



Polymath Science LLC. Graph Program

Polymath Science LLC.
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Polymath Science Graph Software

Last Update 1-14-2018

Written By: Polymath Science LLC

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Introduction

This software was designed to print CIS profiles from an Allegro and MC Miller CIS data collectors.

Installation of Polymath Science Graph Software

1. Before starting the installation you must ensure an operating system (**Windows 7, Windows 8 or Windows 10**) is installed on the computer.
2. Install **Graphing Software** by using the provided setup program. For example: The setup program can be accessed by running D:\PS Graph Setup V2.0.2.exe if the installation program resided on a CDROM or thumb drive that had the designation D:. The latest version of the program can also be found at www.pomasc.com
3. This completes the installation of the **Software**.

How to use the program

To begin using the Graph Software program, click on the desktop icon labeled PSL Graph CIS. The program will start by default with a splash screen that looks like the image shown in fig. P1.

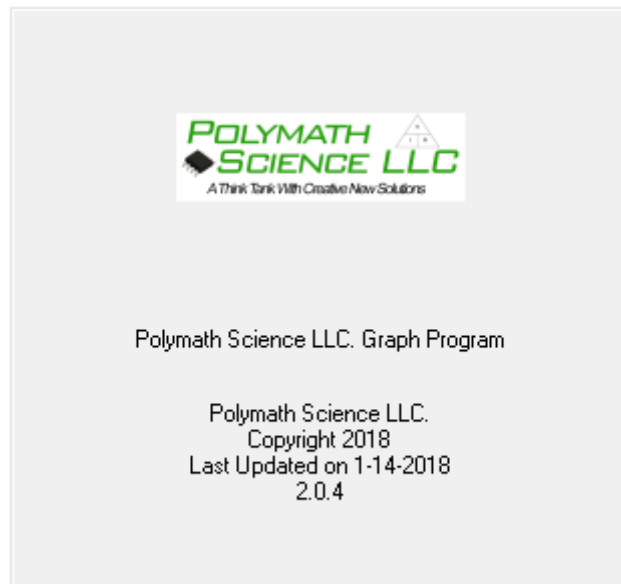


Fig. P1 Start Up Screen

To begin, simply select the "Software" Menu at the upper left of the screen and select the desired option. If this is the first time running the software refer to the "Subscribing" section in this document.

The software was written to graph CIS files from McMiller and CIS & Wave files from an Allegro data collection meters. When the file is opened the software creates a CSV file with "_PSL" at the end. This is shown in Fig. P2

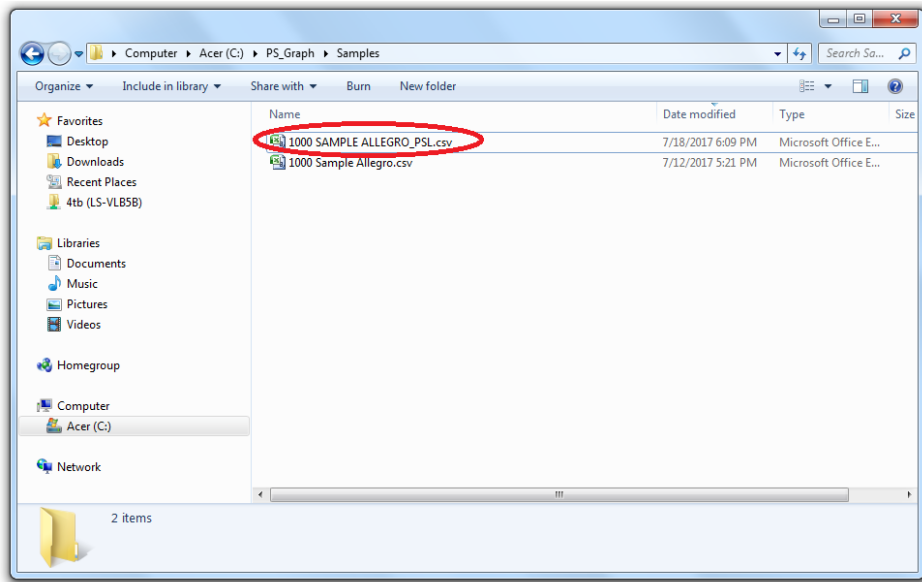


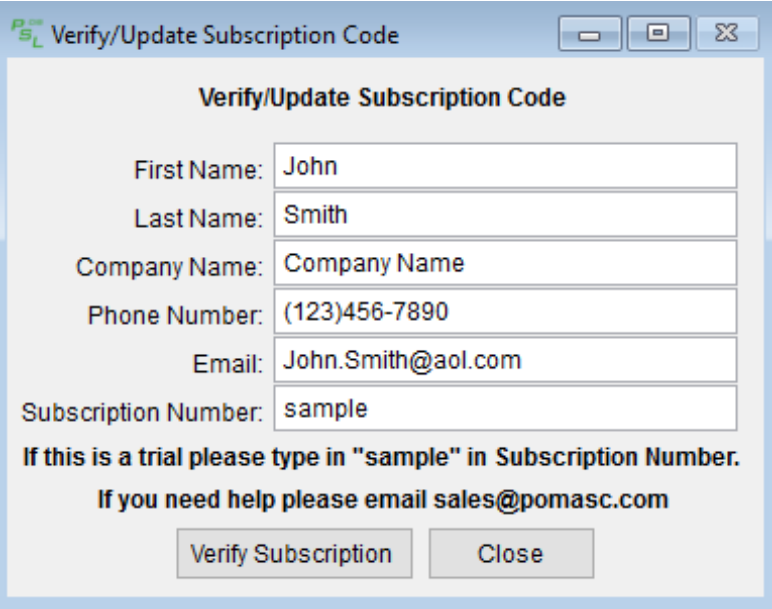
Fig. P2 "_PSL" file that is created

This file should be used to edit, re-station and modify. The meter file is NOT modified when re-stationing or any other processing. Only the "_PSL" file has the changes saved in them.

Subscribing

Adding a Subscription

Initial running of the software will prompt for a subscription number and additional information. All fields must be filled in to continue. Sampling of the software can be done by filling all fields and entering "sample" as the Subscription Number as displayed in Fig A2.



Verify/Update Subscription Code

Verify/Update Subscription Code

First Name: John

Last Name: Smith

Company Name: Company Name

Phone Number: (123)456-7890

Email: John.Smith@aol.com

Subscription Number: sample

**If this is a trial please type in "sample" in Subscription Number.
If you need help please email sales@pomasc.com**

Verify Subscription Close

Fig A2: Sample Subscribing

Once the software has successfully been subscribed, the user will be notified Fig A3. Software must be restarted at this point to continue with the new subscription.

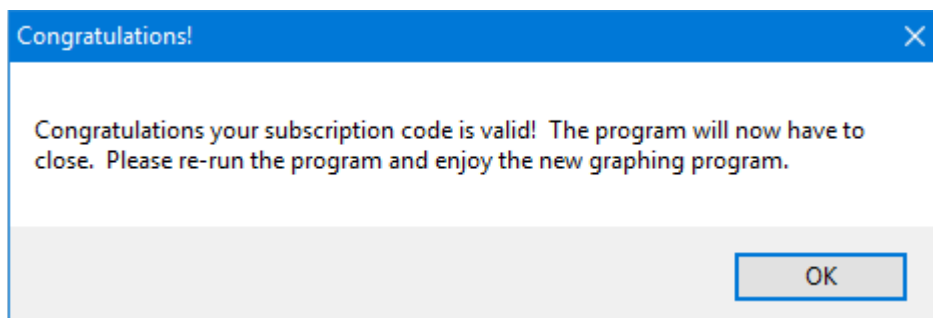


Fig A3: Successful Subscription

Frequently Asked Questions

How do Skips work?

To have the CIS graph skip graphing in the profile, have the field personnel enter the word "skip" in the comment field when entering data in the field. This is shown in the Allegro Meter file in Fig F1.

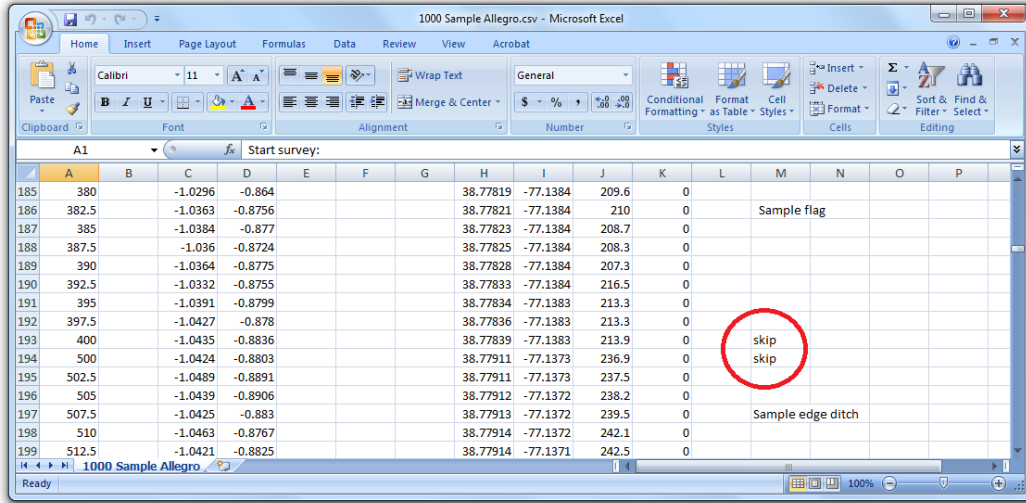


Fig F1: How a skip is entered in the Allegro Meter file

This is how the skip is entered in the PSL file under the comments field. Fig F2.

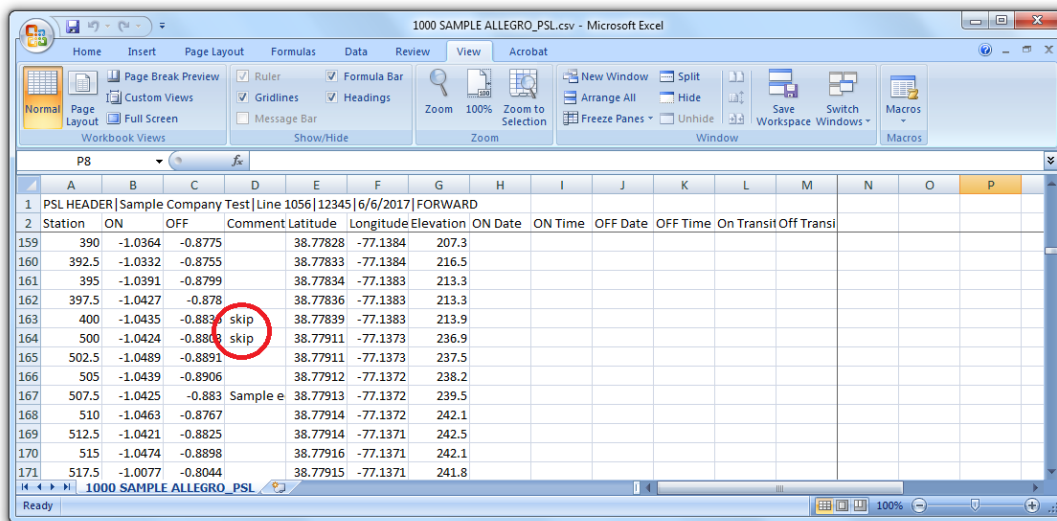


Fig F2: How a skip is entered in the PSL file

What is the structure of a PSL file?

The structure of the PSL is shown below in Fig F3.

| Station | ON | OFF | Comments | Latitude | Longitude | Elevation | ON Date | ON Time | OFF Date | OFF Time | On Transit | Off Transi |
|---------|---------|---------|---------------------|----------|-----------|-----------|---------|---------|----------|----------|------------|------------|
| 0 | -0.9908 | -0.8435 | Sample Test Station | 38.77699 | -77.1408 | 247 | | | | | | |
| 2.5 | -0.9841 | -0.835 | | 38.77699 | -77.1408 | 241.8 | | | | | | |
| 5 | -0.995 | -0.8522 | Sample Edge road | 38.77698 | -77.1408 | 241.8 | | | | | | |
| 7.5 | -1.0064 | -0.8522 | | 38.77697 | -77.1408 | 241.5 | | | | | | |
| 10 | -1.0193 | -0.8643 | | 38.77696 | -77.1408 | 241.1 | | | | | | |
| 12.5 | -1.0125 | -0.8576 | | 38.77694 | -77.1407 | 241.5 | | | | | | |
| 15 | -1.0131 | -0.863 | | 38.77694 | -77.1407 | 240.5 | | | | | | |
| 17.5 | -1.0052 | -0.8517 | | 38.77692 | -77.1407 | 239.5 | | | | | | |
| 20 | -1.0151 | -0.8526 | | 38.77694 | -77.1406 | 238.5 | | | | | | |
| 22.5 | -1.0153 | -0.8398 | | 38.77693 | -77.1406 | 238.2 | | | | | | |
| 25 | -1.016 | -0.8596 | | 38.7769 | -77.1406 | 236.2 | | | | | | |
| 27.5 | -1.0162 | -0.6202 | | 38.77689 | -77.1406 | 237.5 | | | | | | |
| 30 | -1.0187 | -0.6202 | | 38.77687 | -77.1405 | 237.5 | | | | | | |

Fig F3: Structure of a PSL file

The first line in the file is the Header information or what is in the title block of the CIS profile. The information is separated by "|" characters. This information can be edited as needed.

The next line "Station, On, Off, Comments, Latitude, Longitude, Elevation, On Date, On Time, Off Date, Off Time, On Transit and Off Transit" are descriptions of the fields. This line is nothing more than information for the user.

These descriptions should be clear except for On Transit and Off Transi. These fields are called transition fields and when the on and off data is moved to them it will NOT be graphed. This is where a spike may be moved too.

Software

When the software is run and the following message box appears, this means a newer version of the software is available and is free of charge Fig B1. Your subscription cost covers any updates during that period. Follow the instructions in the message box to update the software.

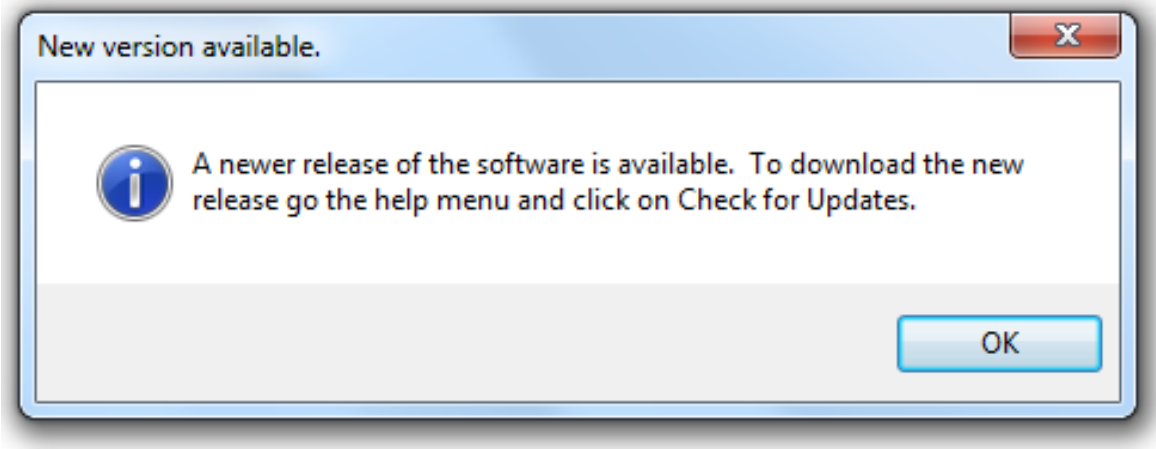


Fig. B1 Software Update Notice

All software options are contained in the "Software" section as shown in Fig. B2. Click on one of the options listed below to begin.

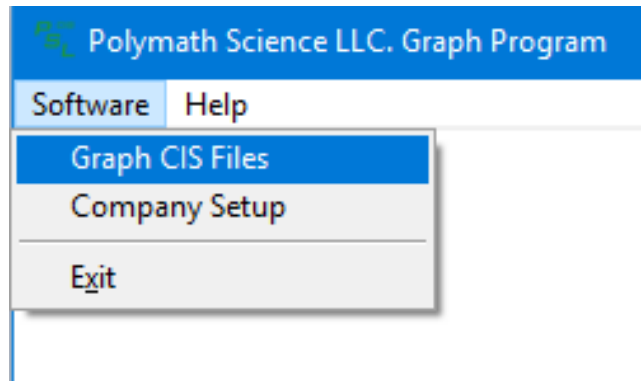


Fig. B2 Software Menu

To begin using the Graph Software program, click "Graph CIS Files". The program will start with a screen that looks like the image shown in Fig. B3. This program has 3 levels Bronze, Silver and Gold. Each of the 3 levels have more features, these instructions will cover each level or tab separately.

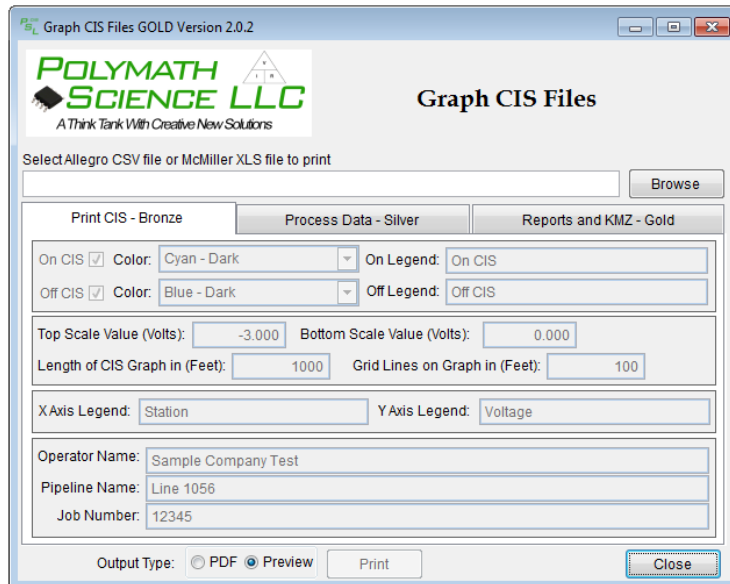


Fig. B3 Start Up Screen

Print CIS - Bronze

By default the “Graph CIS Files” menu will be open once the software runs. To begin working, an Allegro CSV & TXT files or McMiller XLS file must be selected utilizing the Browse function as indicated in fig. G1. This will then allow the user to customize the graph after the file is selected. The software contains samples in the “C:\PS_Graph\Samples”. Press the “Browse” button and navigate to the file or choose a sample file.

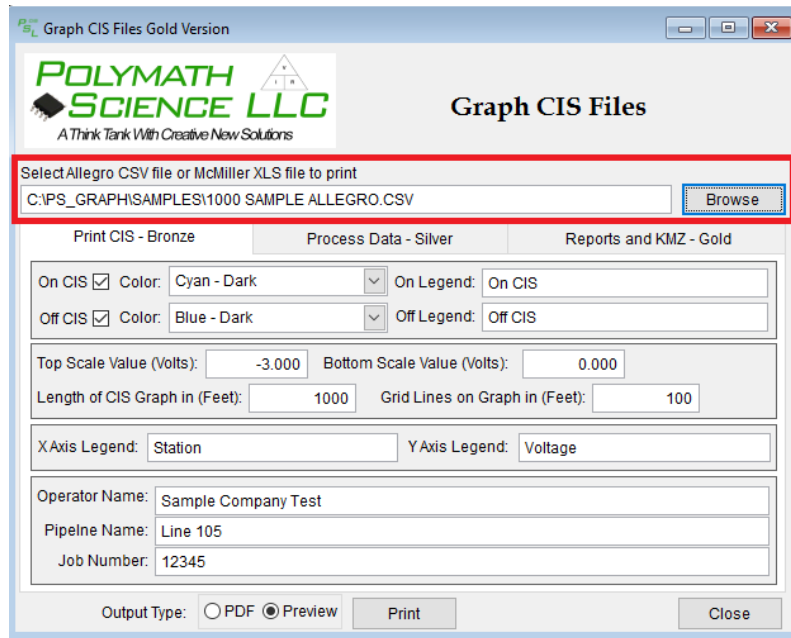


Fig. G1 Graph CIS Files – Browse

To change the look of the graph, lines, colors, and labels may be edited. Individual lines may be enabled or disabled. Options displayed in Fig. G2 show checkboxes that allow for turning on and off graph lines, along with the color of the line when enabled (checked).

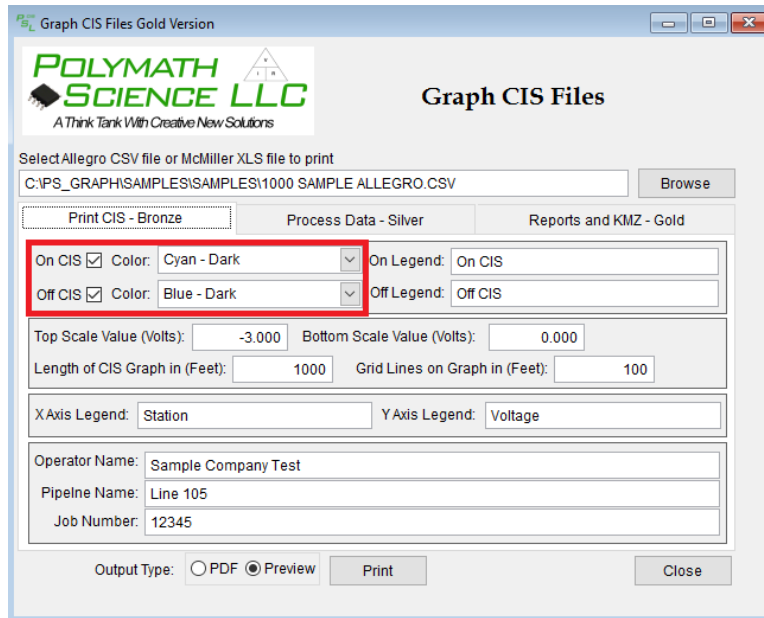


Fig. G2 Graph CIS Files – Display Color Options

Once the down arrow is clicked, color options are presented. Clicking a color will select it as the color for that line, shown in Fig. G3 below.

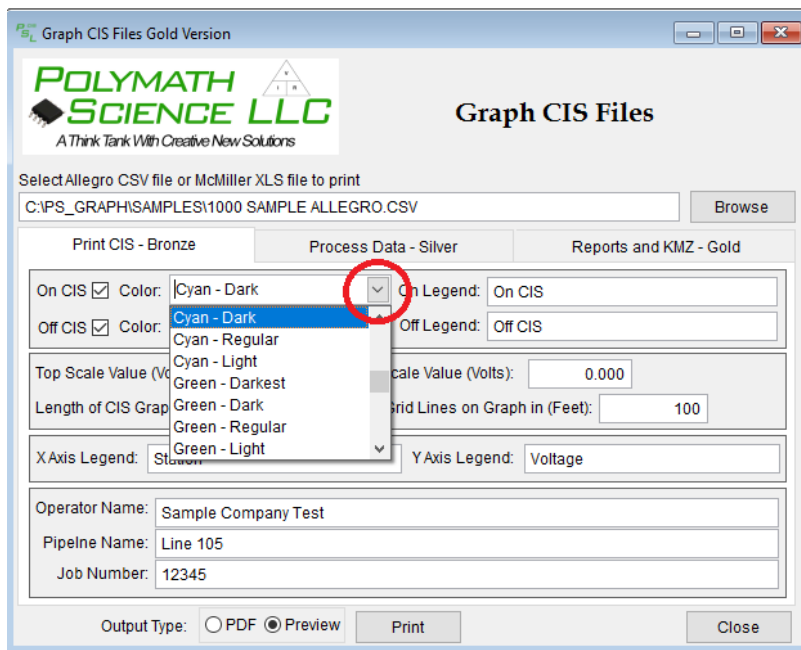


Fig. G3 Graph CIS Files – Color Selections

Renaming the Legend labels is done by typing into the textbox for the desired line, as shown in Fig. G4 below.

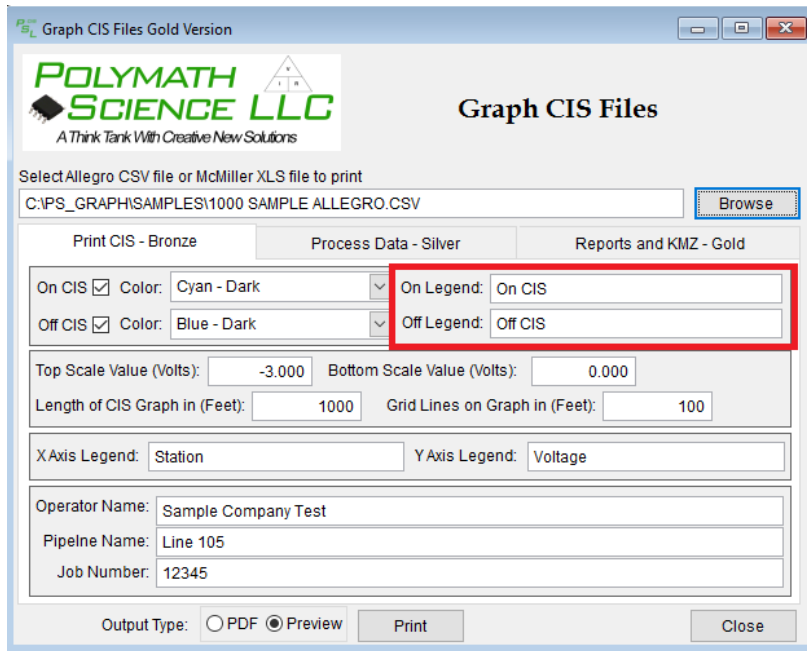


Fig. G4 Graph CIS Files – Label Renaming

Adjusting the X and Y axis ranges is done through the next section highlighted in Fig. G5. Voltage range is displayed as the Y axis and allows for setting a maximum (top scale) and minimum (bottom scale) value. Length of the X-axis is input in feet into the “Length of CIS Graph” field. Grid line spacing is adjusted through the “Grid Lines on Graph” field.

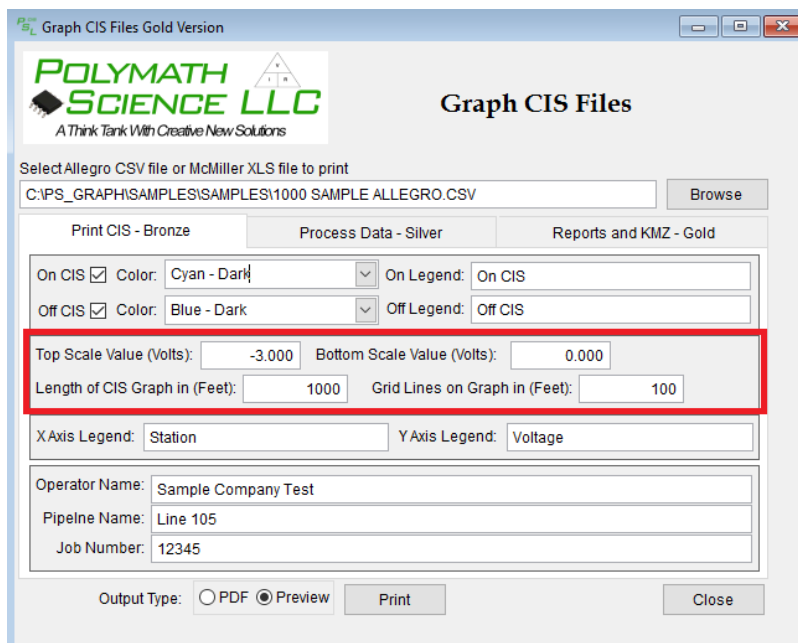


Fig. G5 Graph CIS Files – Axis Ranges

To edit the names of the axis labels, simply rename the fields highlighted in Fig G6.

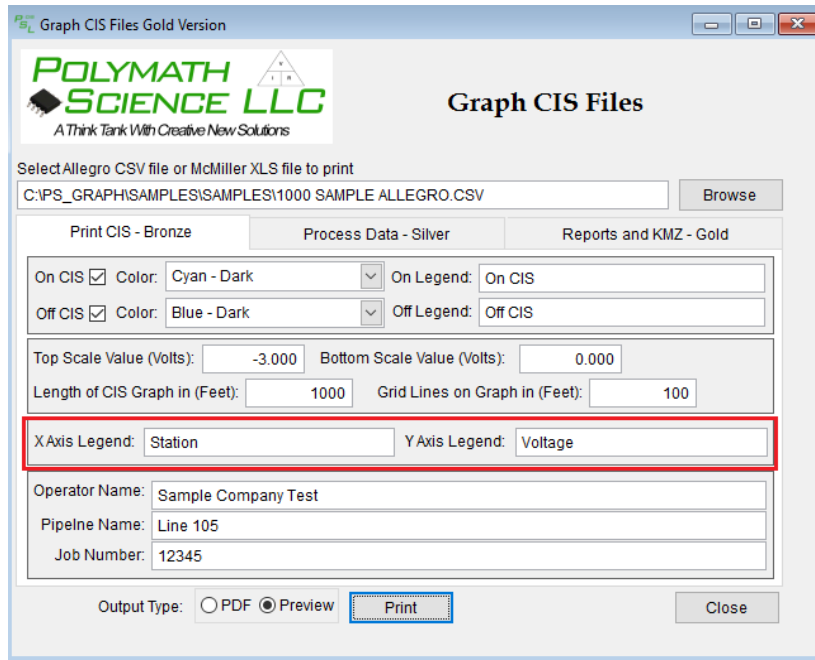


Fig. G6 Graph CIS Files – Axis Legend Labels

Changing the operator name, pipeline name, and job number that are displayed in the legend is done through editing the fields listed in figure G7.

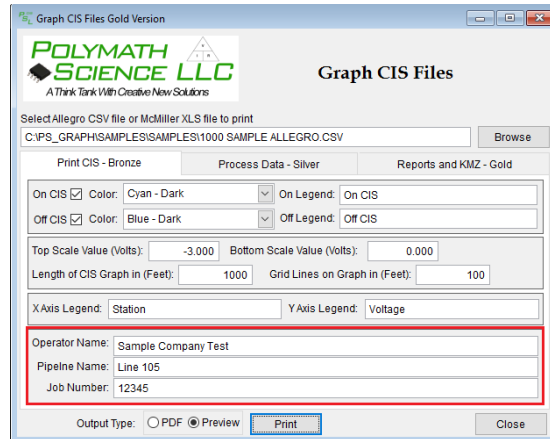


Fig. G7 Graph CIS Files – Graph ID Names

The below graph explains what fields can be edited on the graph in Fig. G8 below.

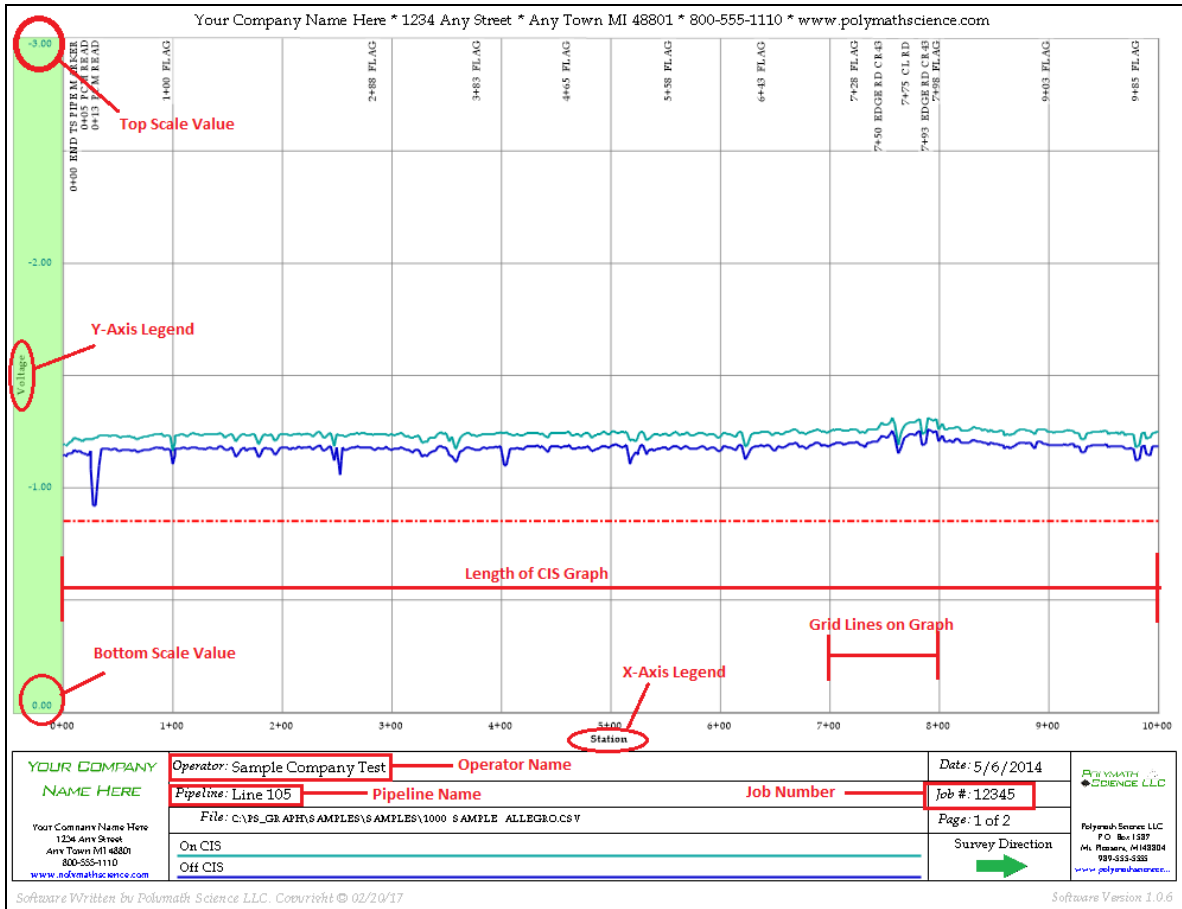


Fig. G8 Graph CIS Files – Partial Sample Graph

Output Type

When the “Graph CIS Files” fields have been filled in, two different output types may be chosen. These are “PDF”, or “Preview”. These options are highlighted in figure G9 below. With the desired output type chosen, clicking the “Print” button will generate the chosen output.

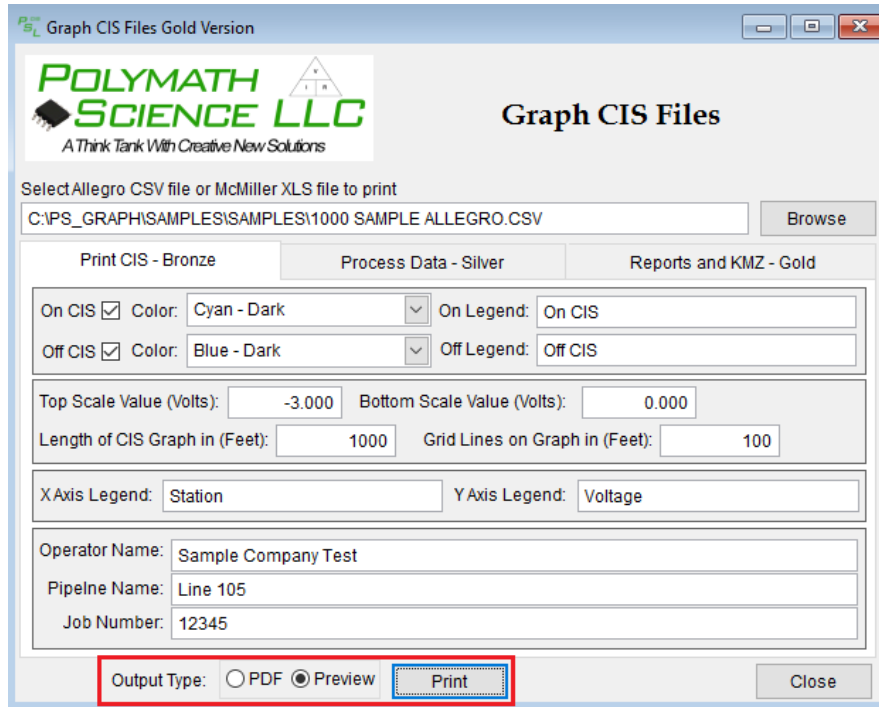


Fig. G9 Graph CIS Files – Output

Choosing the “PDF” option will generate a .pdf file located at the same directory as the chosen CSV or XLS file highlighted in figure G1. The resulting file name will match the input file with the extension of “.pdf”. This printout results in some quality loss compared to the preview option.

Choosing the “Preview” option will generate a preview of the graph. This screen contains a toolbar with some options for navigation and saving. This screen is detailed in figure G10.

Toolbar options include:

1. Go to first page.
2. Go back 1 page.
3. Go to specific page.
4. Go forward 1 page.
5. Go to last page.
6. Zoom level.
7. View as one page at a time.

8. View as two pages at a time.
9. View as four pages at a time.
10. Close the preview.
11. Print. Choosing to print will allow saving as a PDF file type in a chosen location.



Fig. G10 Graph CIS Files – Preview Window

Process Data - Silver

If your subscription is NOT at least the *Silver* version, this section will not function.

The Process Data tab allows for manipulating the data in different ways to improve readability based on specific needs. To navigate to this window, click on the “Process Data – Silver” tab as highlighted in figure S1.

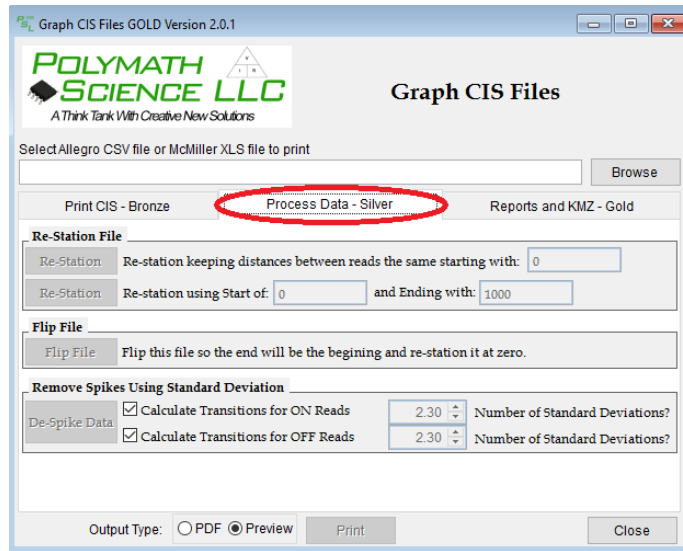


Figure S1 Process Data – Tab Navigation

Once the tab has been selected, the desired Allegro CSV or McMiller XLS file to work with must be selected if not already done. To do this, select “Browse” and navigate to the location of the file. Shown in figure S2.

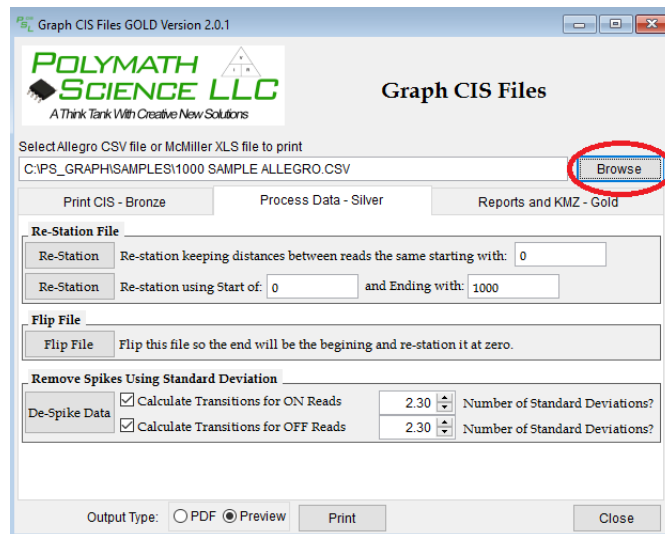


Figure S2: Process Data - Browse

Re-Station File

This option allows for viewing a section of the file. This is done one of two ways. First is by starting the station viewing at a given count, and continuing until the end of the file. Second, a start point and end point can be selected to view within those provided bounds.

The screenshot shows the 'Graph CIS Files GOLD Version 2.0.1' application window. The title bar includes the software name and version, along with standard window controls. The main window features the Polymath Science LLC logo and the title 'Graph CIS Files'. Below the logo, there is a text prompt: 'Select Allegro CSV file or McMiller XLS file to print'. A text input field contains the file path 'C:\PS_GRAPH\SAMPLES\1000 SAMPLE ALLEGRO.CSV', and a 'Browse' button is to its right. Three tabs are visible: 'Print CIS - Bronze', 'Process Data - Silver', and 'Reports and KMZ - Gold'. The 'Process Data - Silver' tab is active, and the 'Re-Station File' section is highlighted with a red border. This section contains two 'Re-Station' buttons. The first button is followed by the text 'Re-station keeping distances between reads the same starting with:' and a text input field containing '0'. The second button is followed by the text 'Re-station using Start of:' and a text input field containing '0', and 'and Ending with:' and a text input field containing '1000'. Below the 'Re-Station File' section is the 'Flip File' section, which has a 'Flip File' button and the text 'Flip this file so the end will be the beginning and re-station it at zero.' The 'Remove Spikes Using Standard Deviation' section has a 'De-Spike Data' button and two checked checkboxes: 'Calculate Transitions for ON Reads' and 'Calculate Transitions for OFF Reads'. Each checkbox is followed by a spin box containing '2.30' and the text 'Number of Standard Deviations?'. At the bottom of the window, there is an 'Output Type' section with radio buttons for 'PDF' and 'Preview' (which is selected), a 'Print' button, and a 'Close' button.

Figure S3 Process Data – Re-Station options

Flip File

To view the graph in a reverse format, simply click on the “Flip File” button as highlighted in figure S4. This will also re-station the file starting at 0.

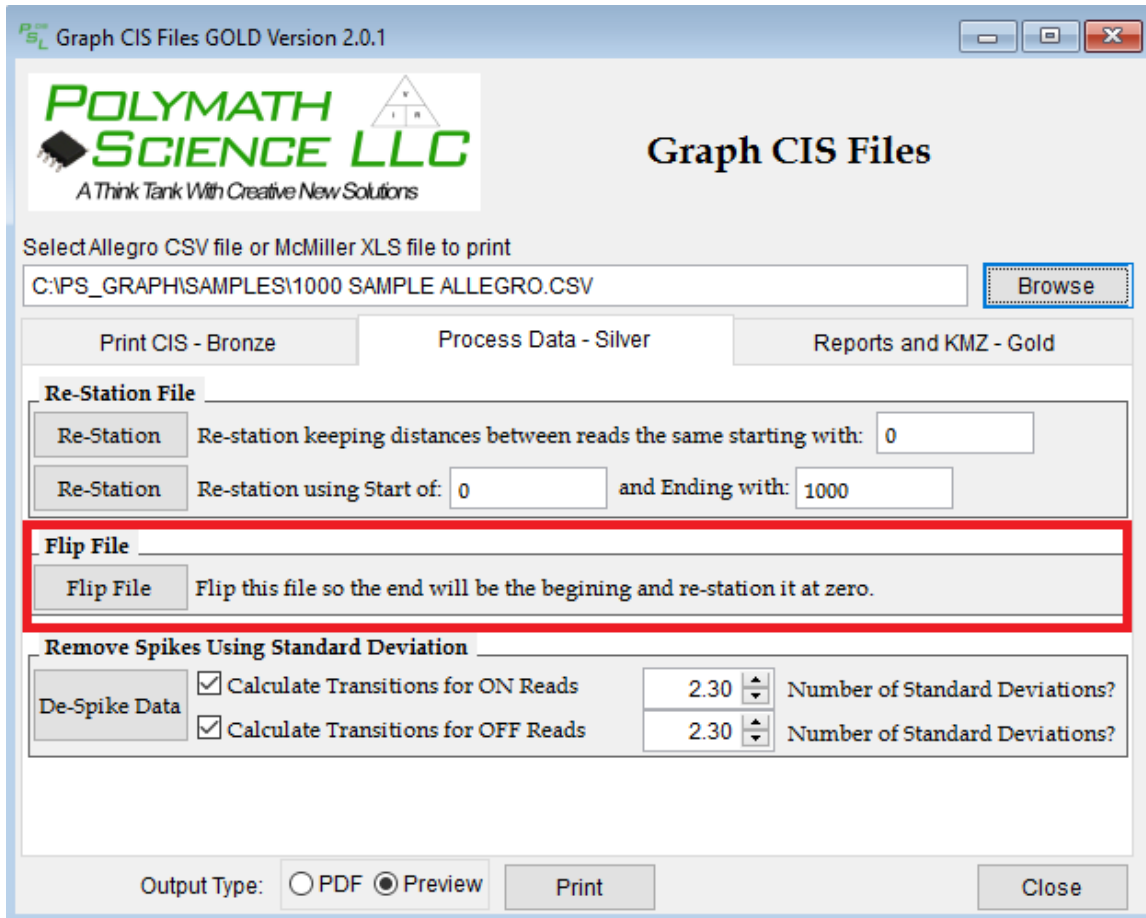


Figure S4 Process Data – Flip File

Remove Spiking

To remove spiking on the graph display, a chosen number of standard deviations can be chosen to be applied. Transitions can be calculated for “ON” and/or “OFF” reads, with standard deviations applied to each separately. This selection is shown in figure S5.

Graph CIS Files GOLD Version 2.0.1

POLYMATHEM SCIENCE LLC
A Think Tank With Creative New Solutions

Graph CIS Files

Select Allegro CSV file or McMiller XLS file to print

C:\PS_GRAPH\SAMPLES\1000 SAMPLE ALLEGRO.CSV Browse

Print CIS - Bronze Process Data - Silver Reports and KMZ - Gold

Re-Station File

Re-Station Re-station keeping distances between reads the same starting with: 0

Re-Station Re-station using Start of: 0 and Ending with: 1000

Flip File

Flip File Flip this file so the end will be the beginning and re-station it at zero.

Remove Spikes Using Standard Deviation

| | | | |
|---------------|---|------|--------------------------------|
| De-Spike Data | <input checked="" type="checkbox"/> Calculate Transitions for ON Reads | 2.30 | Number of Standard Deviations? |
| | <input checked="" type="checkbox"/> Calculate Transitions for OFF Reads | 2.30 | Number of Standard Deviations? |

Output Type: PDF Preview Print Close

Fig S5: Process Data – Remove Spiking

Reports and KMZ - Gold

If the *Gold* version is not included, this section will not function.

The “Reports and KMZ” tab allows for additional export file types, and specific reports. To navigate to this window simply click the “Reports and KMZ – Gold” tab as shown in figure R1.

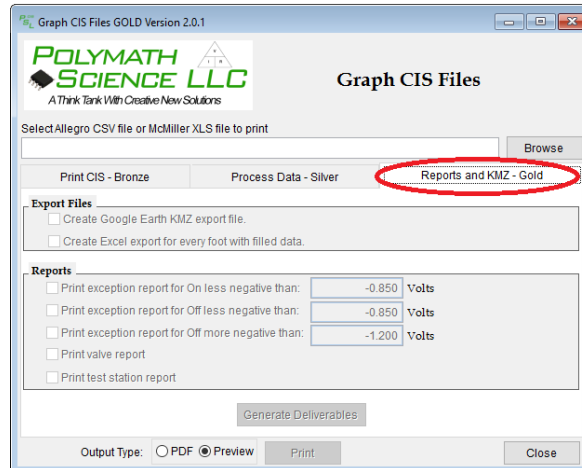


Figure R1 Reports and KMZ – Tab Navigation

A file must be selected before anything can be done. To do this, select “Browse” and locate the desired Allegro CSV or McMiller XLS file.



Fig R2: Reports and KMZ – File Browse

These export file types include Google Earth KMZ files, and Excel files. Simply check the boxes next to the desired file types and click the “Generate Deliverables” button. Created files will be stored in your “...\PS_Graph\Samples” directory. This process is shown in figure R3.

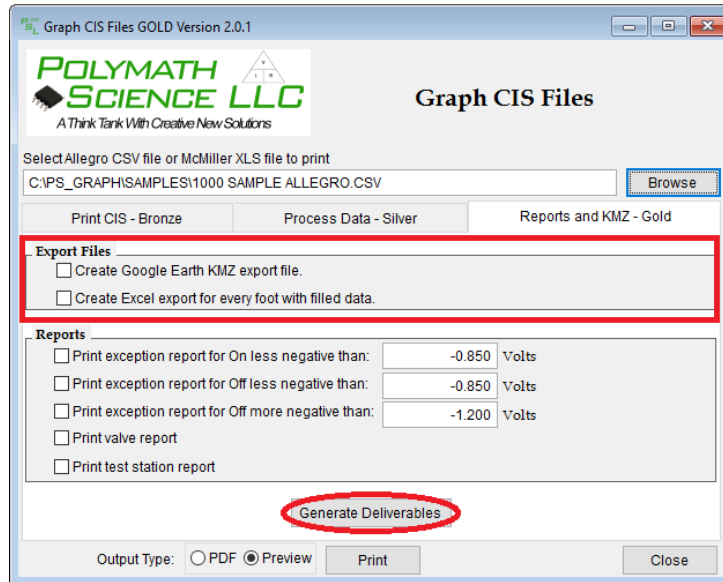


Figure R3 Reports and KMZ – Export File

To generate user defined exception reports, check the desired box and enter the number of volts in the field for the chosen report. Additionally, skip reports and test station reports can be generated if selected. This process is shown in figure R4.

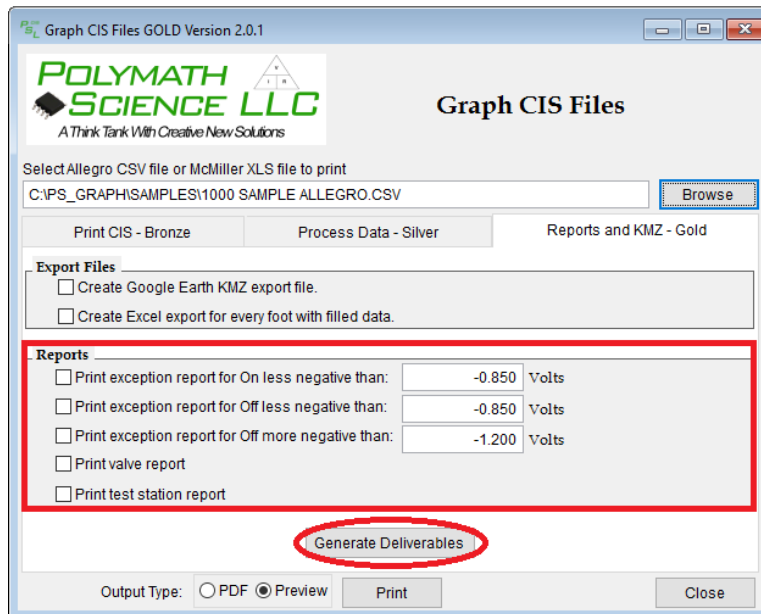


Figure R4 Reports and KMZ - Reports

Company Setup

This portion of the software allows the user to set up the company's name, address and contact information. This data is used throughout the software in all the reports and in the KMZ files that are created. The software installs with the "Your Company Name Here" for the company information.

From the "Software" item at the top left of the screen select the menu entry labeled "Company Setup" as shown in fig. C1

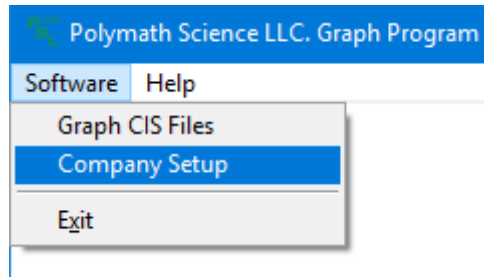


Fig. C1 Software – Company Setup

By selecting the "Company Setup" menu item, a new window will be opened to allow the user to edit the Company Information as shown in fig. C2

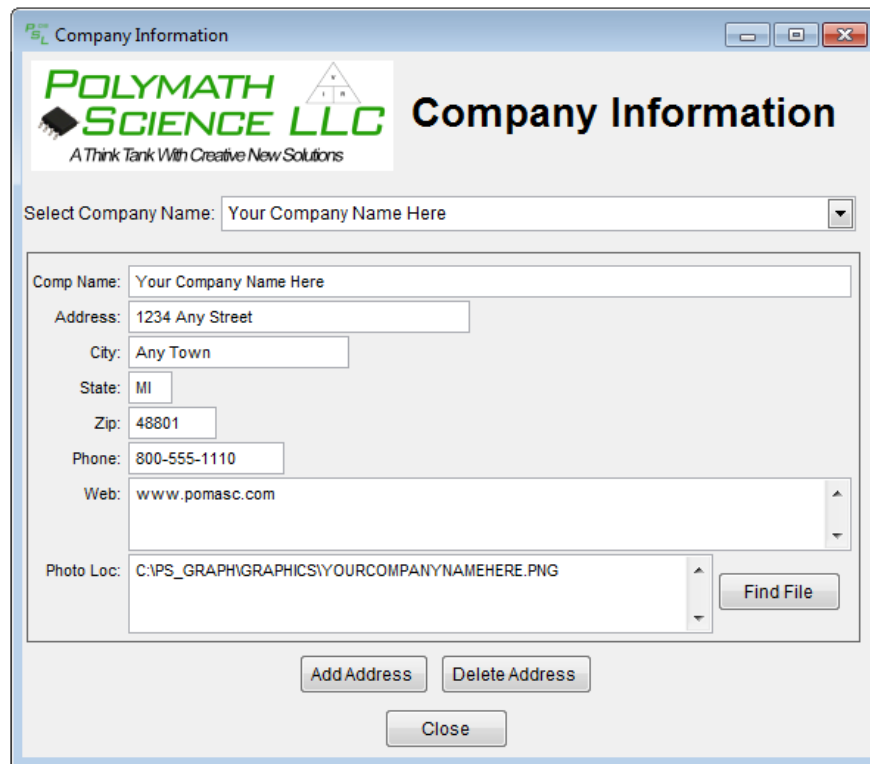
A screenshot of the "Company Information" dialog box. The window title is "Company Information". It features the Polymath Science LLC logo and tagline "A Think Tank With Creative New Solutions". The main heading is "Company Information". Below this, there is a dropdown menu for "Select Company Name:" with "Your Company Name Here" selected. The form contains several input fields: "Comp Name:" (Your Company Name Here), "Address:" (1234 Any Street), "City:" (Any Town), "State:" (MI), "Zip:" (48801), "Phone:" (800-555-1110), and "Web:" (www.pomasc.com). There is also a "Photo Loc:" field with the path "C:\PS_GRAPH\GRAPHICS\YOURCOMPANYNAMEHERE.PNG" and a "Find File" button. At the bottom, there are "Add Address", "Delete Address", and "Close" buttons.

Fig. C2 Company Setup

To edit the information simply type in the field associated with the attribute to be changed. The last option allows for the inclusion of a company photo. This image is displayed in printed reports as shown in figure C3.

**EXCEPTION REPORT ON CIS RE
SAMPL**

*YOUR COMPANY
NAME HERE* Your Company Name Here
1234 Any Street
Any Town MI 48801
800-555-1110
www.pomasc.com

| Beginning Stationing | Ending Stationing | Feet | Beginning Latitude | Beginning Longitude | Ending Longitude |
|----------------------|-------------------|------|--------------------|---------------------|------------------|
| 3+58 | 3+59 | 1 | 38.77797318 | -77.1385880 | 38 |

Total Exception Footage = 1 Total Footage Surveyed = 1995 Percentage = 0.05%

Fig. C3 Company Setup Logo

The software scales the photo to fill in the space on the report, so the user may have to re-size the photo to ensure good printing quality.

After completing all the fields the company information can be saved and added to the pull down menu at the top. This is useful when printing graphs for several companies.

To delete an address in the pull down menu, select the address to delete in the pull down menu and push the "Delete Address" button. This removes the address from the pull down menu.

Help

This section of the software will assist the user in running the software more efficiently and resolving possible problems. The first step in understanding the software is to read the Work Instructions.

Work Instructions

From the “Help” at the top left of the screen select the menu entry labeled “Help – Work Instructions” as shown in fig. H1.

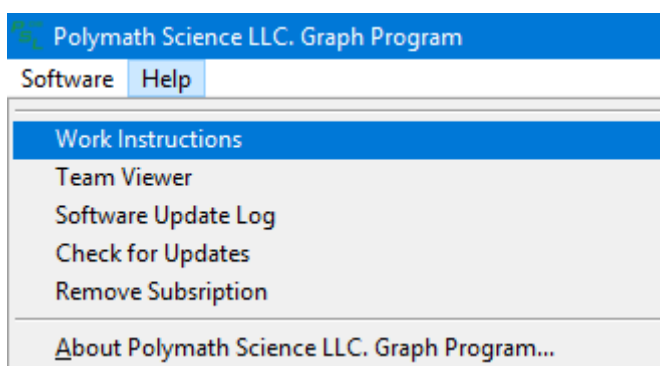


Fig. H1 Help Menu – Work Instructions

By Selecting “Help – Work Instructions” Menu Item, a new window will be opened with these instructions. These instructions have a linked table of contents. To jump to a specific area, locate the area of interest and click on the table of contents and it will jump to that location in this document.

Run TeamViewer

TeamViewer is a program that allows another person to see your computer for trouble shooting or training. Only a supervisor or the developers would run this program.

From the “Help” at the top left of the screen select the menu entry labeled “TeamViewer” as shown in fig. H2.

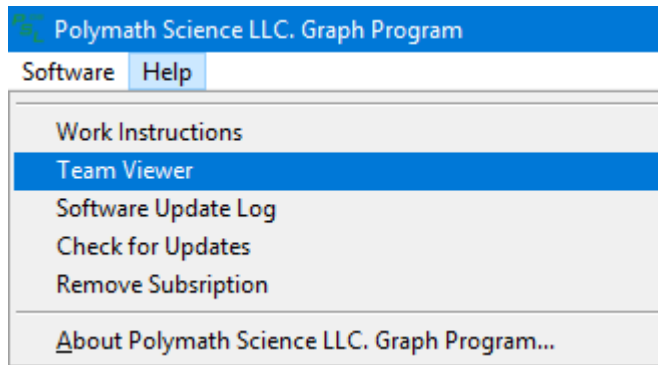


Fig. H2 Help Menu – Run TeamViewer

By Selecting “Team Viewer” Menu Item, a new window may be opened and ask to allow TeamViewer to make changes to the system. Select “Yes” and a screen similar to fig. H3 will appear.

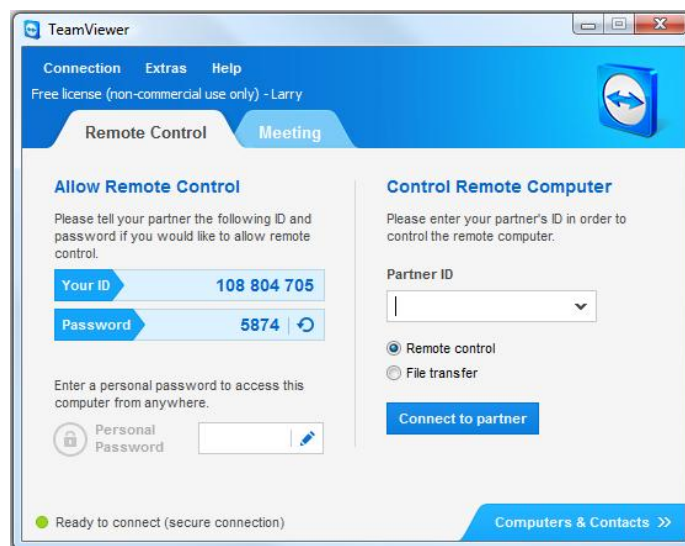


Fig. H3 TeamViewer

A supervisor or developer will then ask your ID and password to be able to see and control the computer.

Software Update Log

From the “Help” item at the top left of the screen select the menu entry labeled “Software Update Log” as shown in fig. H4.

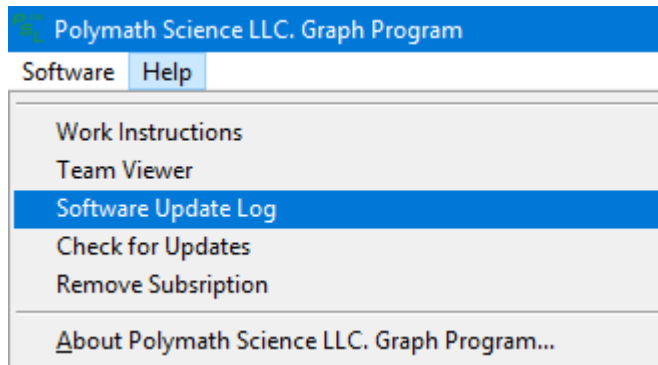


Fig. H4 Help Menu – Software Update Log

By Selecting “Software Update Log” Menu Item, a new window will be opened with a detailed history of all changes made to the software.

Check for Updates

Upon running the software, the user will be notified if there are available updates to be downloaded. In addition, software updates can be manually checked for through the “Check for Updates” menu option in the Help menu.

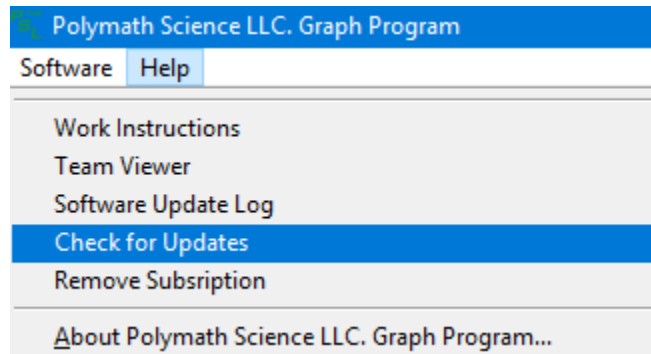


Fig. H6 Help Menu – Check for Updates Selection

When checking for updates, a prompt will be displayed that will show the current version installed, and the latest version available for download. If a newer version is ready to be downloaded, the option to “Download the Latest Version” will be available. Clicking this will launch the users default browser and download the latest version as an executable (.exe) file. Running the executable file will guide the user through the upgrade process.

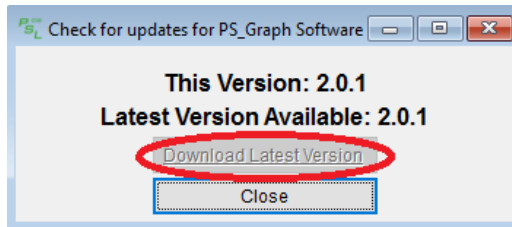


Fig. H7 Help Menu – Check for Updates Prompt

Removing Subscription

Caution if you do not have a valid subscription number your software will NOT run after this done. If you wish to remove the subscription, this can be done through the Help menu. Select Help, and click on “Remove Subscription”. This is shown in Fig H8.

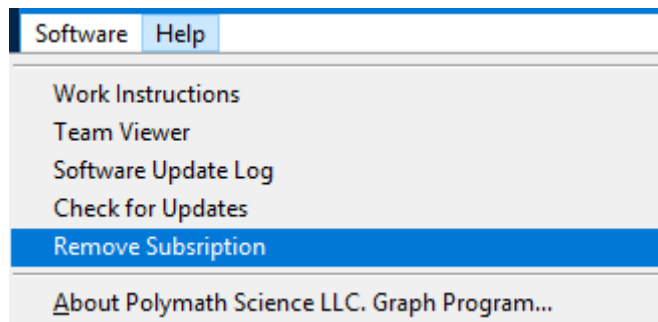


Fig H8: Remove Subscription

Clicking the “Remove Subscription” option will prompt the user to verify the removal of the subscription twice. Clicking “Yes” on both subsequent prompts will successfully remove the subscription.

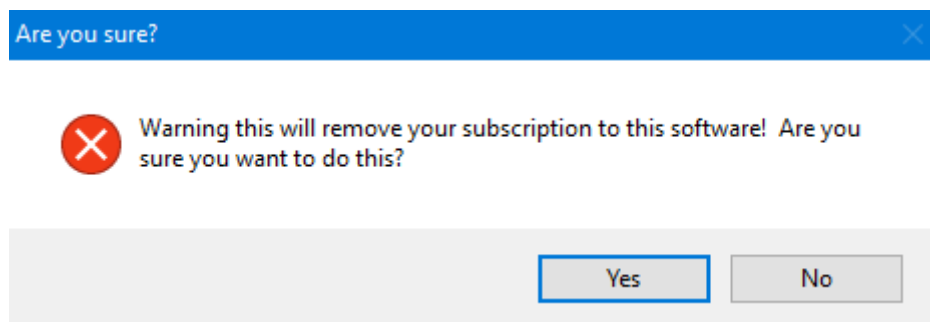


Fig H9: Subscription Removal Warning

Upon running the software again, a valid subscription number must be entered to continue.

About Polymath Science Graph Software

From the “Help” item at the top left of the screen select the menu entry labeled “About Polymath Science LLC. Graph Program” as shown in fig. H10.

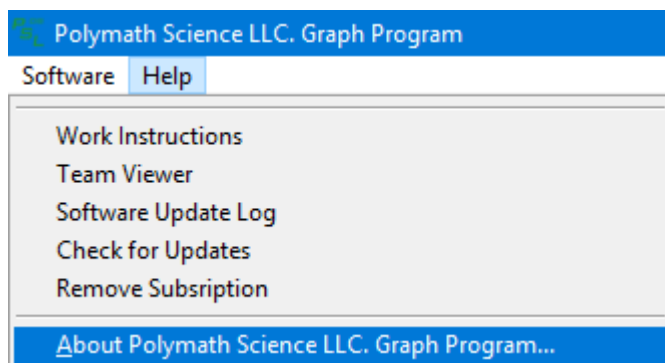


Fig. H10 Help Menu – About Selection

By selecting the “About Polymath Science LLC. Graph Program” menu Item, a new window will be opened displaying the current version of the software along with the last date it was updated. This is shown in Fig. H11.

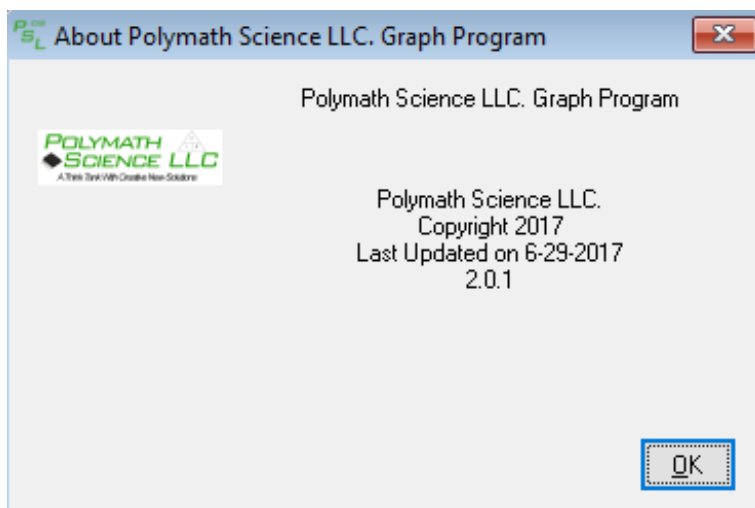
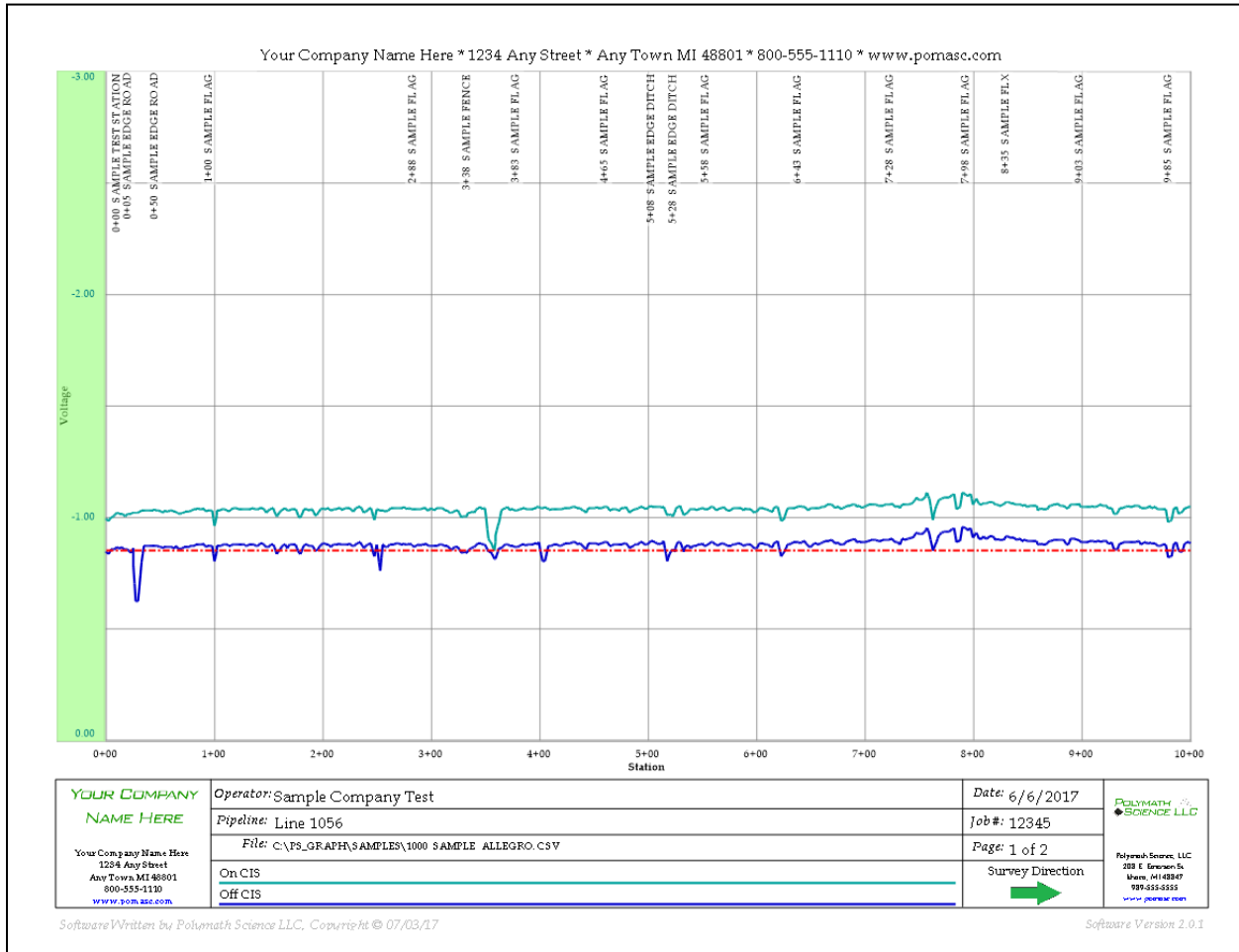


Fig. H11 Help Menu – About Polymath Science LLC. Graph Program

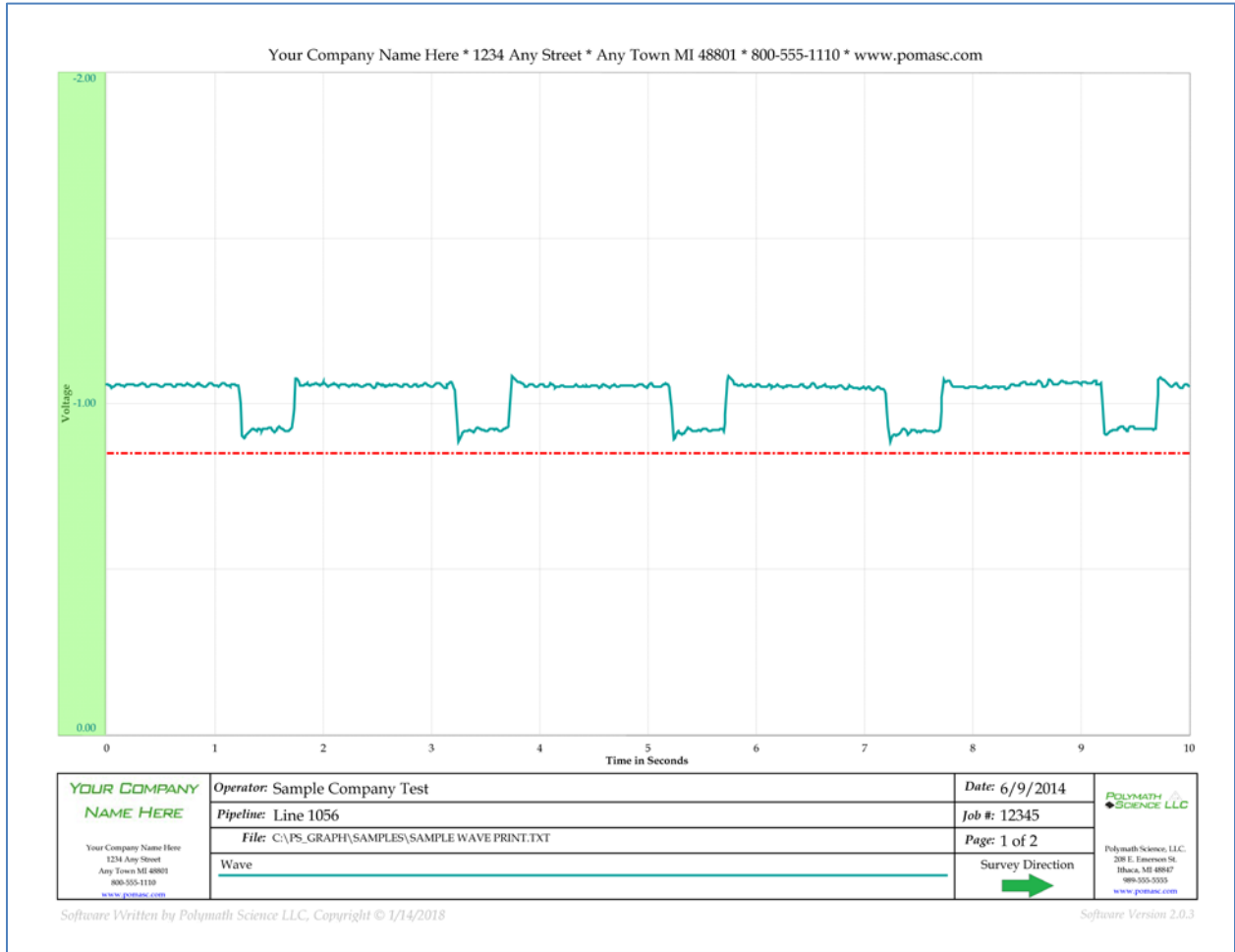
Sample Reports

Below are all the sample reports the software will generate.

CIS Profile Graph



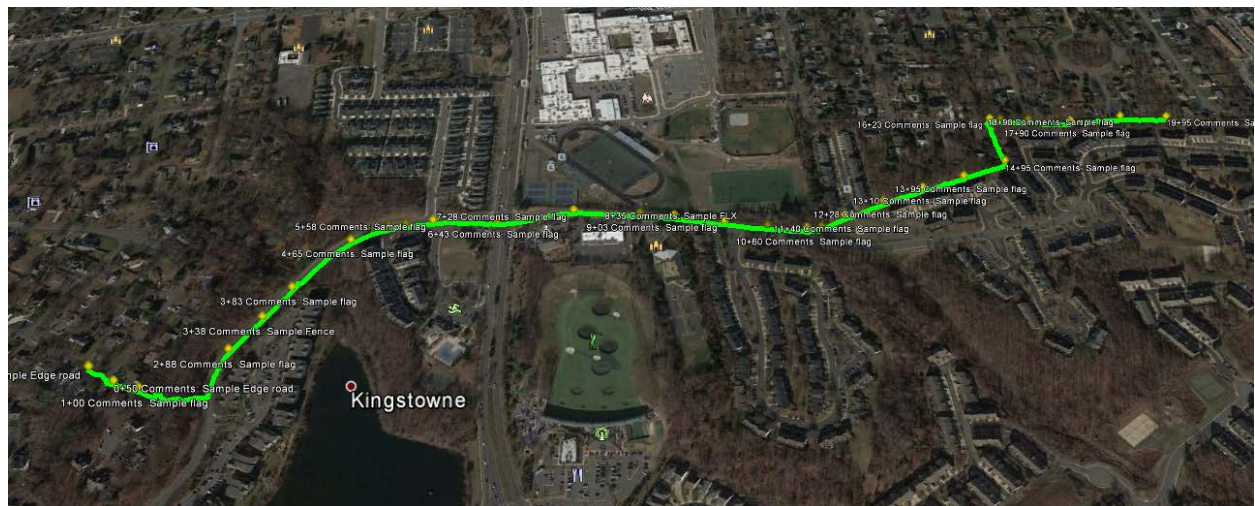
Allegro Wave Print



Excel Export

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|----|---------|---------|---------|---------|----------|-----------|----------|----------|-----------|-----------|-----------|-----------|---------|---------|----------|----------|------------|------------|
| 1 | Station | ON | ON Fill | OFF | OFF Fill | Comment | Latitude | Lat Fill | Longitude | Long Fill | Elevation | Elev Fill | ON Date | ON Time | OFF Date | OFF Time | On Transit | Off Transi |
| 2 | 0 | -0.9908 | -0.9908 | -0.8435 | -0.8435 | Sample Tr | 38.77699 | 38.77699 | -77.1408 | -77.1408 | 247 | 247 | | | | | | |
| 3 | 1 | | -0.9886 | | -0.8407 | | | 38.77699 | | -77.1408 | | 245.2667 | | | | | | |
| 4 | 2 | | -0.9863 | | -0.8378 | | | 38.77699 | | -77.1408 | | 243.5333 | | | | | | |
| 5 | 3 | -0.9841 | -0.9841 | -0.835 | -0.835 | | 38.77699 | 38.77699 | -77.1408 | -77.1408 | 241.8 | 241.8 | | | | | | |
| 6 | 4 | | -0.9896 | | -0.8436 | | | 38.77699 | | -77.1408 | | 241.8 | | | | | | |
| 7 | 5 | -0.995 | -0.995 | -0.8522 | -0.8522 | Sample E | 38.77698 | 38.77698 | -77.1408 | -77.1408 | 241.8 | 241.8 | | | | | | |
| 8 | 6 | | -0.9988 | | -0.8522 | | | 38.77698 | | -77.1408 | | 241.7 | | | | | | |
| 9 | 7 | | -1.0026 | | -0.8522 | | | 38.77698 | | -77.1408 | | 241.6 | | | | | | |
| 10 | 8 | -1.0064 | -1.0064 | -0.8522 | -0.8522 | | 38.77697 | 38.77697 | -77.1408 | -77.1408 | 241.5 | 241.5 | | | | | | |
| 11 | 9 | | -1.0129 | | -0.8583 | | | 38.77697 | | -77.1408 | | 241.3 | | | | | | |
| 12 | 10 | -1.0193 | -1.0193 | -0.8643 | -0.8643 | | 38.77696 | 38.77696 | -77.1408 | -77.1408 | 241.1 | 241.1 | | | | | | |
| 13 | 11 | | -1.017 | | -0.8621 | | | 38.77695 | | -77.1408 | | 241.2333 | | | | | | |
| 14 | 12 | | -1.0148 | | -0.8598 | | | 38.77695 | | -77.1407 | | 241.3667 | | | | | | |
| 15 | 13 | -1.0125 | -1.0125 | -0.8576 | -0.8576 | | 38.77694 | 38.77694 | -77.1407 | -77.1407 | 241.5 | 241.5 | | | | | | |
| 16 | 14 | | -1.0128 | | -0.8603 | | | 38.77694 | | -77.1407 | | 241 | | | | | | |
| 17 | 15 | -1.0131 | -1.0131 | -0.863 | -0.863 | | 38.77694 | 38.77694 | -77.1407 | -77.1407 | 240.5 | 240.5 | | | | | | |
| 18 | 16 | | -1.0105 | | -0.8592 | | | 38.77693 | | -77.1407 | | 240.1667 | | | | | | |
| 19 | 17 | | -1.0078 | | -0.8555 | | | 38.77693 | | -77.1407 | | 239.8333 | | | | | | |
| 20 | 18 | -1.0052 | -1.0052 | -0.8517 | -0.8517 | | 38.77692 | 38.77692 | -77.1407 | -77.1407 | 239.5 | 239.5 | | | | | | |
| 21 | 19 | | -1.0102 | | -0.8522 | | | 38.77693 | | -77.1407 | | 239 | | | | | | |
| 22 | 20 | -1.0151 | -1.0151 | -0.8526 | -0.8526 | | 38.77694 | 38.77694 | -77.1406 | -77.1406 | 238.5 | 238.5 | | | | | | |
| 23 | 21 | | -1.0152 | | -0.8483 | | | 38.77693 | | -77.1406 | | 238.4 | | | | | | |
| 24 | 22 | | -1.0152 | | -0.8441 | | | 38.77693 | | -77.1406 | | 238.3 | | | | | | |
| 25 | 23 | -1.0153 | -1.0153 | -0.8398 | -0.8398 | | 38.77693 | 38.77693 | -77.1406 | -77.1406 | 238.2 | 238.2 | | | | | | |
| 26 | 24 | | -1.0157 | | -0.8497 | | | 38.77691 | | -77.1406 | | 237.2 | | | | | | |
| 27 | 25 | -1.016 | -1.016 | -0.8596 | -0.8596 | | 38.7769 | 38.7769 | -77.1406 | -77.1406 | 236.2 | 236.2 | | | | | | |
| 28 | 26 | | -1.0161 | | -0.7798 | | | 38.77689 | | -77.1406 | | 236.6333 | | | | | | |
| 29 | 27 | | -1.0161 | | -0.7 | | | 38.77689 | | -77.1406 | | 237.0667 | | | | | | |
| 30 | 28 | -1.0162 | -1.0162 | -0.6202 | -0.6202 | | 38.77689 | 38.77689 | -77.1406 | -77.1406 | 237.5 | 237.5 | | | | | | |
| 31 | 29 | | -1.0175 | | -0.6202 | | | 38.77688 | | -77.1406 | | 237.5 | | | | | | |
| 32 | 30 | -1.0187 | -1.0187 | -0.6202 | -0.6202 | | 38.77687 | 38.77687 | -77.1405 | -77.1405 | 237.5 | 237.5 | | | | | | |
| 33 | 31 | | -1.0223 | | -0.6796 | | | 38.77686 | | -77.1405 | | 237.3 | | | | | | |
| 34 | 32 | | -1.026 | | -0.7389 | | | 38.77686 | | -77.1405 | | 237.1 | | | | | | |
| 35 | 33 | -1.0296 | -1.0296 | -0.7983 | -0.7983 | | 38.77686 | 38.77686 | -77.1405 | -77.1405 | 236.9 | 236.9 | | | | | | |
| 36 | 34 | | -1.0298 | | -0.8341 | | | 38.77685 | | -77.1405 | | 235.55 | | | | | | |
| 37 | 35 | -1.0299 | -1.0299 | -0.8699 | -0.8699 | | 38.77684 | 38.77684 | -77.1405 | -77.1405 | 234.2 | 234.2 | | | | | | |
| 38 | 36 | | -1.0296 | | -0.8704 | | | 38.77684 | | -77.1405 | | 232.2333 | | | | | | |
| 39 | 37 | | -1.0294 | | -0.8709 | | | 38.77683 | | -77.1405 | | 230.2667 | | | | | | |
| 40 | 38 | -1.0291 | -1.0291 | -0.8714 | -0.8714 | | 38.77682 | 38.77682 | -77.1405 | -77.1405 | 228.3 | 228.3 | | | | | | |
| 41 | 39 | | -1.0302 | | -0.8714 | | | 38.77682 | | -77.1405 | | 234.7 | | | | | | |

Google Earth KMZ Export



Exception Report: Off CIS Reads Less Negative -0.850

| EXCEPTION REPORT OFF CIS READS LESS NEGATIVE THAN -0.850 VOLTS | | | | | | | |
|--|-------------------|------------------------|--------------------|---|-----------------|------------------|----------|
| YOUR COMPANY | | Your Company Name Here | | SAMPLE COMPANY TEST | | | |
| NAME HERE | | 124 Any Street | | LINE 1056 | | | |
| | | Any Town MI 48801 | | | | | |
| | | 800-555-1110 | | | | | |
| | | www.pomac.com | | | | | |
| | | | | POLYMATH SCIENCE LLC | | | |
| | | | | A First Step (SM) - Contact Your Dealer | | | |
| Beginning Stationing | Ending Stationing | Feet | Beginning Latitude | Beginning Longitude | Ending Latitude | Ending Longitude | Comments |
| 0+00 | 0+05 | 5 | 38.77698898 | -77.1408234 | 38.77698135 | -77.1408157 | |
| 0+21 | 0+25 | 4 | 38.77693304 | -77.1406377 | 38.77689743 | -77.1405869 | |
| 0+26 | 0+35 | 9 | 38.77689489 | -77.1405843 | 38.77684402 | -77.1405106 | |
| 0+99 | 1+03 | 4 | 38.77672386 | -77.1400719 | 38.77671814 | -77.1400375 | |
| 1+57 | 1+61 | 4 | 38.77669017 | -77.1397603 | 38.77667872 | -77.1397349 | |
| 1+77 | 1+82 | 5 | 38.77666855 | -77.1396612 | 38.77667745 | -77.1396205 | |
| 1+93 | 1+96 | 3 | 38.77668381 | -77.1395493 | 38.77669017 | -77.1395264 | |
| 2+47 | 2+50 | 3 | 38.77688217 | -77.1391602 | 38.77692413 | -77.1391602 | |
| 2+51 | 2+55 | 4 | 38.77693176 | -77.1391602 | 38.77697754 | -77.1391602 | |
| 3+27 | 3+35 | 8 | 38.77768962 | -77.1387939 | 38.77775955 | -77.1387329 | |
| 3+53 | 3+63 | 10 | 38.77792358 | -77.1386185 | 38.77802277 | -77.1385498 | |
| 4+02 | 4+08 | 6 | 38.77840296 | -77.1382650 | 38.77845383 | -77.1382294 | |
| 5+17 | 5+23 | 6 | 38.77915319 | -77.1370773 | 38.77916336 | -77.1370239 | |
| 5+25 | 5+26 | 1 | 38.77915955 | -77.1369858 | 38.77916082 | -77.1369731 | |
| 5+33 | 5+34 | 1 | 38.77916718 | -77.1368790 | 38.77916909 | -77.1368637 | |
| 6+22 | 6+27 | 5 | 38.77921677 | -77.1358134 | 38.77919896 | -77.1357524 | |
| 7+63 | 7+64 | 1 | 38.77933884 | -77.1339264 | 38.77933884 | -77.1339111 | |
| 9+79 | 9+84 | 5 | 38.77919388 | -77.1315575 | 38.77919006 | -77.1315193 | |
| 9+90 | 9+94 | 4 | 38.77919006 | -77.1314697 | 38.77918625 | -77.1314354 | |
| 10+05 | 10+08 | 3 | 38.77917480 | -77.1313248 | 38.77917480 | -77.1313248 | |
| 11+20 | 11+24 | 4 | 38.77929688 | -77.1304779 | 38.77930832 | -77.1304550 | |
| 12+25 | 12+28 | 3 | 38.77954102 | -77.1297379 | 38.77954483 | -77.1297226 | |
| 13+30 | 13+34 | 4 | 38.77977371 | -77.1289597 | 38.77978325 | -77.1289368 | |
| 13+40 | 13+44 | 4 | 38.77980423 | -77.1288834 | 38.77981568 | -77.1288567 | |
| 13+50 | 13+52 | 2 | 38.77983093 | -77.1288147 | 38.77983856 | -77.1287944 | |
| 13+54 | 13+60 | 6 | 38.77984810 | -77.1287766 | 38.77987671 | -77.1287384 | |
| 13+89 | 13+95 | 6 | 38.77993584 | -77.1284904 | 38.77994919 | -77.1284256 | |
| 14+00 | 14+04 | 4 | 38.77996445 | -77.1284027 | 38.77998353 | -77.1283798 | |
| 14+60 | 14+61 | 1 | 38.78012085 | -77.1279450 | 38.78012339 | -77.1279450 | |
| 14+64 | 14+70 | 6 | 38.78013039 | -77.1279411 | 38.78013992 | -77.1278839 | |
| 14+74 | 14+79 | 5 | 38.78015519 | -77.1278458 | 38.78016854 | -77.1278000 | |
| 15+00 | 15+02 | 2 | 38.78027344 | -77.1277237 | 38.78028615 | -77.1277237 | |
| 18+56 | 18+60 | 4 | 38.78103002 | -77.1259791 | 38.78103256 | -77.1259460 | |
| 18+97 | 19+07 | 10 | 38.78105291 | -77.1256765 | 38.78104782 | -77.1256104 | |

Valve Report

YOUR COMPANY Your Company Name Here
NAME HERE 1234 Any Street
Any Town MI 48801
800-555-1110
www.polymath.com

VALVE REPORT SAMPLE COMPANY TEST LINE 1056



| Stationing | Latitude | Longitude | Comments |
|------------|-------------|-------------|---------------------|
| 14+53 | 38.78010178 | -77.1279984 | Sample Valve MP 123 |

Total # of Valves = 1 Total Footage Surveyed = 1995

Test Station Report

YOUR COMPANY
NAME HERE

Your Company Name Here
1234 Any Street
Any Town MI 48801
800-555-1110
www.pcmasc.com

TEST STATION REPORT SAMPLE COMPANY TEST LINE 1056



| Stationing | Latitude | Longitude | Comments |
|------------|-------------|-------------|---------------------|
| 0+00 | 38.77698898 | -77.1408234 | Sample Test Station |
| 19+93 | 38.78105164 | -77.1249542 | Sample Test Station |

Total # of Test Stations = 2 Total Footage Surveyed = 1995

Troubleshooting for updating the software

Updating Using Internet Explorer

If the default browser is Internet Explorer, the download will show as in figure T1. Select “Run” and follow prompts to install the update. The process for Google Chrome and FireFox follow.

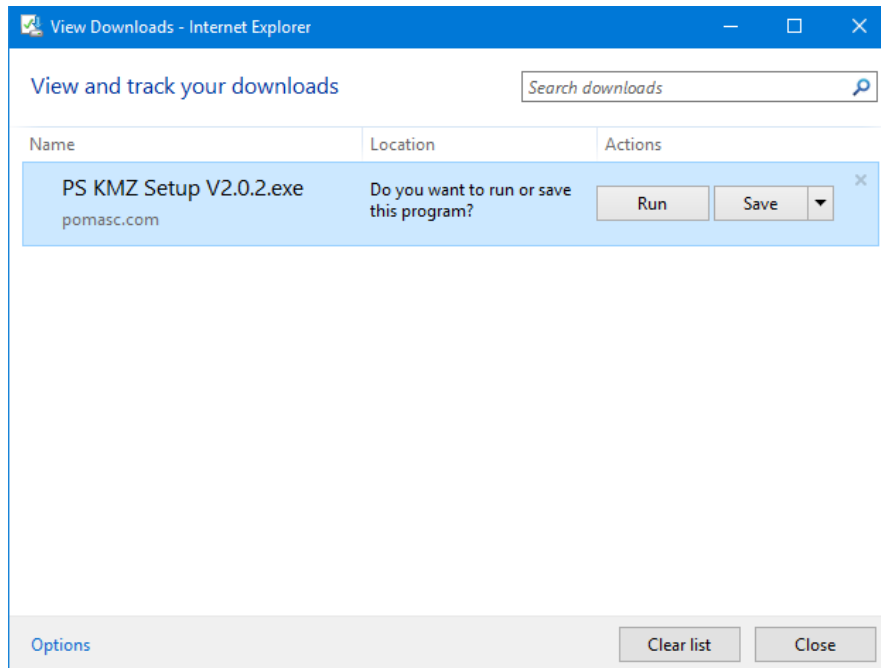


Fig. T1 Troubleshooting – Update Using Internet Explorer

Updating Using Microsoft Edge

If the default Browser is set to Microsoft Edge, after the Browser launches a window at the bottom of the screen will ask what to do with the update file. Choose “Save” to save the file to your downloads folder.



Fig. T2 Troubleshooting – Saving Update Using Microsoft Edge

After saving the file, the user may see a warning. Choose to run the file, and follow the prompts to complete the update process.

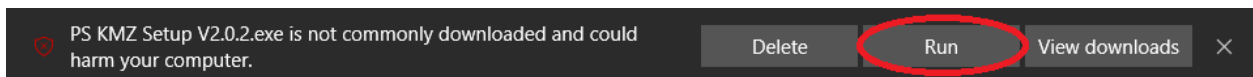


Fig. T3 Troubleshooting – Running the Update Using Microsoft Edge

Updating Using Google Chrome

If the default Browser is set to Google Chrome, the download will begin and be accessible through the “Downloads” menu option. To reach this first click the triple vertical dots to access the menu, then click “Downloads” as outlined in figure H#.

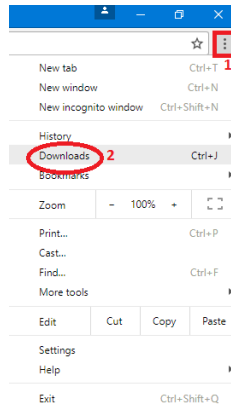


Fig. T4 Troubleshooting – Downloads Location for Google Chrome

Click on the file to run the executable file and follow prompts to complete the update.



Fig. T5 Troubleshooting – Running the Update Using Google Chrome

Running the executable file will guide the user through the upgrade process.

Updating Using Mozilla FireFox

If Mozilla FireFox is set as the default Browser, you will be asked to save the file. Click “Save File” as shown in figure H#.

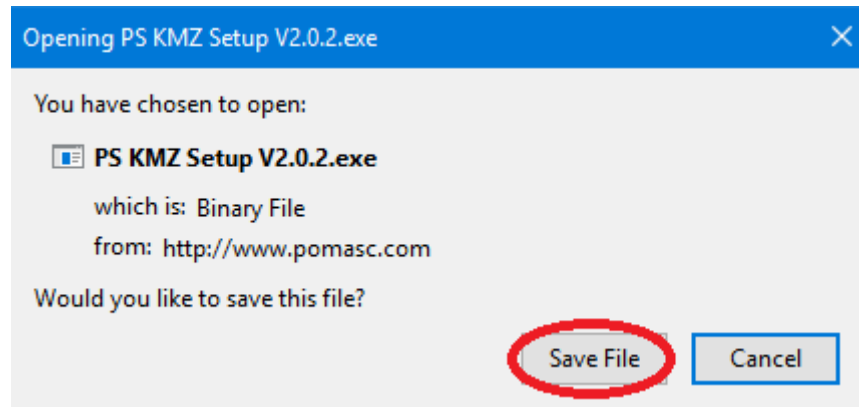


Fig. T6 Troubleshooting – Saving the Update Using Mozilla Firefox

After the file is saved, refer to figure H# to locate it. Clicking the downward pointing arrow (1) located at the top right of the Browser screen will show the downloaded update (2). Clicking the executable file (2) will run the update. Follow prompts to complete the update process.



Fig. T7 Troubleshooting – Location of Downloads in Mozilla Firefox

Windows Protected Your PC Warning

During the update process, a warning may be displayed urging the user to view more information about the file and verify that you want to continue. This is to protect the user against accidental downloads or malicious software, and will display if Microsoft does not recognize the application. It is safe to continue with the installation of the KMZ Creator Software. Select “More info” to proceed.

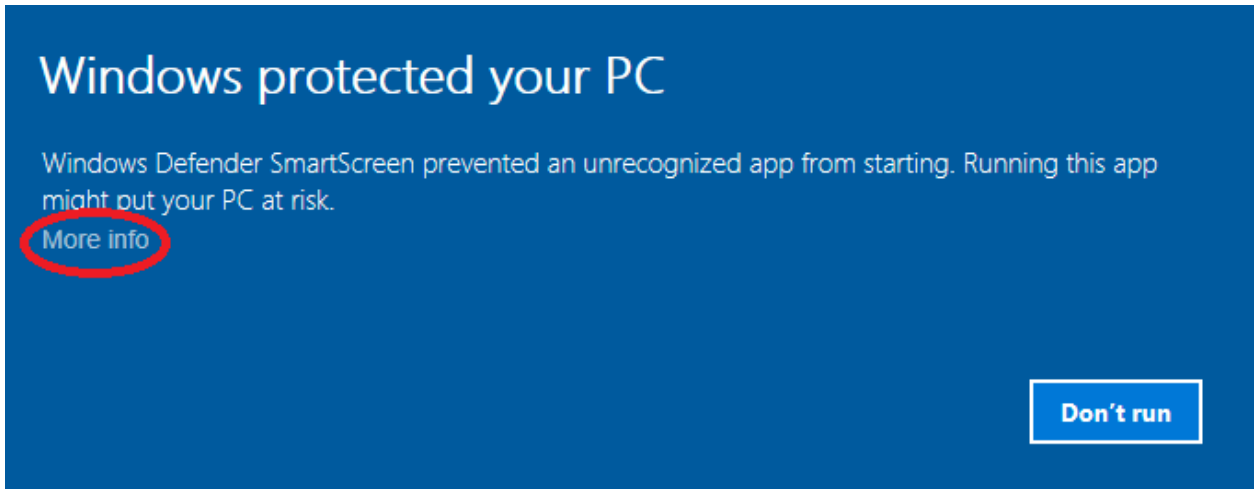


Fig. T8 Troubleshooting – Windows Warning

Proceed to click “Run anyway” and follow the prompts to complete the installation.

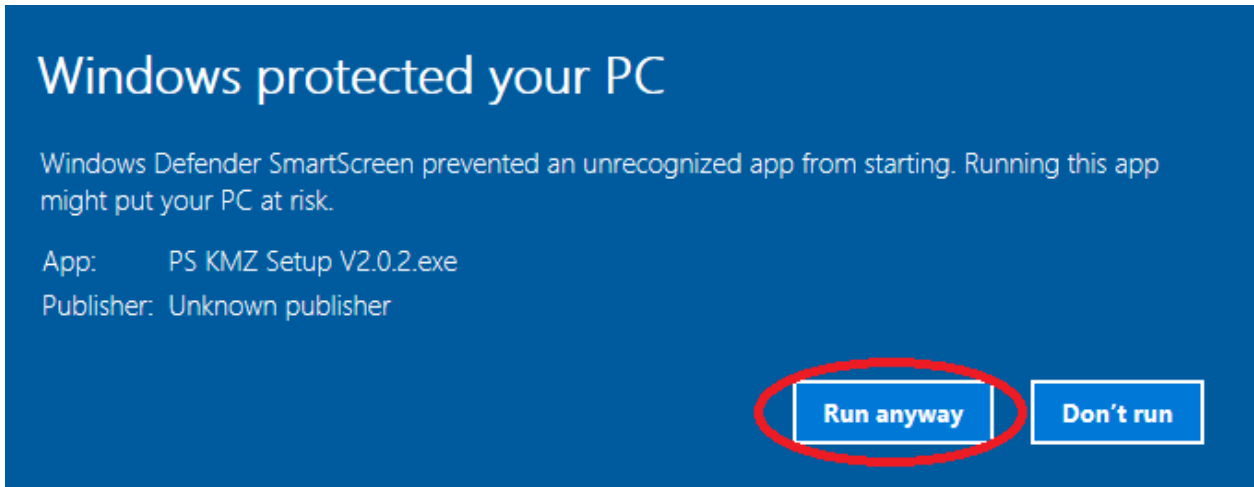


Fig. T9 Troubleshooting – Run Anyway

Software Requirements

Required Software:

PDF Viewer (We suggest Adobe)

Google Earth (Latest Version)

This software will run on Windows 7, Windows 8 and Windows 10.

If the computer can run the OS then it will have enough available RAM to run the software.

100 Megs of available hard drive space.