EHSS Standard Operating Procedure			
Subject: MODEL 7545 IAQ-CALC Indoor Air Quality Meter Operation Procedures EHSS SOP # 026 2019	Sections: All EHSS	Distribution: All EHSS Personnel
Issuing Authority: Rebecca Ponza, Director of EHSS Signature: *Rebecca J. Ponza*	Effective: November 15, 2019	Supersedes: N/A

IAQ-CALC MODEL 7545 Operational Procedures

I. **Applicability:** This Standard Operating Procedure is applicable to all Syracuse University Environmental Health and Safety Services Personnel.

II. **Purpose:** To provide a detailed set of startup instructions for EHSS staff members responsible for the operation of the TSI IAQ-CALC Indoor Air Quality Meter.

III. **Role of EHSS** The role of EHSS is to respond to and provide air monitoring during emergency response, industrial hygiene, indoor air quality, and chemical contamination operations.

IV. **Definitions:** Indoor Air Quality Meter:

- The TSI IAQ-CALC Indoor Air Quality Meter 7545 simultaneously measures and data logs multiple parameters, including carbon monoxide (CO), carbon dioxide (CO_2), temperature, humidity; and calculations are dew point, wet bulb temperature, and percent of outside air.
- Measurement ranges: CO_2 is 0 to 5000 ppm, CO is 0 to 500 ppm, temperature is $32°F$ to $140°F$, and humidity is 5% to 95% RH.

V. **Items Needed** All items are located in Lyman Hall room 034 B - Figure 1

✓ TSI MODEL 7545 IAQ-CALC Indoor Air Quality Meters (2). The meter and accessories include:
- Carrying Case
- Instrument
- Probe with built-in sensors
- USB Download Cable
- AC Power Adapter (field use)

VI. Procedures

Physical Description & User Interface:

1. The IAQ-CALC's user interface consists of the display and 8 keys as shown in the diagram below.

Menu Soft Keys

Keypad Functions

| ON/OFF Key	Press to turn the Model 7545 on and off.
Arrow (▲▼) Keys	Press to scroll through choices while setting a parameter. Pressing the ▲▼ keys simultaneously will lock the keypad to prevent unauthorized adjustments to the instruments. To unlock the keypad, press the ▲▼ keys simultaneously.
↵ (Enter) Key	Press to accept a value or condition.
ESC Key	Press to navigate backwards without saving.
Arrow (◄ or ►) and Menu Soft Keys	Press arrow keys to change choices while setting a parameter. Press the Menu soft key to select the Menu selections, which are Display Setup, Settings, Barometric Pressure, Data Logging, Applications, and Calibration.

TSI IAQ-CALC Start-Up:

2. Turn on TSI IAQ-CALC (startup) by pressing and releasing the on/off key (one click). During the power up sequence, the display will show the following: Model Number, Serial Number and Software Revision for several seconds. After the initial startup, the instrument will operate in manual/normal mode. It will not automatically begin data logging

    Note: Always check to make sure the instrument has been calibrated before using by checking the calibration sticker on the instrument.

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Display:

3. When the TSI IAQ-CAL is ready for use, the display will show the following information:
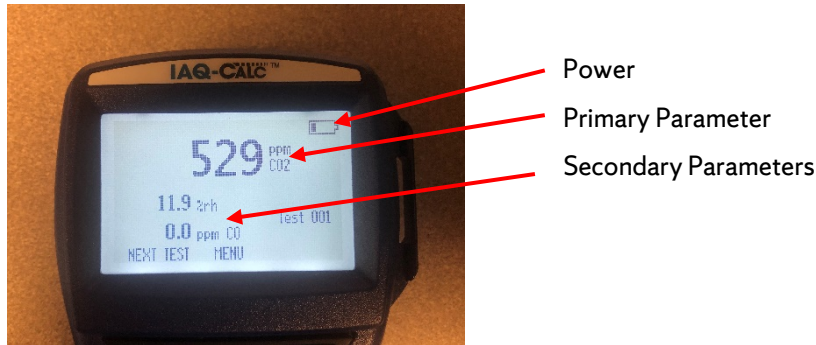
a. Power – The instrument can be powered in one of two ways: four AA batteries or the AC power adapter. When using the AC adapter, the batteries will be bypassed and the power indicator will show all four power bars. Make sure to use the AC power adapter whenever datalogging and replace the batteries if the battery power indicator is less than 50%. . The batteries are not rechargeable.

b. Primary Parameter – The display can be set up to show the desired primary parameter in a larger display. Typically CO_2 is selected as the primary parameter, but a different parameter can be selected as outlined in section 5.

c. Secondary Parameters – The display can be set up to show two secondary parameters. Typically CO and relative humidity are selected as the secondary parameters, but different parameters can be selected as outlined in section 5.

d. Menu – Press the middle soft key directly below "MENU" on the display to access menu selections (Display Setup, Settings, Barometric Pressure, Data Logging, Applications and Calibration).

e. Next Test – The meter is set up to begin datalogging by pressing the soft key directly below "NEXT TEST" on the display and then selecting the enter key. More information about data logging can be found in Section 6 of this SOP.

Positioning the Probe:

4. The probe contains the meter's passive sensors and relies on the diffusion of air through the sensors in the probe. For best results:
   - Place or keep the probe surrounded by moving air.

Parameter Selection:

5. The Primary and Secondary Parameters for display during screening can be adjusted by:
   a. Pressing the middle soft key directly below MENU.
   b. Press the enter ⏎ key to select Display Setup.
   c. The meter will display the following:

    d. Press the up/down arrow ▲▼ keys to scroll and highlight the desired parameter.

    e. When a parameter is highlighted, use the soft key to select ON/OFF.

    f. Use middle soft key to designate Primary parameter (asterisk).

    g. Press the enter ↵ key to save changes.

    h. Press the ESC key to navigate back to normal display.

Data Logging:

6. During normal operation, the meter does not automatically datalog. The following procedures will initiate datalogging.

    a. Press the left soft key directly below "NEXT TEST" on the display.

    b. Next press the enter ↵ key.

    c. The meter will begin datalogging and saving readings every 60 seconds and the following symbols will appear on the meter display:
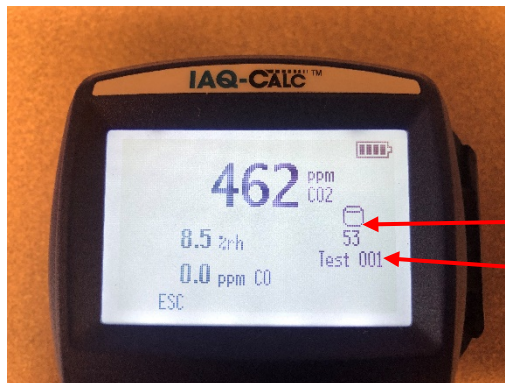
Sample Countdown

Datalogging Test Number

    d. Press the left soft key directly below ESC to stop datalogging.

Measurements collected during datalogging are independent of measurements selected for display. The meter has been set up to collect/save measurements of all parameters during datalogging.

TSI IAQ-CALC Shut-Down

7. Turn off the meter by pressing and holding the on/off key for 3 seconds.

- If plugged into the wall with AC adapter, unplug.
- Place all items in carrying case and return to Lyman room 034B.

Download Datalog to a PC:

8. In order to download the datalog to a computer, you will need the following items:

    *   EHSS Dell Laptop – BFAS-EHOLAPTOP1 – With preloaded TSI LogDat2 software.
    *   USB download cable – Located in carrying case.
    *   TSI IAQ-CALC meter

    a. Connect the meter to the laptop using the provided USB cable.
    b. Turn on the meter by pressing the On/Off key.
    c. Open the TSI LogDat2 on the laptop.
    d. A window will open saying "Please Wait" "Communicating With Instrument".
    e. Once done communicating, another window will open listing all Test ID numbers (Figure 2).
    f. Select a Test ID by clicking on it to highlight the line, then select Download Selected, or download all Tests by selecting Download All (Figure 3).
    g. A window will open to save files. Save files as Excel Workbook files in appropriate folder.

Clear Datalog:

9. The TSI IAQ-CALC meter's memory is limited. A full 5-day datalog event will use most of the meter's memory. It is important to make sure all datalog information has been downloaded and saved before returning the meter to its storage case.

    To clear datalog:

    a. Press the center soft key (MENU) to get the menu selections.
    b. Using the down ▼ arrow key, scroll to Data Logging and select by pressing the enter ↵ key.
    c. Using the down ▼ arrow key, scroll to Delete Data and select by pressing the enter ↵ key.
    d. You have the following options: Delete All, Delete Test or Delete Sample. Select appropriate choice by using the down ▼ arrow key and select by pressing the enter ↵ key.
    e. You will be asked "Are You Sure". Select the appropriate soft key.
    f. Select the ESC key to navigate back.

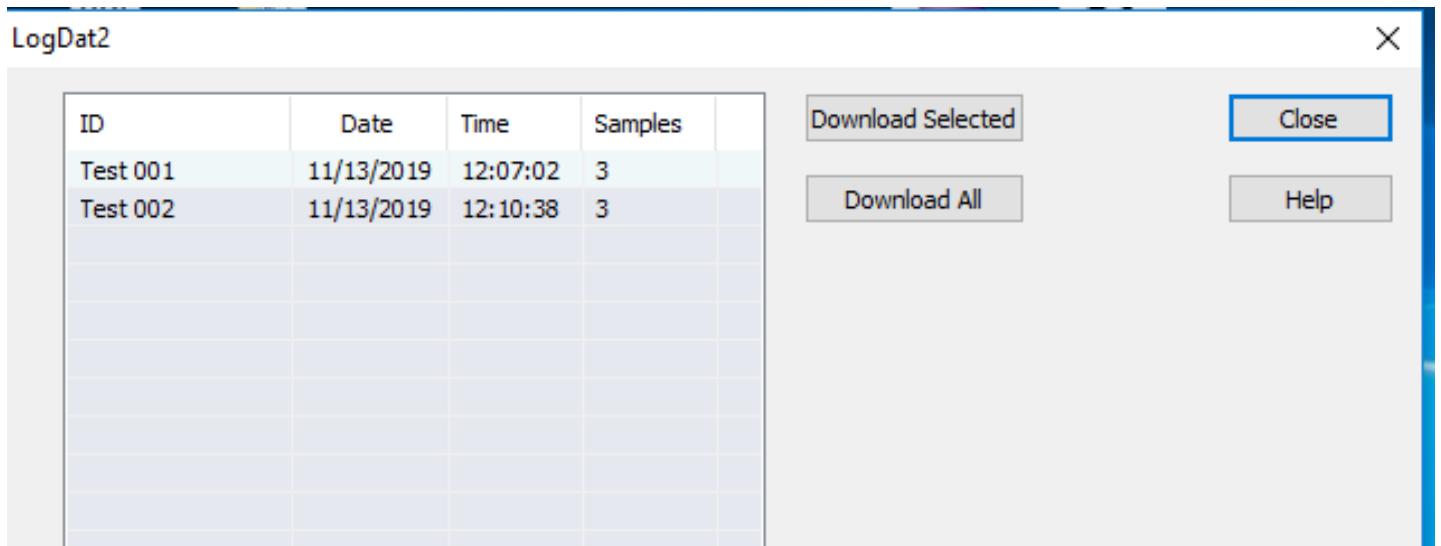G:\BFAS\EnvHlth\SOPs\All Final SOPs\EHSS 026 2019 - TSI IAQ Meter Operation.docx

Figure 1

Figure 2

Figure 3

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