	No		Review Field Notes.
Have the following been included in the report: Dry Gas Meter (DGM) calibrations, pitot tube and nozzle inspections?	No		Review calibration documentation.

**Figure 82 - Completeness Check: Quality Assessment Questions**

As shown in **Figure 82**, the “*Quality Assessment Questions*” are in the salmon colored column with the ERT provided response in the next column. There are three groups of questions: The first group is for information about the facility and general test report documentation; The second group is about documentation of manual or isokinetic test methods; and the third group is about documentation of instrumental test methods. Users can not change the questions. Nor can the user change the ERT provided response. The user can cause a change in the response by entering information in the required field or providing the supporting documentation in the attachments area. The “*Completeness Check*” screen includes a “*Note*” providing general instructions for using this function of the ERT. This screen also includes a column labeled “*Comment*” where the Facility representative or their contractor may provide supplementary information. Any comment(s) provided will not affect the ERT’s response to the question but may provide the Regulatory Agency Reviewer with information that they may not otherwise know. The last column identifies what area of the ERT contains the documentation necessary for assessing the proper response to the question. Clicking in the cell identifying the ERT area will open the item identified. Once open, the information or attachment may be reviewed, revised or added as necessary. You will not see a change in the response to the question until you click in the “**Update Completeness Answers**” which will force the ERT to update the responses.

A more detailed list of questions is available for State/local agencies to use as a checklist for their review of the test report. Users preparing the report for submission may use this more detailed list of questions to more completely assess the completeness of the documentation provided to support the representativeness, precision and accuracy of the test report. The preparer of the test report should not respond to this more detailed list of questions as they are intended only for State/local agency source test assessment.

## Report Verification

**Final Test Report Verification**

**Permitted Facility Representative**

Name: Terrence M. Welch  
 Title:   
 Company: BP - Decatur Works  
 Email:   
 Date Signed: 4/4/2012

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this test report are true, accurate, and complete.

**Testing Company Representative**

Name: Jeremy Hutchens  
 Title: Project Manager  
 Company: Alliance Source Testing, LLC  
 Email: jeremy.hutchens@stacktest.com  
 Date Signed: 4/4/2012

I have reviewed all testing details and results in this test report and hereby certify that the test report is authentic and accurate.

**Figure 83 - Final Test Report Verification Window**

Click the “**Report Verification**” button in the “**Test Data**” area of the “**ERT Main Menu**”. The two types of reviewers are as follows:

- **Permitted Facility Representative:** The person authorized to represent the facility being tested. Enter the representative’s name, title, company and date reviewed.
- **Testing Company Representative:** The person authorized to represent the testing company. Enter the representative’s name, title, company and date reviewed.

**Note:** This is NOT an electronic signature! The person submitting the final ERT file to EPA’s Central Data Exchange (CDX) will be required to register as a report submitter for the facility and receive an Cross-Media Electronic Reporting and Recordkeeping Rule (CROMERR) compliant electronic signature agreement which will allow that individual to provide an electronic signature with the submission of the file to EPA through the CDX.

## Chapter 6: Test Plan Review

### Test Plan Review

[Click to see video on State Plan Review.](#)

The screenshot displays a web-based form titled "Test Plan Review". The form is organized into several sections:

- Test Plan Title:** Emissions Testing of Wood Chip Dryer 2
- Test Plan Date:** 1/2/2014
- Regulatory Agency Review Accepted (Yes, No, N/A):** Yes
- Facility/Permit:** Includes tabs for Locations/Methods, Regulations, Process/APCD, Methods cont., Audit/Calibrations, Schedule, Reviewers, and Attach.
- Facility Name:** Environ Mental Concious Furniture Co.
- Address:** 666 66th St N Ave, Boisenberry, NC 27854-4866, Alleghany Co.
- Contact:** Enviro M. Concius, (919) 666-2626, enviro.concius@enviroconcius.com
- Industry /SCC/NAIS:** 30701415
- FRS:** 110020338963
- State ID:**
- Lat./Long.:** 47.521947, -111.181064
- Air Permit Number:** NC666-1234
- Permitted Source ID and Name:** DR2, Dryer 2
- Permitted Maximum Process Rate:** 175 Tons per Hour
- Maximum Normal Operation Process Rate:** 150 Tons per Hour
- Target Process Rate for Testing:** 125 Tons per Hour
- Operational Hours Per Year:** 2000
- Testing Company:** View Test Company Certification, Emissions Factors & Policy Applications Group
- Address:** OAQPS/EMAD (C312-02), Research Triangle Park, NC 27711
- Contact:** Ronald E. Myers, (919) 541-5407, myers.ron@epa.gov
- Project No.:**
- SCC/Desc.:** 10300103, External Combustion Boilers - Commercial/Institutional - Anthracite Coal - Hand-fired
- Facility Info:** Yes
- Test Co. Info:** Yes
- Source Info:** No

**Figure 84 - Test Plan Review Screen**

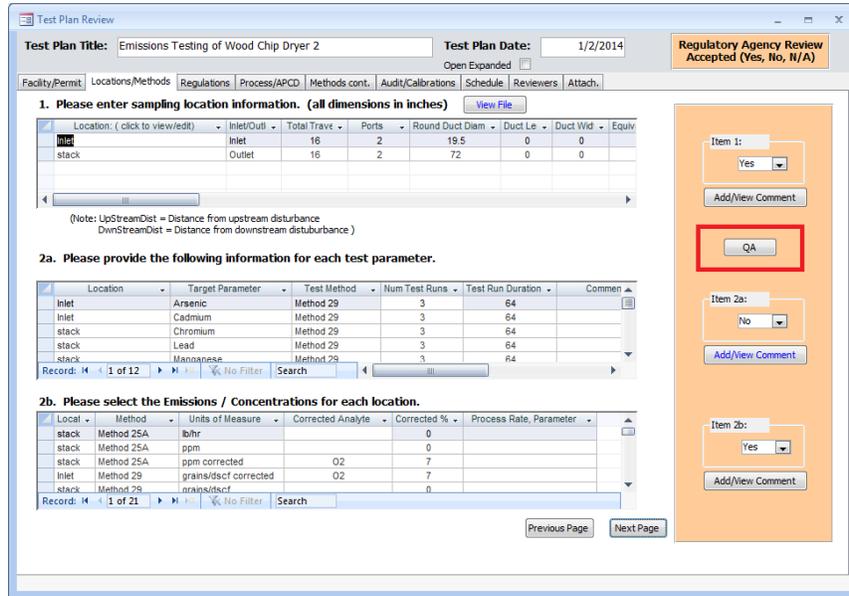
This section of the ERT may be used by a person evaluating the proposed source test protocol and if necessary identifying areas requiring improvement. Generally, if performed, the evaluation is performed by a regulatory agency employee. Upon receipt of a completed test plan, the reviewer (typically the state or other delegated authority) may access the database by selecting the appropriate project data set (see *Selecting a Project Data Set* section for more information on selecting a project data set) and clicking “**Test Plan Review**” in the “*Test Plan Review*” area of the “*ERT Main Menu*”.

The test plan will be displayed in a split window that contains the test plan as submitted for review on the left side and several areas with check boxes and buttons to access comment areas on the right side. Each of the areas are associated with key elements of the test plan. The left side of the test plan review is nearly identical with respect to the tabs identifying the type of information and the layout of information contained on each tab area to the test plan. This provides an organized “*step-through*” process for the test plan review.

Select “*Yes*” or “*No*” on each section based on whether the information provided is acceptable or not. If “*No*”, click the “**Add/View Comment**” button to explain why the information is not acceptable and request what additional information is needed.

Upon completion, update the “*Submittal History*” and return the Project Data Set to the tester. (See the [Project Submittal History](#) section for more information on how to update the history).

**Test Plan Review Locations/ Methods**

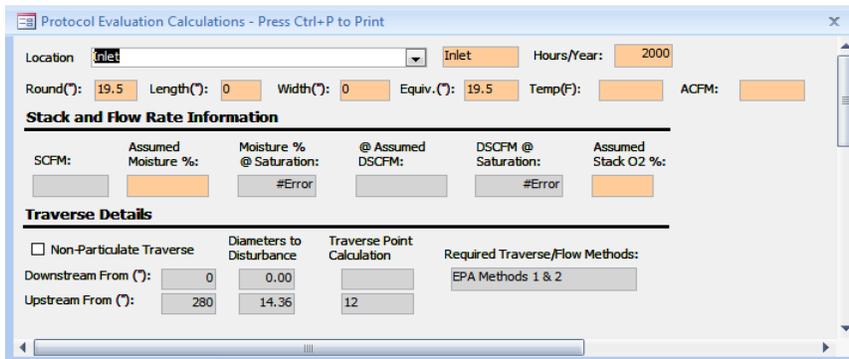


**Figure 85 - Test Plan Review Locations/Methods Tab**

For Item 1, the reviewer will select “Yes” or “No” on each section depending on whether the information provided is acceptable or not. If “No”, click the “Add/View Comment” button to explain why the information is not acceptable and request what additional information is needed.

In Item 1, below the “Yes” or “No” response, click on the “QA” button, as the red box in **Figure 85** indicates, to open the quality assurance calculations screen. The “*Protocol Evaluation Calculations*” screen will open. There are two sets of results for the calculations depending on the selection of location as “inlet” or “stack.”

**QA – Inlet**



**Figure 86 - QA - Inlet Protocol Evaluation Calculations**

In the “**Protocol Evaluation Calculations**” screen, select the “**Location**” as “inlet”. The calculations from the data as provided in Item 6 will fill the orange fields. The calculations based on the data entered in the “**Regulations**,” “**Locations**,” “**Methods**” and “**Concentrations**” areas of the test plan will fill the gray fields. Use the calculations to determine whether or not the proposed sampling protocol is acceptable.

The fields are as follows:

<b>Hours/Year:</b>	Hours location operates in a year.
<b>Round (“):</b>	Round duct diameter in inches.
<b>Length(“):</b>	Duct length or depth measured in inches.
<b>Width(“):</b>	Duct width measured in inches.
<b>Equiv.(“):</b>	Equivalent diameter of a rectangular duct.
<b>Temp.(F):</b>	Temperature in degrees F.
<b>ACFM:</b>	Actual cubic feet per minute.
<b><u>Stack and Flow Rate Information:</u></b>	
<b>SCFM:</b>	Source gas emission rate in cubic feet per minute.
<b>Assumed Moisture %:</b>	Assumed percentage moisture.
<b>Moisture % @ Saturation:</b>	Calculated moisture content of saturated gas stream percentage.
<b>@ Assumed DSCFM:</b>	Assumed percentage moisture at point of dry standard flow rate in cubic feet per minute.
<b>DSCFM @ Saturation:</b>	Dry standard flow rate in cubic feet per minute.
<b>Assumed Stack O<sub>2</sub> %:</b>	Oxygen concentration of sampled gas stream, percentage.
<b><u>Traverse Details:</u></b>	
<b>Non-Particulate Traverse:</b>	Checked if “ <b>Yes</b> ” if the test location includes non-particulate traverse.
<b>Downstream From (“):</b>	Distance to downstream disturbance in inches.
<b>Upstream From (“):</b>	Distance to upstream disturbance in inches.
<b>Diameters to Disturbance/Downstream:</b>	Number of equivalent diameters to the downstream disturbance.
<b>Diameters to Disturbance/Upstream:</b>	Number of equivalent diameters to the upstream disturbance.
<b>Traverse Point Calculation/Downstream:</b>	Calculated number of traverse points from downstream disturbance.
<b>Traverse Point</b>	Calculated number of traverse points from

**Calculation/Upstream:** upstream disturbance.

**Required Traverse/Flow Methods:** Required Method for calculation of flow rate.

*Note: Fields with “#Error” is a result of missing or incomplete run data.*

**QA – Stack**

The screenshot shows the 'Protocol Evaluation Calculations' software interface. Key sections include:

- Location:** Stack, Hours/Year: 2000
- Round/Length/Width/Equiv./Temp/ACFM:** Round: 72, Length: 0, Width: 0, Equiv.: 72, Temp: 88, ACFM: 100
- Stack and Flow Rate Information:** SCFM: 96.7, Assumed Moisture %: 13.0, Moisture % @ Saturation: 4.5%, @ Assumed DSCFM: 84.1, DSCFM @ Saturation: 92.4, Assumed Stack O2 %: 13.0
- Traverse Details:** Includes diameters to disturbance and traverse point calculation.
- Parameters of Interest:** EPA Method 25 vs 25A table with columns for Inlet VOC lbs, % Carbon, % Production, CE, DE, and Outlet ppm.
- Reporting Threshold Allowables:** Table with columns for Parameter, Method, USE, Reporting lbs/yr, Lbs/hr, SOTA lbs/yr, Lbs/hr, Reporting Lbs/h, SOTA Tons/yr, Lbs/hr.
- Metals:** Table with columns for Parameter, Lb/Hr Limit, ug/train, ICAP, AAS/CVAAS, GFAAS, ICPMS, Anal. ug/ml, mg/dscm %O2.
- Organics & Gases:** Table with columns for Parameter, Sample Volume (L), Impinger Start Volume (mls), Lb/Hr Limit, MW, ppm limit, Solubility, Boiling Point, Polar, ug/Train, Imp. ugs.

**Figure 87 - QA - Stack Protocol Evaluation Calculations**

In the “*Protocol Evaluation Calculations*” screen, select the “*location*” as “*stack*”. The calculations from the pre-selected data as provided in Item 6 will fill the orange fields. Currently editable fields have white background. The calculations based on the data entered in the “*Regulations*,” “*Locations*,” “*Methods*” and “*Concentrations*” areas of the test plan will fill the fields with gray background. Use the calculations to determine whether the state review is accepted or not.

The red background of the “*USE*” column under “*Reporting Threshold Allowables*” is the values which the tester/reviewer should use in calculations of the selected method. This calculated value is based on a New Jersey formula using the look-up values in the following columns.

Check the box if the test-run includes non-particulate traverse.

The editable fields beneath the comparison of *EPA Method 25 vs. 25A* determine the calculation of the outlet ppm.

The editable fields in the “*Metals*” section include the run duration (hr), the front half sample volume, and the back half sample volume. They directly affect the calculations in the gray boxes. The columns beneath “*ICAP*,” “*AAS/CVAAS*,” “*GFAAS*” and “*ICPMS*” can have either a green, yellow or red background. The green color indicates the estimates for the calculated values fall within EPA measurement capabilities at the compliance limits. Red indicates that the calculated values fall outside the EPA measurement capabilities at the compliance limits. Yellow indicates there is a potential issue somewhere within the proposed test protocol or analytical finish. It may indicate that the estimated values for the test run or analytical finish are close to the measurement capabilities of the selected combination compared with the compliance limits.

The editable fields of organics & gases include the sample volume (L) and the impinger start volume (mL). The changes affect the calculations for the parameter.

The fields below the calculations for inlet are as follows:

**Parameters of Interest:**

**Grains \* 64.799 = mgs:** The conversion of grains to milligrams.

**Lb/hr limit:** The flow limit in lb/hr of location of run.

**Mg/30cf:** The milligrams per sample rate, where the minimum is 30 cubic feet.

**EPA Method 25 vs. 25A**

**Inlet VOC lbs:** The pounds of volatile organic compounds in inlet stream.

**% Carbon:** The percent of weight fraction of carbon in VOC.

**% Production:** The percent of carbon of VOC (i.e., %carbon \* Inlet VOC).

**CE:** The capture efficiency typically from permit.

**DE:** The destruction efficiency, typically found on permit.

**Outlet ppm:** The emission of carbon through outlet in parts per million. If emission is less than 50 ppm carbon, select Method 25A. If emission is greater than 50 ppm carbon, select Method 25.

**Reporting Threshold Allowables:**

**Parameter:** The analyte/ target parameter reported.

**Method:** The allowable test method for the analyte.

**USE:** The calculated value based on the New Jersey lookup table values following.

**Reporting lb/yr:** The look up values for number of reported pounds per year.

**Lbs/hr:** The analyte allowable pounds per hour.

<b><i>SOTA lbs/yr:</i></b>	The analyte value in lbs per year in state-of-art stack.
<b><i>Lbs/hr:</i></b>	The analyte in pounds per hour in state-of-the-art stack.
<b><i>Reporting lb/hr:</i></b>	The reportable analyte in pounds per hour in state-of-the-art stack.
<b><i>SOTA tons/year:</i></b>	The analyte measurement in tons per year in state-of-the-art stack.

**Metals:**

<b><i>Run Duration (hr):</i></b>	The number of hours of duration of the run. The selection will affect the calculations of the table below.
<b><i>Front Half Sample Volume:</i></b>	Select the volume of the front half of the stack in run. The selections are from 30 to 500 in increments of 5.
<b><i>Back Half Sample Volume:</i></b>	Select the volume of the back half of test sample of the stack in run. The selections are 25 to 500 in increments of 5.
<b><i>Parameter:</i></b>	The test analyte being measured.
<b><i>Lb/hr limit:</i></b>	The test analyte's test limit in pounds per hour.
<b><i>Ug/train:</i></b>	Micrograms of analyte per sampling train.
<b><i>ICAP:</i></b>	The calculated Inductively Coupled Argon Plasma.
<b><i>AAS/CVAAS:</i></b>	The Atomic Absorption Spectrometry technique utilizing Cold Vapor Atomic Absorption Spectrometry detection technique of measuring the analyte in lower concentration ranges.
<b><i>GFAAS:</i></b>	The Graphite Furnace Atomic Absorption Spectrometry technique utilizing graphite furnace technique of measuring the analyte in lower concentration ranges.
<b><i>ICPMS:</i></b>	The Inductively coupled Plasma/Mass Spectrometry technique for measuring trace amounts of the analyte.
<b><i>Anal. Ug/ml:</i></b>	The calculated value of micrograms per milliliter of the analyte.
<b><i>Mg/dscm 7% O<sub>2</sub>:</i></b>	The micrograms of analyte particulate per dry standard cubic meter corrected to 7% O <sub>2</sub> .

**Organics & Gases:**

<b><i>Sample Volume (L):</i></b>	Select the test sample volume collected in liters. The list range is from 15 to 180 in increments of 15.
<b><i>Impinger Start Volume (mls):</i></b>	Select the volume in the impinger at the start of the test, measured in milliliters. The range is from 0 to 20 in increments of 1.
<b><i>Parameter:</i></b>	The test run selected parameters for organics and gases.
<b><i>Lb/hr Limit:</i></b>	The pre-selected pound/hour limit of the parameter.
<b><i>MW:</i></b>	The calculated molecular weight of the parameter.

<b><i>ppm limit:</i></b>	The calculated approximate parts per million of the parameter.
<b><i>Solubility:</i></b>	The calculated solubility of the parameter, if applicable.
<b><i>Boiling Point:</i></b>	The calculated boiling point of the parameter, if applicable.
<b><i>Polarity:</i></b>	The calculated polarity of the parameter, if applicable.
<b><i>ug/Train:</i></b>	The approximate calculation of micrograms per sampling train.
<b><i>Imp ugs:</i></b>	The calculated micrograms of the impinger.

## Chapter 7: Test Data Review

All of the access buttons for test data review appear on the “*ERT – Main Menu*”. They include “**Regulatory Field Observation Documentation**,” “**Regulatory Assessment of Supporting Documentation**,” “**Emissions Results**” and “**Comprehensive Regulatory Test Assessment**”.

### Obtaining Test data for Review

Test data can be obtained for review in two ways:

1. If an ERT submittal package was submitted through EPA’s Central Data Exchange (CDX), the data can be accessed in WebFIRE (see instructions below).
2. States or other delegated authorities can review test data if the ERT file is sent to them (via email, CD, etc).

### How to Obtain and View ERT Submissions to WebFIRE

1. Go to EPA’s WebFIRE site: <http://cfpub.epa.gov/webfire/>.
2. Scroll down to the paragraph titled “Search and Retrieve WebFIRE Report Submissions”
3. Click the “*Search for reports*” text below the list of available search criteria.
4. A page with the available search criteria as shown in **Figure 88** will be displayed.

Start Date  (MM/DD/YYYY)

End Date  (MM/DD/YYYY)

*Start and End Date refer to a span of time that the files were submitted to EPA*

Facility Name

State 

- NEW JERSEY
- NEW MEXICO
- NEW YORK
- NORTH CAROLINA

 Control-Click for multiple selections

County 

- NC - Alamance
- NC - Alexander
- NC - Alleghany
- NC - Anson

 Control-Click for multiple selections

City

Zip Code

Report Type(s)

FRS ID

SCC

Figure 88 - WebFIRE Search Criteria

5. Enter your desired search criteria and click the “**Submit Search**” icon OR you can leave the search criteria fields blank (this may result in a long list of files). Currently, four types of reports are available in WebFIRE. If you limited your search to “*Performance Test Reports*,” the last column will only have “*ERT*” as the “**Report Type**.” The results of your search as shown in **Figure 89** will be displayed. You can adjust the column widths to see more or all of the text and you can click on the column heading to change the order of the displayed results.

The following acronyms are used to designate the report type in the results table:

ERT = Performance test reports  
 EVAL= Performance evaluations  
 NCOS = Notification of compliance status reports  
 AER = Air emissions reports

### Report Search Results

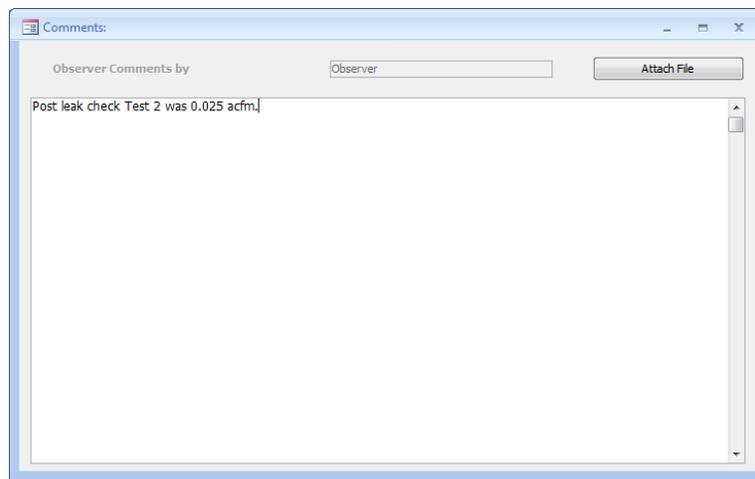
Organ...	Facility	City	State	County	Submission Date	Document Name	Size (Bytes)	Report Type
AIR A...	Lehigh Cement Company	Union Bridge	MD	Carroll	08/07/13	Lehigh Cement Company 08-07-2013...	3066893	ERT
AIR C...	Arcelor Mittal Weirton LLC	Weirton	WV	Hancock	09/19/13	Arcelor Mittal Weirton LLC 09-19-2013...	970197	ERT
AIR C...	Lehigh Cement Company LLC	York	PA	York	06/14/13	Lehigh Cement Company LLC 06-14-2013...	1773958	ERT
AIR C...	Argos USA Harleyville Plant	Harleyville	SC	Dorchester	07/25/13	Argos USA Harleyville Plant 07-25-2013...	37053495	ERT
AIR C...	Lafarge Whitehall Cement Plant	Whitehall	PA	not provided	10/29/12	Lafarge Whitehall Cement Plant 10-29-2012...	11566809	ERT
AK ST...	AK Steel Middletown Works	Middletown	OH	Butler	01/23/13	AK Steel Middletown Works 01-22-2013...	4069041	ERT
AMERL...	AEP John W. Turk Jr. Power Plant	Fulton	AR	Fulton	07/30/13	AEP John W. Turk Jr. Power Plant 07-30-2013...	15953629	ERT
ARCEL...	ArcelorMittal Indiana Harbor LLC	East Chicago	IN	Lake	12/12/13	ArcelorMittal Indiana Harbor LLC 12-12-2013...	1613961	ERT
ARGO...	Argos Cement LLC	Calera	AL	United States	07/22/13	Argos Cement LLC 07-22-2013 09-5-2013...	80579	ERT
ASH G...	Ash Grove Cement Company	Clancy	MT	Jefferson	04/26/13	Ash Grove Cement Company 04-26-2013...	3084960	ERT
ASH G...	Ash Grove Cement Company	Leamington	UT	Juab	04/10/13	Ash Grove Cement Company 04-10-2013...	11082392	ERT
ASH G...	Ash Grove Cement, Inc.	Chanute	KS	Neosho	12/18/12	Ash Grove Cement, Inc. 12-18-2012 ...	3258768	ERT

**Figure 89 - WebFIRE Search Results**

6. All files in the “*Document Name*” column are Zip files – these files contain a Project Data Set (PDS) file created by the ERT application. To review a test report, use one of the following procedures:
- Click the name of the zip file you wish to review and click “**Open**.”
  - Depending on your operating system, you can click “**Extract**”, “**Unzip**” or drag the file to a folder. This will save the file to the location you specify. Make sure you are cognizant of the location and have selected a location that you will remember.
  - Open the ERT application.
  - In the ERT, click “**Select Project Data Set**” and choose the file (it will have an extension of either .accdb or .mdb, depending on the version of the ERT that was used to create the file). You will see that the location and name of the extracted file will be displayed in the “*Current Project Data Set*” box
- OR
- Click the name of the zip file you wish to review and click “**Save**.”
  - Save the zip file to a location you will remember.
  - Open the ERT application.

- d. In the ERT, click “**Select Project Data Set**” and choose the zip file. The ERT application will extract the PDS from the zip file and store it in the same directory as the zip file. You will see that the location and name of the extracted file will be displayed in the “**Current Project Data Set**” box.
- e. **CAUTION:** Use this procedure only the first time you open the PDS. The use of this procedure will overwrite the existing PDS and you may lose any saved changes. Subsequent times that you open the PDS, using step d of the first procedure will preserve changes you made to the PDS.

## Regulatory Field Observation Documentation



**Figure 90 - Regulatory Field Observation Documentation Window**

In this tab the observations made by the “**Regulatory Agency**” field observer may provide comments directly into the text box, or attach a file that contains his/her observations of the performance of testing at the facility. (See [Attachments Screen](#) for more information on how to attach a file).

## Regulatory Assessment of Supporting Documentation

[Click to see video on Test Report Review.](#)

Question	Answer	Comment	Click to Show ERT Data
Is a description and drawing of test location provided?			(Test Plan Item 1 or Attachment) - Review dimensions and diagram.
Is there documentation that the source or the test company sought and obtained approval for deviations from the published test method prior to conducting the test or that the tester's assertion that deviations were not required to obtain data representative of operations that are typical for the facility?			(Test Plan Item 8) - Review test method documentation.
Were all test method deviations acceptable?			(Test Plan Item 8) - Assess deviations and approval documents.
Is a full description of the process and the unit being tested (including installed controls) provided?			(Test Plan Item 7a & 7b) - Review process documentation.
Has a detailed discussion of source operating conditions, air pollution control device operations and the representativeness of measurements made during the test been provided?			Review description of source operation, APCD operation and sampling for representativeness.
Is there documentation that the required process monitors have been calibrated and that the calibration is acceptable?			Review process monitoring data.

**Figure 91 - Regulatory Assessment of Supporting Documentation - QAQ's**

The “**Regulatory Assessment of Supporting Documentation**” is an extension of the “**Completeness Check**” questions. The QAQ screen as shown in **Figure 91** provides a check sheet to assist in the assessment of the test report. While there may be several reasons for the assessment, one would be for the regulatory agency to be assured that the information contained in the report is sufficiently complete, accurate and representative for the purposes which were intended. Unlike the “**Completeness Check**,” no answers have been selected. To determine the responses for the “**Completeness Check**,” the user of the QAQ screen can switch between the “**Completeness Check**” questions and the “**Regulatory Review**” questions by clicking on the two tabs. Alternatively, the screen can be expanded to show both the “**Completeness Check**” questions and the “**Regulatory Review**” questions by selecting the “**Include Completeness Questions**” box (in large red circle as shown in **Figure 92**). The “**Completeness Questions**” are highlighted with salmon colored shading and include the ERT response. In some instances, the questions are identical to those which the ERT provided a response based upon the presence of a response or attachment. However, while the ERT only checks that information has been entered in the field or that an attachment has been provided, the assessor can determine if that information provided meets the requirements for that item.

Quality Assessment Questions

Completeness Regulatory Review

Reviewer's Name:  Review Date:

Regulatory Agency:

Reviewer's Email:

Reviewer's Phone:

Note: The answers and comments associated with the Completeness Questions (salmon shaded cells) are determined by the presence of documentation provided in the test report. Responses made by the applicable regulatory reviewer (rows with no shading of the Question Field) will have precedence over automated responses made by the ERT in the Completeness assessment. Comments should be provided to substantiate any determination of sufficiency for the individual questions. The regulatory reviewer may not modify data in the Project Data Set, only answer the questions and provide comments.

Include Completeness Questions

Question	Answer	Comment	Click to Show ERT Data
Is there documentation that the required process monitors have been calibrated and that the calibration is acceptable?			Review process monitoring data.
Was the process capacity documented?			Review stated process capacity.
Was the process operating within an appropriate range for the test program objective?			Compare process rate during test with proposed range.
Were process data concurrent with testing?			Review process monitoring data.
Were data included in the report for all parameters for which limits will be set?			Compare data collected to Title V permit requirements.
Is there an assessment of the validity, representativeness, achievement of DQO's and usability of the data?	Yes		Review the Tester's DQ assessment
Did the report discuss the representativeness of the facility operations, control device operation, and the measurements of the target pollutants, and were any changes from published test methods or process and control device monitoring protocols identified?			Review the Tester's DQ assessment

**Figure 92 - Completeness and Regulatory Review Questions**

The “**Regulatory Review**” screen contains a heading to identify the name, agency, email and phone number of the individual responsible for the review. A date for the review is also available and may be selected using the calendar (small red circle) pop up. Below the heading is a “**Note**” providing a short description of the function of the “**Completeness**” question rows (salmon shaded question cells) and use of the “**Answer**” and “**Comment**” areas. Below the “**Note**” are the “**Questions**” providing a guide for the reviewer. To the right of the “**Question**” is the “**Answer**” which is selected by a drop down answer (Blank, N/A, Yes and No). None of the questions require a response since the reviewer may have higher priorities and thus limits the review to the most critical areas. In many instances, the reviewer may limit the review to the “**Emissions Results**” and a brief assessment of the ERT completeness responses, thus none of the questions will have a response. Even with a complete review of the questions, many questions may not have a response since the questions may cover a test which was not required nor conducted. If an “**Answer**” is selected, the reviewer may provide a note in the “**Comment**” column to the right of the response justifying or clarifying the response. While the reviewer’s observation may not be necessary for a blank, “N/A” or “Yes” response, it is expected that a justification and/or explanation would be provided for a negative response. There is no limit on the text length allowed in the “**Comment**” fields and you may adjust the width of the columns or the height of rows to allow you to see all of the text in the cell.

The image shows two overlapping software windows. The top window is titled 'Quality Assessment Questions' and has tabs for 'Completeness' and 'Regulatory Review'. It contains a form for reviewer information (Name, Agency, Email, Phone, Date) and a table of questions. The table has columns for 'Question', 'Answer', 'Comment', and 'Click to Show ERT Data'. The bottom window is titled 'Test Plan' and shows a detailed view of question 8, 'Describe below or attach complete documentation of any non standard test method used...'. It includes a text area with a detailed description of the test method, an 'Attach File' button, and other questions (9, 10, 11) with their respective options and buttons.

Figure 93 - Test Data Review: QAQ's Show Data

By clicking in the “*Click to Show ERT Data*” cell beside the question the test report area(s) which provide most or all of the documentation supplied by the facility is opened as shown in **Figure 93**. There are some questions which have documentation in multiple areas to fully document the parameter covered by the comment. For example there may be attachments which provide additional detail which is not provided in another area. In some cases two windows will open. In other cases you may open multiple cascading windows by clicking on the “*Attach File*” button associated with the field associated with the original item. **Figure 94** shows an example of cascading open windows. The original field in the “*Quality Assessment Question*” sheet that caused the first window to open is circled in red. This larger circle points to the window which opened and the smaller red circle identifies the button used to open the “*Attached File*” window to show the files containing additional details. You can switch between the different windows while compiling or editing the text in the “*Comment*” field or deciding on the response. It is suggested that you have some of every window which you are using visible when another window is above it to facilitate switching between windows. In some cases, when some areas of the ERT are opened, you will hear a “bell” when you try to switch

to another window. In these cases, you will need to close the higher level window in order to open the other window.

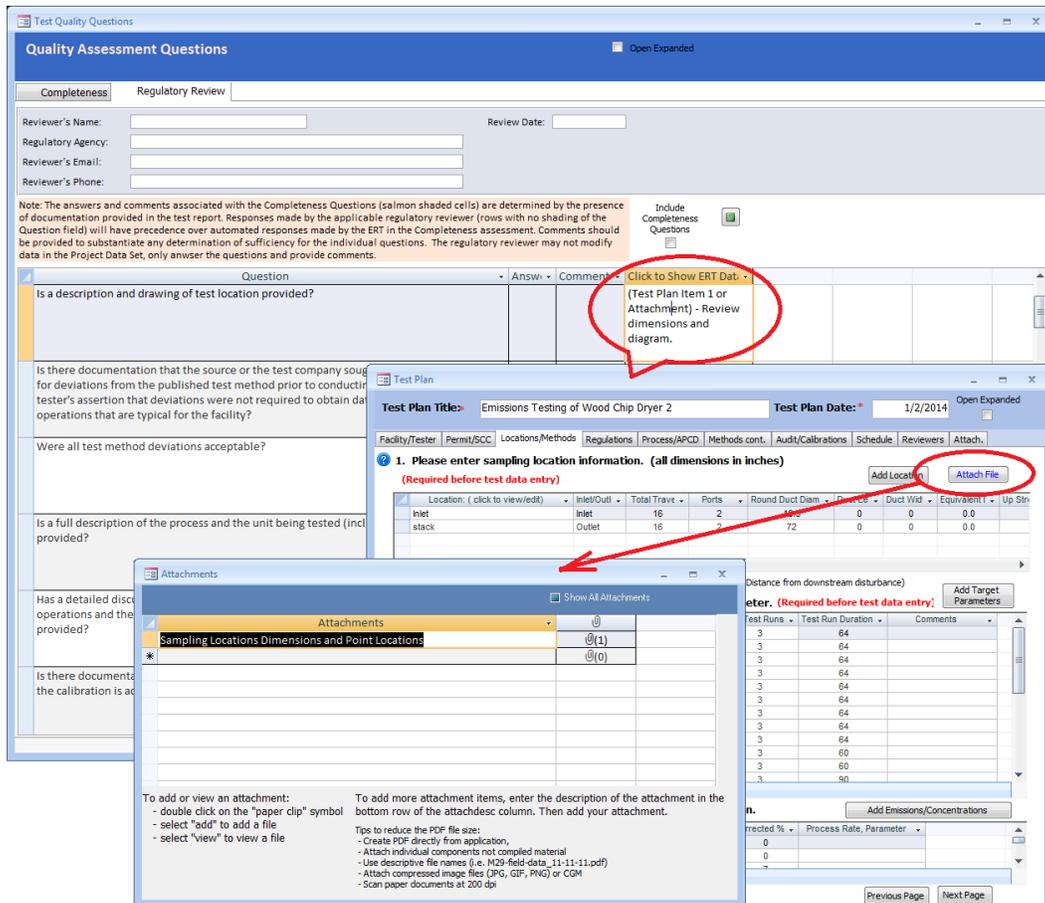


Figure 94 - Quality Assessment Questions: Multiple Windows

## Emissions Results

The screenshot displays the 'Test Report Review' window. At the top, it shows the facility name 'Environ Mental Conscious Furniture Co.' and the permitted source 'DR2 Dryer 2'. Below this, there is a section for 'Applicable State and Federal Regulations for this Test Report:' with a table listing regulations for Mercury and Arsenic. The main part of the screen is a table for 'Compound Emissions' with columns for Location, Compound, Unit of Measure, and four runs (Run1, Run2, Run3, Run Average). The table lists various compounds like Lead, Manganese, and Mercury at different locations and methods, with their respective units and measured values.

Location	Compound	Unit of Measure	Run1	Run2	Run3	Run Average
stack - Method 29	Lead	gr/dscf	8.63E-03	1.07E-02	9.52E-03	9.62E-03
stack - Method 29	Lead	gr/dscf@7%O2	1.56E-02	2.52E-02	1.92E-02	2.00E-02
stack - Method 29	Manganese	gr/dscf	8.63E-03	1.07E-02	9.52E-03	9.62E-03
stack - Method 29	Manganese	gr/dscf@7%O2	1.56E-02	2.52E-02	1.92E-02	2.00E-02
stack - Method 29	Manganese	lb/hr	2.30E+00	3.00E+00	2.12E+00	2.47E+00
stack - Method 30B	Mercury	lb/hr	5.32E-02	1.35E-02	1.20E-02	2.62E-02
stack - Method 30B	Mercury	gr/dscf	2.75E-03	6.55E-04	6.23E-04	1.34E-03
Inlet - Method 30B	Mercury	lb/hr				#Error
Inlet - Method 30B	Mercury	ug/dscm				#Error
stack - Method 30B	Mercury	Eg/hr	2.41E+01	6.12E+00	5.45E+00	1.19E+01
stack - Method 30B 3 6	Mercury	Eg/min	3.82E-01			3.82E-01
stack - Method 30B	Mercury	lb / Dry Standard Cubic Feet of E	1.33E-02	9.64E-04	1.00E-03	5.09E-03
stack - Method 30B	Mercury	ug/dscm@7%O2	1.14E+04	3.53E+03	2.58E+03	5.84E+03
stack - Method 30B	Mercury	ug/dscm	6.30E+03	1.50E+03	1.43E+03	3.08E+03
stack - Method 30B 3 6	Mercury	ug/dscm@7%O2	7.82E+02			7.82E+02
stack - Method 30B	Mercury	mg/dscm	6.30E+00	1.50E+00	1.43E+00	3.08E+00

Figure 95 - Test Report Review Screen

Upon receipt of a completed test report, you may access and review the data by selecting the appropriate project data set (see the [Selecting a Project Data Set](#) for more information on selecting a project data set) and clicking the “Emissions Results” button in the “Regulatory Agency Review” area of the “ERT Main Menu”.

The top part of the screen shows the applicable state and/ federal regulation for the test report as was entered in Item 2 of the “Regulations Screen” of the test plan section of the “ERT Main Menu”.

As shown in **Figure 95** - Test Report Review Screen, the “Emissions Results” screen provides a quick method to directly compare the measured emissions with the Regulatory requirements provided in the “Setup/Test Plan” area of the ERT. As is evident in the figure, there is a limited amount of detail associated with the test program and some additional review may be desirable for a proper assessment of the representativeness, precision and accuracy of the values shown.

The bottom part of the screen shows the emissions for each compound.

Click on the record arrows in the bottom left of the screen to scroll through the compounds.

The columns are as follows:

**Applicable State and Federal Regulations for this Test Report:**

<b>Regulation:</b>	The title of the regulation (auto-populated from information entered in the test plan).
<b>Compound:</b>	The analyte applicable in the regulation.
<b>Limit:</b>	The upper limit of the analyte concentration.

**Unit:** The unit of regulation measurement.

**All Runs for Selected Compound:**

**RunNumber:** The run number of the compound tested.

**RunDate:** The date of the run.

**Gr/dscf:** In the example in **Error! Reference source not found.**, the ncorrected parameter was selected as grain per dry standard cubic feet either in the *Test Plan*, Item 7b, or the *Test Data, Method Setup*. If the user wants to see any other parameter, go back to either of those locations and select it.

**Gr/dscf @ 7% O<sub>2</sub>:** The parameter selected corrected to 7% O<sub>2</sub>.

**Elb/hr:** Emission flow, pounds per hour.

**Other Emissions Units:** There will be other units of emissions as were established in the [Create Test Plan](#) or the Test Data [Method Setup Screen](#).

Alternatively, you may select the “**Run Data**” from the “**ERT - Main Menu**” then select the location and method to view from the “**Select Location – Method**” pick list. Accessing the test information at this level allows you to review and identify details about the individual data entered by the report preparer and or intermediate calculations or QA/QC indicators which are not available using the high level “**Emissions Results**” screen. For details on the contents of these more detailed screens, you should go to the appropriate location of this User Manual in either [Chapter 4: Create Test Plan](#) or [Chapter 5: Test Data](#).

## Comprehensive Regulatory Test Assessment

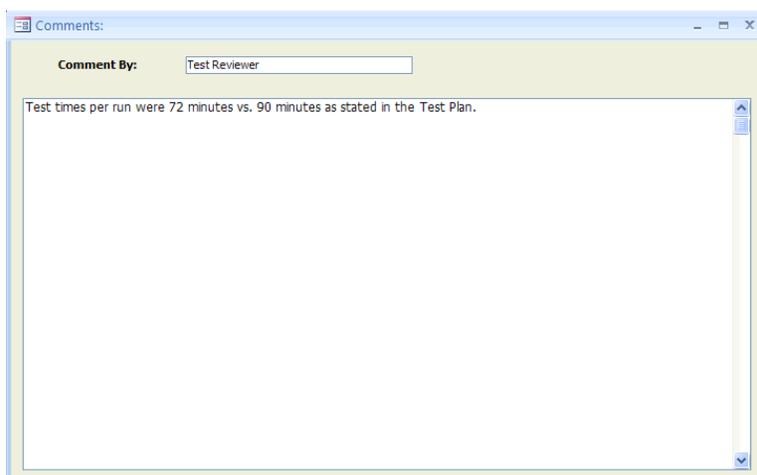


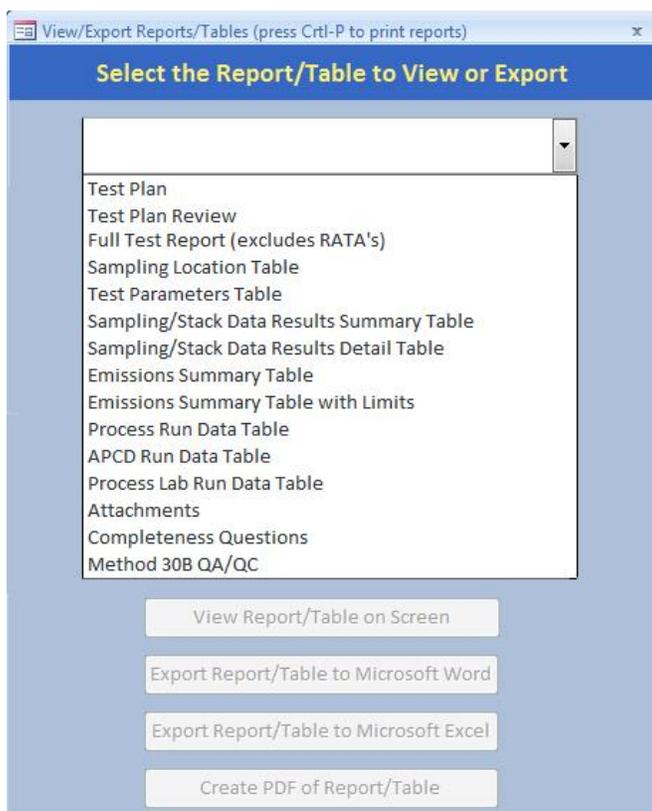
Figure 96 - Test Reviewer Comments Window

In this tab the Regulatory Agency test reviewer can enter additional comments which are not provided in the “**Regulatory Assessment of Supporting Documentation**” or provide other information which the Regulatory Authority wishes to make. Comments may be entered directly into the text box.

## Chapter 8: Printed Reports

In the “**Printed Reports**” section of the ERT “**Main Menu**,” you have the option to print whichever section(s) of the test report you choose. You can view the report or table on screen, export the report or table to Microsoft Word, or create a .pdf of the report or table. Click on the “**Select Report/Data Table**” and a screen like **Figure 97** - Report selection menu will open. The type of reports include: “**Test Plan**,” “**Test Plan Review**,” “**Full Test Report**,” “**Sampling Location Table**,” “**Test Parameters Table**,” “**Sampling/Stack Data Results Summary Table**,” “**Sampling/Stack Data Results Summary Table**,” “**Sampling/Stack Data Results Detail Table**,” “**Emissions Summary Table**,” “**Emissions Summary Table with Limits**,” “**Process Run Data Table**,” “**APCD Run Data Table**,” “**Process Lab Run Data Table**,” “**Attachments**,” “**Completeness Questions**,” and “**Regulatory Review Questions**.” There are also process detail reports for the stacks.

To print “**Relative Accuracy Results**” from the “Run Data” screen of the “CEMS Information and Run Data” tab, click on the “Relative Accuracy Results.” (See [Performance Specification Data](#) for more information). The RATA results are not included when you print the “**Full Test Report**.” As a result, you will need to add the printed RATA results to the “**Full Test Report**” pages.



**Figure 97 - Report selection menu**

## Test Plan

Press Ctrl+P to Print

**Test Plan**  
Emissions Testing of Wood Chip Dryer 2  
5/25/2009

<b>Facility Information:</b>		<b>Testing Company:</b>	
Enviro Mental Concious Furniture Co.		Emissions Factors & Policy Applications Group	
666 66th St N Ave		OAQPS/EMAD (C312-02)	
Boisenberry NC 27854-4866		Research Triangle Park NC 27711	
Contact: Enviro M. Concious		Contact: Ronald E. Myers	
Phone: (919) 666-2626		Phone: (919) 541-5407	
Fax: (919) 666-6262		Fax: (919) 541-1065	
Email: enviro.concious@enviroconcious.com		Email: myers.ron@epa.gov	
State ID:		Project Number:	
Industry NAICS: B0701415	AFS #:	FRS #:	27562
Air Permit Number: NC666-1234	Permitted Source ID/Name: DR2 Dryer 2		
Permitted Maximum Process Rate: 175 Tons per Hour	Max. Normal Operation Process Rate: 150 Tons per Hour	Target Process Test Rate: 125 Tons per Hour	
SCC / Description: 10200104	External Combustion Boilers - Industrial - Anthracite Coal - Traveling Grate (Overfeed) Stoker		

1. What is the specific purpose for the proposed testing?  
 "" Determine compliance with NSPS and State SIP emissions limitations  
 Establish CAM monitoring parameters as stated in Title V permit""

2. List all state and federal regulations that apply to the proposed testing:

Reg Description	Reg Description	Compound	Limit	Unit
Reg Desc: Test PTE		Arsenic	0.002	lb/hr

3. Will the test results be used for other regulatory purposes (e.g. emission inventories, permit applications, etc.) beyond that stated above? If yes, explain.  
 Results will be used for establishing total PM (filterable and condensable) emissions as required by State for Consolidated Emissions Reporting

4a. Enter the process data to be documented during testing.

Process Parameter	Units	Target Value	Comments
Anthracite Burned	Tons/hr	0	
PTB Test Staff	df/d	90	
Oxygen C concentration	percent	4	
Carbon Monoxide concentration	ppm	250	
Dryer Wood Feed	Tons/Hr	125	
Dryer Outlet Temperature	deg F	325	

Monday, May 25, 2009      Test Plan      Page 1 of 5

Page: 1      No Filter

Figure 98 - Final Test Plan Report Print Preview Screen

The test plan preparer must enter the information in the screens of “*Facility/Tester*” (**ERROR! reference source not found.**); “*Permit/SCC*” (Figure 18); “*Locations/Methods*” (Figure 21 - Test Plan Locations/Methods Tab); “*Regulations*” (Figure 29); “*Process/APCD*” (Figure 31); “*Methods continued*” (Figure 36 - Test Plan continued tab); “*Audit/Calibrations*” (Figure 37 - Audit/Calibration tab); “*Schedule*” (Figure 38); “*Reviewers*” (Figure 39); and “*Attachments*” (Figure 40). After these have been completed, several types of reports can be created. You begin by clicking the “*Select Report/Data Table*” button in the “*Printed Reports*” area of the “*ERT Main Menu*”. You will then see a screen like is shown in Figure 97 - Report selection menu but without

the drop down list of report types. Clicking the ▼ to the right of the white rectangle, will open the report types, such as the one shown in **Figure 98** - Final Test Plan Report Print Preview Screen.

Selecting “**Test Plan**” from the menu will activate the four buttons below the menu selection field. The four buttons are “**View Report/Table on Screen,**” “**Export Report/Table to Microsoft Word,**” “**Export Report/Table to Microsoft Excel,**” and “**Create PDF of Report/Table.**” By selecting “**View Report/Table on Screen**” a “*Final Test Plan Report*” like **Figure 98** will be created and opened on your desktop screen. You can adjust the location and size of the window and thus view the produced report. You can also magnify the size of the report and scroll around the opened page. Since only one page at a time is visible, you can see other pages of the report by clicking on the arrows at the bottom left of the screen.

You can either press “**Ctrl+P**” to print the pages to any of your available printers or you can close the window and use one of the other three options. You can produce a Microsoft Word file which approximates the document generated to the desktop screen. While the Word file may be edited to improve the appearance or correct minor imperfections, the effort to produce a desired appearance may not justify the extra effort required. You may also produce a Microsoft Excel file. This file row is not formatted to produce the document previewed but separates the individual elements which are printed into different column and rows. Lastly, you may produce an Acrobat PDF file which can be emailed, or attached to the ERT as a time stamped file for documentary purposes.

## Test Plan Review

Test Plan Section	Field ID
Facility Information	FacName
<b>Comment</b>	
The email address appears to be to someone other than the person listed as the contact. Please verify the contact persons name and email address prior to submitting the test report.	
Also, the logitude does not appear to be correct. I think that the Logitude should be a negative number. Please verify during the emission test the correct latitude and logitude for the centerline of the stack.	

Test Plan Section	Field ID
Source Information	PermittedSourceID
<b>Comment</b>	
While a targer processing rate of 90 Mmtu/hr will be acceptable for the RATA, this may limit future operations if the reference test data will be used for compliance testing and is substantially below the normal operating range.	

**Figure 99 - Agency Test Plan Review Comments Window**

Selecting “**Test Plan Review**” produces a printed report that looks like **Figure 99**. While this report may be mailed, emailed or attached to the ERT “**Project Data Set,**” this information is included in the PDS for use by both the person reviewing the plan and the preparer. While the size of the PDS of a plan makes it amenable to send as an email attachment, some reviewers may wish to transmit their review by paper or as a separate electronic file. If the agency returned the test plan comments in the PDS, the tester can click on “**Test Plan Review**” in the “**Printed Reports**” area of the “**ERT Main Menu**”. Click on the “**Test Plan Review**” button to view the agency’s comments on the test plan. No fields are editable in the comments.

The “**Project Data Set Submittal History**” will show if the agency approved the test plan or requires more information.

You can update the test plan based on the agency’s comments, update the “**Submittal History**,” and resubmit the Project Data Set.

## Full Test Report

Selecting “**Full Test Report**” will produce a file comprised of almost all of the components of a typical complete test report. The report will have a cover page with signature blocks for the facility representative and the test company representative. Reports of the RATA results are not produced during the creation of the “**Full Test Report**” and must be generated separately. Attachments like RATA results are not included in the “**Full Test Report**.” However, a list of attachments is provided in the report. If the regulatory authority requires the attachments, each attachment must be produced separately for inclusion in the file or printed report. Any changes made to the “**Test Plan**” sections to reflect as tested changes will be produced in the “**Full Test Report**.” The full data set includes all the individual report components listed below the “**Full Test Report**.” Details of the information in each of these components are described below.

## Sampling Location Table

This table includes the information related to all sampling locations. This includes the location, round duct diameter, rectangular duct length, rectangular duct width, equivalent diameter, distance from upstream disturbance, distance from downstream disturbance, number of traverse ports and minimum traverse points. These values were provided in the test plan item 6.

## Test Parameters Table

This table includes the full data set for the parameters of the test plan. This includes the location, target parameter, test method, number of test runs, test run duration, sample points and comments.

## Sampling/Stack Data Results Summary Table

This report includes a summary of all location – methods run with calculated data with average. These include isokinetic and instrumental test data. The report includes the location-method; run numbers; test dates; run start and finish times; net run time (minutes); dry gas meter volume sampled (dscf); moisture content of stack gas (%); moisture saturation at stack gas temperature (%), or moisture (%); carbon dioxide (%); oxygen (%); average stack gas temperature (degrees F); dry volumetric flow rate (dry scfm); actual wet volumetric flue gas flow rate (acfm); percent isokinetic of sampling rate(%); F-Factor (dscfm/mmBtu @ %O<sub>2</sub>); fuel type; Fw; and Fc.

## Sampling/Stack Data Results Detail Table

This report includes the details of all location – methods per run. The report includes: location-method; run number; test date; run start and finish time; net traversing points; net run time (minutes); nozzle diameter (inches); Pitot tube coefficient; dry gas meter calibration factor; barometric pressure (inches of mercury); average orifice meter differential (inches in water); dry gas meter volume sampled (cubic feet); average dry gas meter temperature (degree F); dry gas meter volume sampled (dscf); total moisture collected (g); volume of water vapor (standard cubic feet); moisture content of stack gas (%); moisture saturation at stack gas temperature (%); dry mole fraction; carbon dioxide (%); oxygen (%); carbon monoxide & nitrogen (%); fuel factor; dry molecular weight (lb/lb-mole); wet molecular weight (lb/lb-mole); flue gas static pressure (inches of water); Absolute flue gas pressure (inches of mercury); average stack gas temperature (degrees F); average velocity head (inches of water); average stack gas velocity (feet/second); stack cross-sectional area (squared feet); dry volumetric flow rate (dry scfm); actual wet volumetric flu gas flow rate (acfm); percent isokinetic of sampling rate (%); percent excess air (%); F-Factor (dscfm/mmBtu @ %O<sub>2</sub>); round duct diameter (inches); rectangular duct width (inches); rectangular duct length (inches); Fw; Fc.

## Emissions Summary Table

This summary report includes all of the compound data for each run of a location-method. For each compound, the table provides for each run the run number, Mmass (mg); gr/dscf; gr/dscf @ 7% O<sub>2</sub>; and average of these.

## Emissions Summary Table with Limits

This report is identical to the “*Emissions Summary Table*” with the addition of any regulatory emission limits which were provided in Item 4 “*Regulations*” of the “*Test Plan*.”

## Process Run Data Table

This data table contains all of the process run data. This includes the name; run number; value provided; UOM; target value; and any comments per run.

## APCD Run Data Table

This data table contains the air pollution control device data. This includes the name of the control device; run number; value provided; UOM; target value; and any comments per run.

## Process Lab Run Data Table

This data table contains the process parameters requiring lab analysis. This includes the name of the process parameter; run number; value provided; UOM; and any comments per run.

## Completeness Questions

This data table contains the list of the “Completeness Questions” describing those components of a manual test program and an instrumental test program. The ERT’s assessment of the presence or absence of each component is also provided along with any comments provided by the report preparer concerning those components described in the question.

## Regulatory Review Questions

This data table contains the list of “*Regulatory Review Questions*” which in addition to the “*Completeness Questions*” include supplementary detail questions about the presence and quality of components within those broad categories. The regulatory agency responses to the detail questions are provided as well as any comments justifying or describing the response.

## Relative Accuracy Results

Due to the complexity and variations in Relative Accuracy Tests the reports cannot be produced with the current test report generator in the ERT. To produce a report of the *RATA* results, you should open the *Run Data* area, select the Performance Specification to be printed from the “*Select Location – Method*” area of the “*Test Data Details*”, then produce the report by selecting “*Relative Accuracy Results*” at the bottom right of the screen. Once the report is shown on the screen, you can print the report to any printer available from your computers print menu. You may also depress the right mouse button then select “Export” and select one of the options. If available, selecting “PDF” replicates the report on the screen. Selecting “Word RTF file” produces a file which when imported into MS Word is usable but not easily edited to improved appearance.

The “*Relative Accuracy Results*” data table contains the reference test method results and the CEM results in the emissions concentration, rate or fuel energy units specified in the reference test method run data emissions and the CEM output, the arithmetic average of the runs performed, the individual run differences between the two measurement systems, the arithmetic averages of the differences, the standard deviations of the differences, the confidence coefficient of the differences, the relative accuracy calculated using the reference method and the relative accuracy calculated using the emissions standard.

## Method 30B QA/QC

This data table includes the list of Method 30B runs that do not meet QA/QC specifications. The report includes the stack run number, the specifications, and acceptance criteria.

## Chapter 9: Administration

### Help/ System Reports



**Figure 100 - The ERT Help /Administration Screen**

The administration area of the ERT includes a “**Help /System (Sys) Reports**” button. Clicking on the button will open the “**ERT Help / administration**” screen, as seen in **Figure 100**.

The ERT version and release date are at the top. The ERT support names and contact information is provided at the bottom. The two middle sections include buttons that provide more information or help, and websites for more information or help.

**Buttons:**

- |                                  |   |
|----------------------------------|---|
| <b>ERT Version History</b>       | The ERT Versions from oldest to most current with a listing of the descriptions of the updates.                               |
| <b>Field Result Calculations</b> | Broken down per test run tabs, a table of the field, field description, and the formula used to calculate the provided value. |

<b>Emission/Concentration Calculations</b>	A table providing the formula to provide the calculated value of emission/concentration. The table provides the emission/concentration, and the formula used.
<b>ERT User's Manual</b>	If the file "uman.pdf" is available in the folder with the ERT; the " <i>Users Manual</i> " will be accessed for the user to read. If the file is not available, an alert reminds the user to download the user's manual from the ERT website.
<b>ERT Methods and Target Parameters</b>	Clicking on this tab brings up a table that lists all source test methods which the ERT is capable of documenting. The table identifies the methods by number with their associated description and the compound(s) associated with the test method

**Web Links:**

<b><i>EPA ERT Home Page</i></b>	The ERT home page within the CHIEF web pages. <a href="http://www.epa.gov/ttn/chief/ert/">http://www.epa.gov/ttn/chief/ert/</a>
<b><i>Industry NAICS Search</i></b>	North American Industry Classification (NAICS) website. <a href="http://www.census.gov/eos/www/naics/">http://www.census.gov/eos/www/naics/</a>
<b><i>FRS Search</i></b>	Federal Registry System (FRS). <a href="http://www.epa.gov/enviro/html/fri/index.html">http://www.epa.gov/enviro/html/fri/index.html</a>
<b><i>CAS Number Search</i></b>	Chemical Name search to get the Chemical Abstract Service identifier associated with a gas or chemical. <a href="http://webbook.nist.gov/chemistry/name-ser.html">http://webbook.nist.gov/chemistry/name-ser.html</a>
<b><i>Method Information</i></b>	The main page for the Emissions Measurement Center which provides information on test methods for measuring pollutants from stationary sources and other sources. <a href="http://www.epa.gov/ttn/emc/">http://www.epa.gov/ttn/emc/</a>
<b><i>CDX Home Page</i></b>	Central Data Exchange website. <a href="https://cdx.epa.gov/epa_home.asp">https://cdx.epa.gov/epa_home.asp</a>

## **Appendix A: Calculations**

***Calculations and Decision Criteria Determinations for RATA's***

The numerous, interrelated and complex calculations and decision criteria for Performance Specifications 2, 3 and 4 for O<sub>2</sub>, CO, NO<sub>x</sub> and SO<sub>x</sub> preclude a simple listing of all the equations and logic statements in a printed document format. To document the calculations used in the ERT for the Performance Specifications, an Excel Spreadsheet is attached to this page for users to download and examine to assess the calculations, logic decisions and decision criteria. To examine or save the Excel Spreadsheet, open the attachments module of Adobe Acrobat. To open the module, click on the paper clip symbol of the left side of screen. The spreadsheet is named RATA\_Evaluation.xlsx. Click on the file and select the option desired (open in the native application or save attachment). This procedure may vary depending on the version of Acrobat that you are using.

## **Appendix B: Methods**

## **Appendix C: Frequently Asked Questions**