

Running the Hui Reports

Overview

This document describes the step-by-step process for creating the Excel spreadsheets that are distributed by Hui O Ka Wai Ola each quarter to share the water quality data the organization has collected. These spreadsheets are commonly called the quarterly web exports. Central to this process is the running of a javascript program that ingests the data from several sources, combines them and writes out files that are then used to create the Excel spreadsheets. The three sources of data are:

- Data measured in the field that is stored in Google Drive spreadsheets maintained by the team leads.
- Nutrient data measured by the SOET lab from samples sent from the field, sent to the Hui with as Excel spreadsheets
- Collection site information

These sources of data must be downloaded to a computer in a particular format before the javascript program can read them. These steps are covered below.

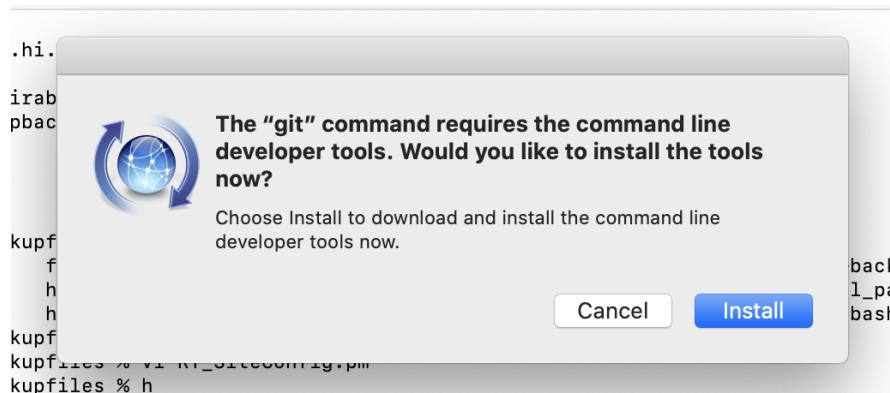
You must have some experience, but minimal, on running commands on the command line in UNIX. This can be either on a Macintosh computer or a computer running some flavor of Linux. You can also run Linux on a Windows machine using software that allows you to run it virtually, such as VirtualBox. It may be possible to run the scripts on a Windows machine, but the author does not possess one to be able to try it. This procedure assumes you know how to bring up a command tool and type in commands. If you don't know how to do that, you can explore that skill on your own or maybe find someone who has that knowledge to help you.

Setup for MacOS

Installing Git

To be able to run the quarterly web export reports, one must download a copy of the github code repository to obtain the javascript. To get started on a Macintosh, you must have the “git” command available. To have “git” installed, you will need to install the Apple developer tools if they not already installed. That step will be covered below if they are needed. You will only need to do this once. See addendum “[Github and version control for the software](#)” for more information.

Open up a Terminal and type in the “git --version” command. If you do not have git installed, it will pop up a dialog box like this:



Reply “Install”

This may take several minutes depending on your internet connection.

On MacOS (this example was on a machine running MacOS Catalina, Version 10.15.3) , the “git --version” command now results in this:

```
% git --version  
git version 2.24.1 (Apple Git-126)
```

Now make a folder either with the Finder or on the command line for placing the hui-reports repository, such as “hui-data”. Your choice.

Example:

```
% mkdir hui-data
```

```
% cd hui-data
```

Now check out a copy of the repository:

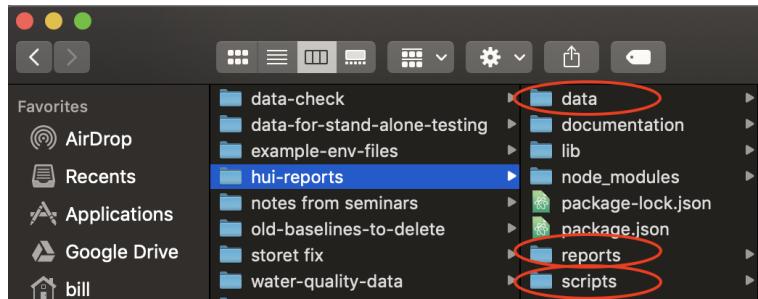
On the command line in your terminal, enter the command:

```
git clone http://github.com;brathfon/hui-reports
```

You should see something like this (details may vary):

```
Cloning into 'hui-reports'...
warning: redirecting to https://github.com;brathfon/hui-reports/
remote: Enumerating objects: 173, done.
remote: Counting objects: 100% (173/173), done.
remote: Compressing objects: 100% (163/163), done.
remote: Total 173 (delta 18), reused 164 (delta 9), pack-reused 0
Receiving objects: 100% (173/173), 1.20 MiB | 6.88 MiB/s, done.
Resolving deltas: 100% (18/18), done.
```

This will create a folder called hui-reports in the folder where you ran the command. In that folder you will see the following sub-folders:



You will be using the data, reports and scripts subfolders. You might use the documentation folder if you need to update this document.

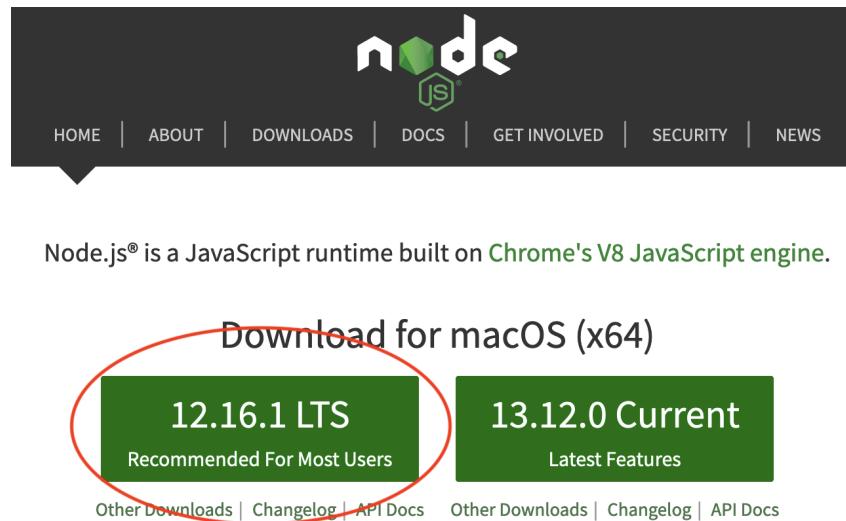
Installing Nodejs

The only special software needed to run the reports is a package called nodejs. It installs two commands: "npm" and "node". To see if you have them installed on your computer (you

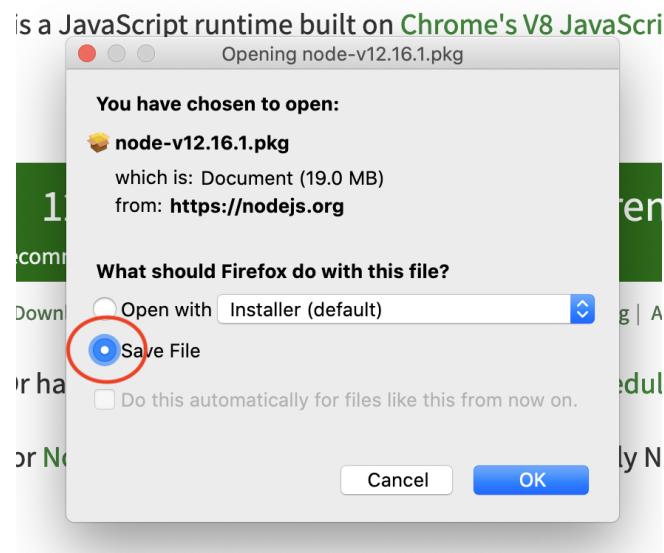
probably don't), type in "node --version" on the command line in a terminal. (In these examples, the "%" is the command line prompt. Yours may be different):

```
% node --version  
command not found
```

To install nodejs, go to the nodejs.org web site and get the current recommended version of nodejs. When this was written, this was the recommended version:

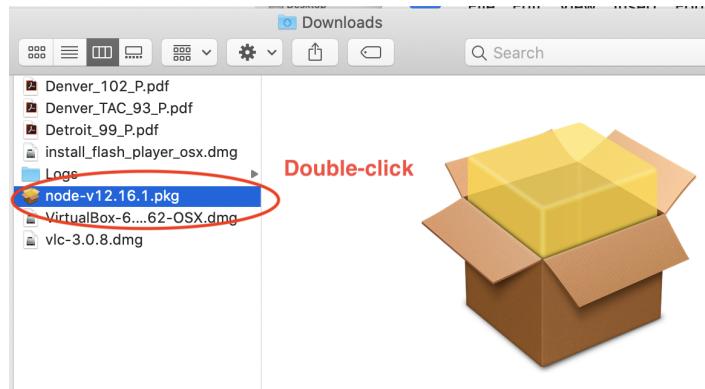


Select the "Save File" button and click OK



This will download the pkg file into your Downloads folder or wherever your browser saves downloads. Download it to a convenient folder. It can be deleted once nodejs is successfully

installed. In the Finder, double-click on the pkg file and go through the steps to install the software.



On later versions of MacOS, installing software has become more complicated due to increased security. If you get a message like this below, follow the steps below in "[Installing on MacOS Catalina 10.15](#)" in the addendum. Not to worry: nodejs is safe to install on your computer. It is used to power the apps of Netflix, Walmart, Uber, to name a few. This installation problem is supposed to be fixed in Nodejs version 13.12.0, so you may not encounter it.



When you are done, you should be able to do these “which” commands successfully and

```
% node --version  
V12.16.1
```

Now install the one nodejs node library needed with the “npm install” command. This will create and populate the “node_modules” directory.

```
npm install
```

Updating the Insitu Data from Google Drive

If you are going to create some web export Excel spreadsheets for distribution, you need to download the latest data that is stored in Google Drive spreadsheet “Hui o ka Wai Ola Data Entry” and store it in the hui-reports git repository as tab separated text files. This is the spreadsheet where the field data is entered by the team leads, commonly referred to as insitu data.

It may be in preparation to create a quarterly web export file for distributing the data to the Hui web site and other interested parties, or just updating the git repository after a two week session of collecting data in both West Maui and South Maui. It is preferable to do this process after each 2 week session to keep the amount of data to review to a smaller amount, but not required.

This process should be done after the QA officer reviews the data, comparing the field data sheets to the data entered in Google Drive. There is a one week period between sessions where neither lab is collecting, and this is a good time for the QA officer to review things and the Data Manager to do this procedure.

The example may be from different sessions of processing data, so the date and session names for the files, etc. may not be consistent, but you should be consistent in how you name various files, using the names here as examples.

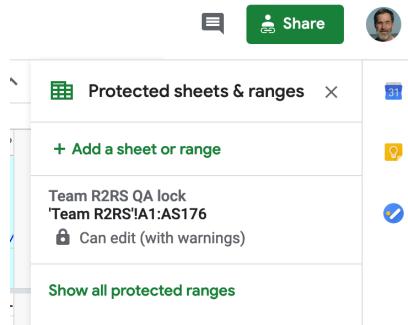
Updating the Protected Sheets and Ranges

Open “Hui o ka Wai Ola Data Entry” spreadsheet in Google Drive. For each sheet that begins with “Team” (ex: “Team R2RS”), scroll to the bottom and fill the “Copied to main database by Kim/Bill” to “yes” for each sheet. Using Cut and Paste from the “Checked by Dana” column works nicely and ensures that the QA officer has already checked the data.

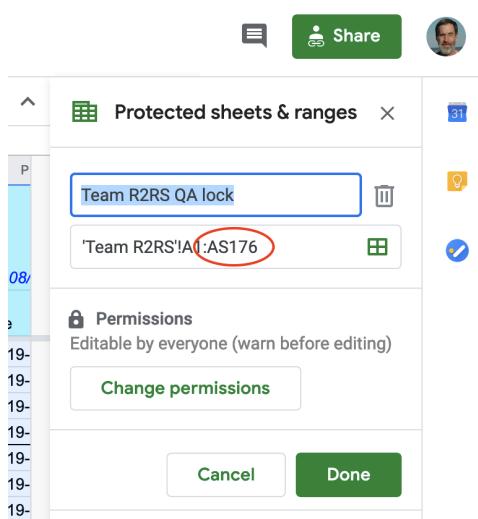
| | A | B | C | D |
|-----|-------------------------------------|-----------------|------------|------|
| 1 | Copied to main database by Kim/Bill | Checked by Dana | yes/no | yes |
| 2 | | | Nut_Sample | Nut_ |
| 174 | yes | yes | yes | n |
| 175 | yes | yes | yes | n |
| 176 | yes | yes | yes | n |
| 177 | yes | yes | yes | n |
| 178 | yes | yes | yes | n |
| 179 | yes | yes | yes | n |
| 180 | yes | yes | yes | n |
| 181 | yes | yes | yes | n |
| 182 | | | | |

Also, extend the “Protected sheets and ranges” to include the new data. You can come back and fix things if you find a problem later. You will be warned about your change, though.

Under the Data menu, select “Protected Sheets and Data”. You will see this in the top right of the page.



Select the lock whose name that matches the sheet you are editing. Change the row number. In this example, it is row 181, so change it from 176 to 181, and select “Done”. After making the change, select it again and verify it is covering all the rows of the sheet. Select “Cancel” or “Done”.



Download tab separated sheets

Go to “Hui o ka Wai Ola Data Entry” spreadsheet and export each sheet as tab delimited. File / Download As -> / Tab Separated Values (.tsv current, current sheet). See image below. Do this for all the sheets in the spreadsheet, including Session Info, Turbidity Verification, etc. so there is a complete set.

Hui o ka Wai Ola Data Entry

File Edit View Insert Format Data Tools Add-ons Help Last edit was made yesterday by [redacted]

Share...

New

Open... ⌘O

Import...

Make a copy...

Download as

Email as attachment...

Make available offline

Version history

Rename...

Add to My Drive

Move to trash

Microsoft Excel (.xlsx)

OpenDocument format (.ods)

PDF document (.pdf)

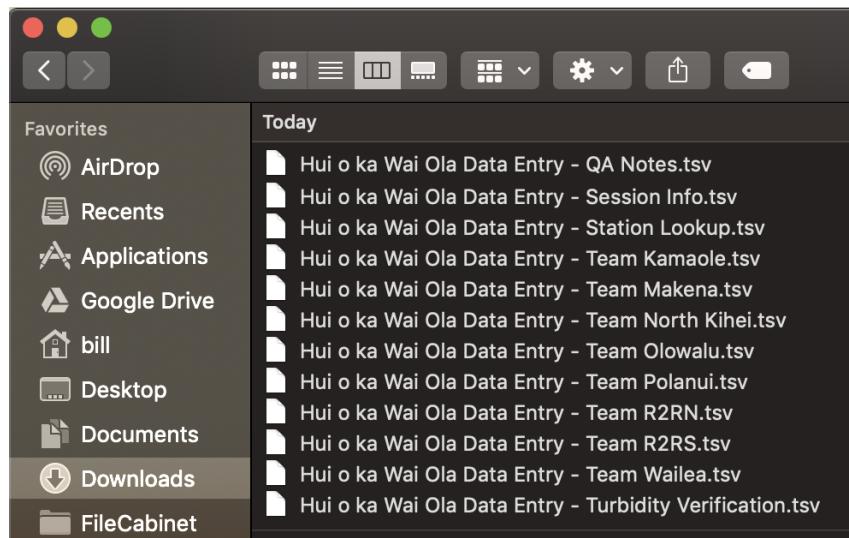
Web page (.html, zipped)

Comma-separated values (.csv, current sheet)

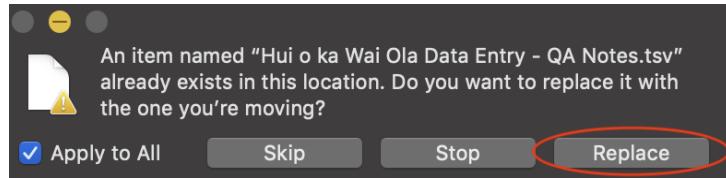
Tab-separated values (.tsv, current sheet)

| | C | D | E | |
|----------------|--------------|--------------|---------------|------|
| MS - ctuary | 27 | | | |
| | Pre Ver Date | Pre Ver Time | Post Ver Date | Post |
| Example | 6/19/17 | 10:15 AM | 6/23/2017 | |
| | 10/2/17 | 10:00 | 10/12/17 | |

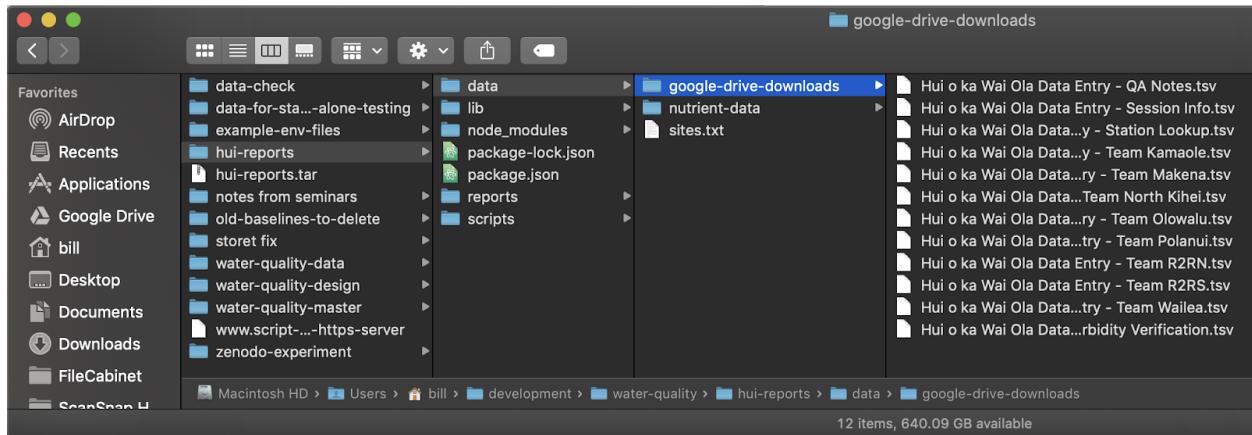
When you are done, you should have 12 files in Downloads or wherever you have your browser save your files.



There should be 12 files. Copy or move the downloaded files into the hui-reports/data/google-drive-downloads folder in the git repository you previously downloaded from github to replace the existing, out-of-date files. You will be asked to replace the files, say "Replace" with "Apply to All" button selected



You should have all new files now in the hui-reports/data/google-drive-downloads folder.



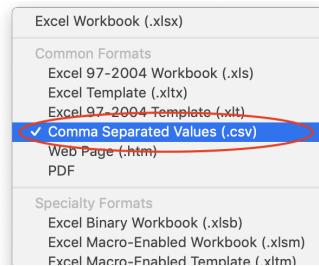
Updating the Nutrient Data

These are the steps to take when receiving new nutrient data. They currently work for data received from the SOEST lab at University of Hawaii - Manoa. They are sent as Microsoft Excel spreadsheets which are saved as CSV files (comma separated variable files) and then ingested by the script that recreates the web export files.

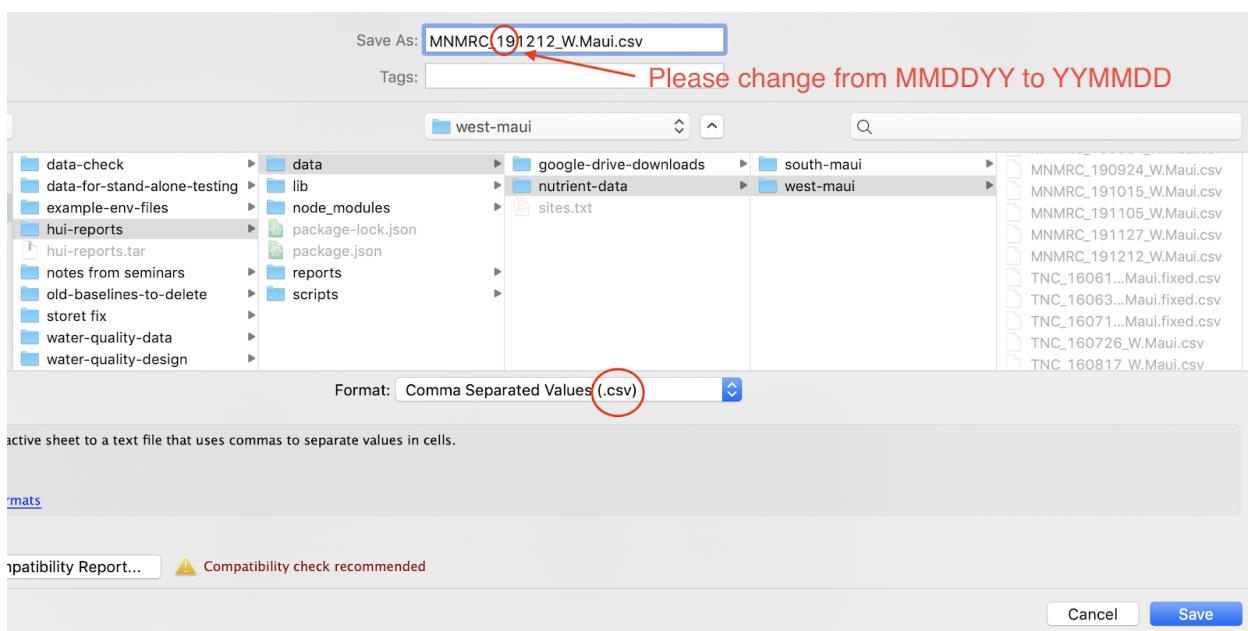
If you are also updating insitu data at the same time, you should have added that first as in section [Updating the Insitu Data from Google Drive](#)

If you have new spreadsheets from the SOEST lab, open them up one at a time and save as comma separated files (.csv) into either hui-reports/data/nutrient-data/south-maui or hui-reports/data/nutrient-data/west-maui, depending on the lab. Follow the steps detailed below.

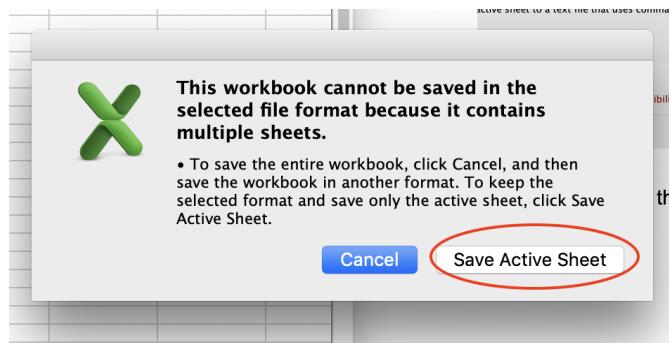
Open the received spreadsheet with Excel and convert the “Final Data” worksheet into a csv file with “File -> Save as....” and choose “Comma Separated Values (.csv)” in the “Format:” pulldown. Save it into the csv folder for that lab (see screen capture below). The option for “Common Separated Values (.csv)” is one of the top choices in “Format:”.



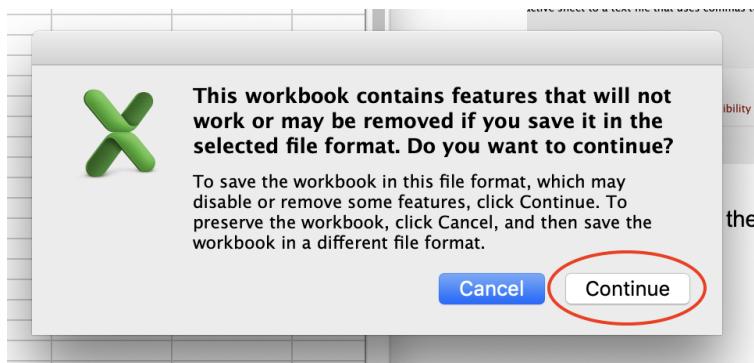
As you do, please convert the name of the csv file from MMDDYY to YYMMDD. Thank you.



Don't worry about the “This workbook cannot be saved in the selected file format because it contains multiple sheets” error. Only the “Final Data” sheet is needed. Select the “Save Active Sheet” button to continue.



Also select “continue” when prompted about “This workbook contains features that will not work or may be removed



Close the worksheet. Always select “Don’t save” when prompted by Excel when you close the original spreadsheet.

Note: you will see some of the existing files with part of their names including “fixed”. Example: TNC_170718_W.Maui.fixed.csv. There are sometimes problems with the files and it takes some fixing by the QA person. Usually it is a problem with the sample ID, like the date is wrong. These errors need to be corrected or the nutrient data will not get associated with the insitu data when the web export file is created. The script looks for files in the directory that end in .csv and processes them. The rest of the name does not matter. Therefore, you can make modifications to the name if it helps you track problems and fixes, but it must end in “.csv” . Just don’t leave two files for the same session in the folder.

Creating the Quarterly Web Export Files

These are the steps for creating the quarterly web export files, which are Excel spreadsheets, to distribute the Hui's data. This is usually done on the 15th of the month after the quarter is done, so:

| Quarter | Date Published |
|-------------|----------------|
| 1st quarter | April 15th |
| 2nd quarter | July 15th |
| 3rd quarter | October 15th |
| 4th quarter | January 15th |

If you haven't done so, make sure you have the latest data downloaded in your data folder from Google Drive (section [Updating the Insitu Data from Google Drive](#)) and any new nutrient data from the SOEST lab (section [Updating the Nutrient Data.](#))

In the terminal, cd to hui-reports/scripts

```
cd hui-reports/scripts
```

Run the quarterly-run-file.sh. If you just type in the command with no arguments, you will see the usage for the script:

```
% ./quarterly-run-file.sh
Usage: quarterly-run-file.sh <basename for file. ex: 2019-4th-quarter.0>
```

Pick a basename for the files the script will generate. The script is going to create 3 files: one for each lab and one that contains all labs. For example: the basename of **2019-4th-quarter.0** creates files:

```
2019-4th-quarter.0.LLHS-lab.tsv
2019-4th-quarter.0.NMS-lab.tsv
2019-4th-quarter.0.all-labs.tsv
```

The form YYYY-xxx-quarter.0 is suggested so that an “ls” (listing) of the directory or viewing it in the Finder by name will have them in descending order for each year and quarter. The “.0” on the end indicates it is the first version for the quarter. Usually it is the first and only, but if problems are found, you might need to re-run the reports and it will help you make sure it is the newer version. Most of the time the SOEST lab is slow getting the nutrient data delivered, so you might also do a second distribution half way through the quarter.

The files are written into the hui-reports/reports/web-export-quarterly-reports folder. The script also creates a log file in the scripts/logs folder for documenting the process and for comparing to the last run. The log file should start with the form YYYYMMDD_HH-MM-SS.basename.txt (example: 20200406_20-11-43.example basename.txt).

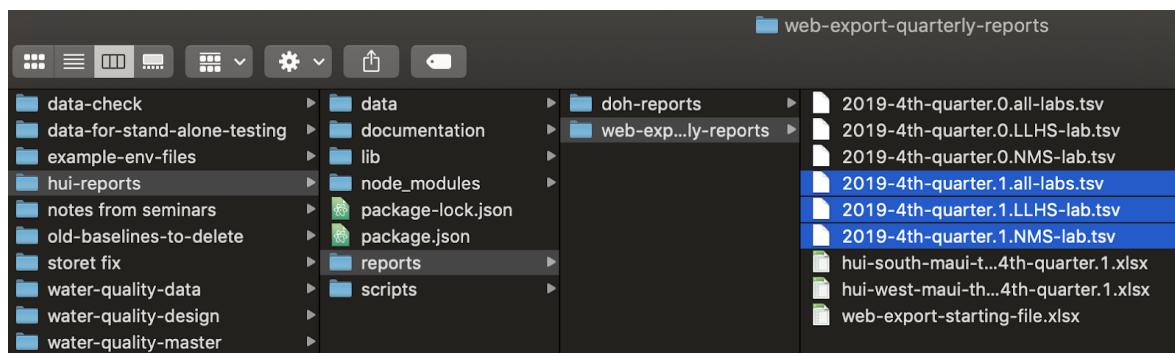
In this example, the 4th quarter is being run for a 2nd time because new nutrient data came in from the SOEST lab about a month after the end of the quarter.

Run the script:

```
% ./quarterly-run-file.sh 2019-4th-quarter.1
```

You will see messages coming to the screen. Most of these are known warnings, errors, or debug messages from the script. They are also written into the log. This is where it is helpful to have a log file each time you run it. You can “diff” the new log file against the last file and see if there are any new warnings or errors with the UNIX diff command (see [Example of diffs you might see in when differencing logs](#) in the Addendum). You can see the current known warnings and errors here in the addendum: [Current known warnings when running the scripts](#)

The three files selected below were generated from running the script. They will be used to create the final Excel file in the next steps.



Preparing the EXCEL File

This example is using Microsoft Office 2011 on a Mac. Your experience may vary given the version of Excel you have.

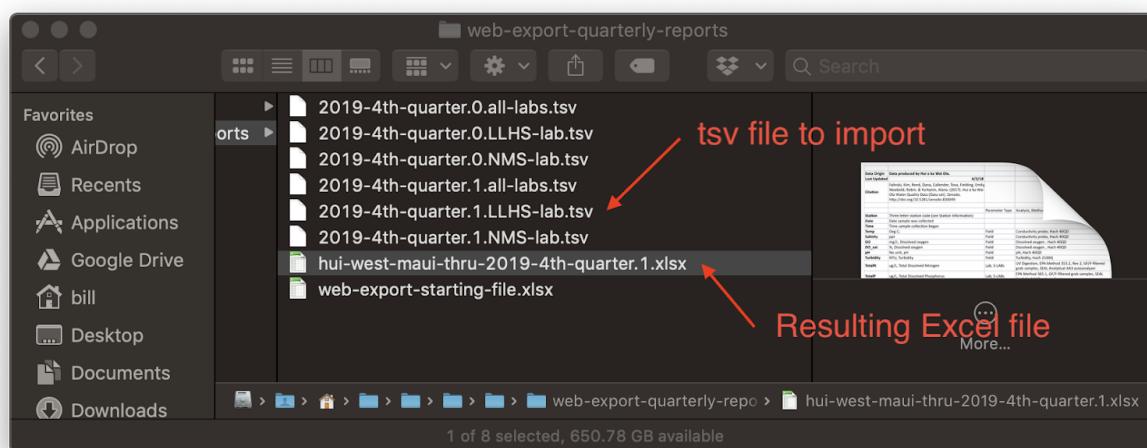
Open the web-export-starting-file.xlsx in the hui-reports/reports/web-export-quarterly-reports.

This file is important because if the spreadsheet has “use 1904” on a Mac, it will screw up the dates. Check this in Preferences -> Formulas and List -> Calculation and make sure “Workbook and Options -> Use the 1904 Date System” is **unchecked**.

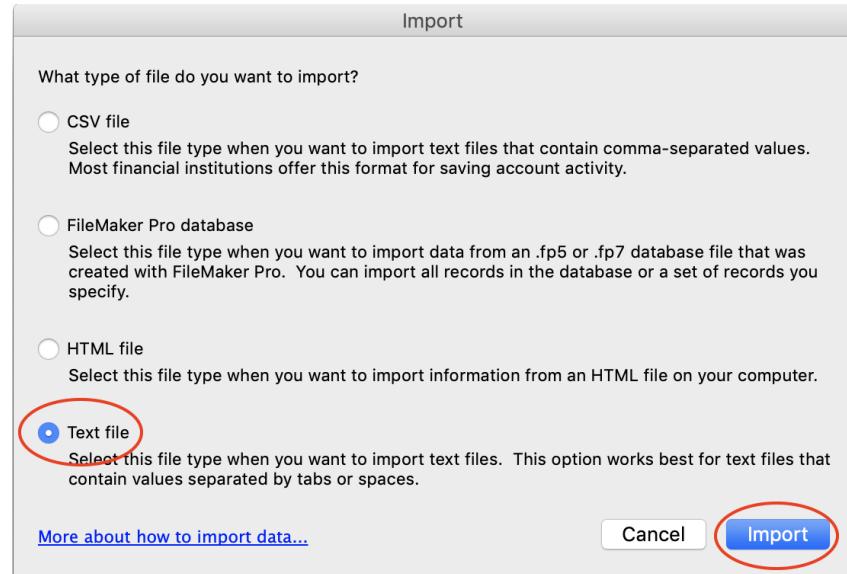
In the same folder as the tab delimited files, save as xlsx file with the name of the form:

hui-<lab>-maui-thru-YYYY-<1st|2nd|3rd|4th>-quarter.<version #>.xlsx (examples:

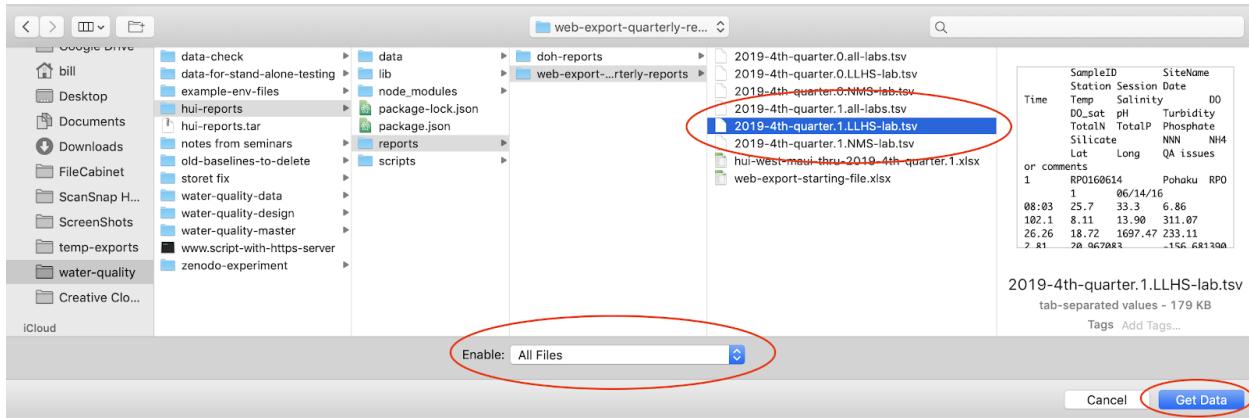
hui-south-maui-thru-2019-4th-quarter.1.xlsx or hui-west-maui-thru-2020-1st-quarter.0.xlsx).



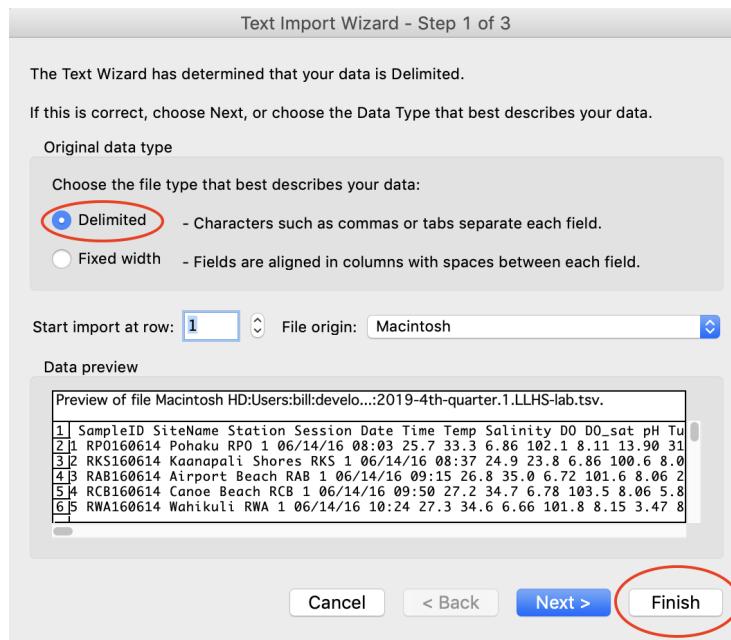
Select File --> Import... --> . In the Import popup, select the “Text File” button and select the “Import”



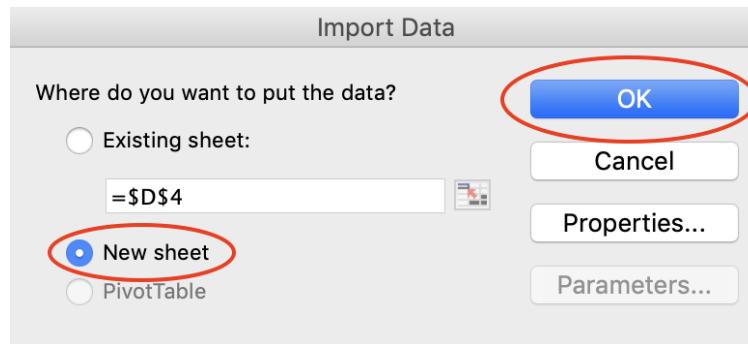
Use the file chooser window to select the *.tsv file for the lab. You will need to “Enable all files” in the file chooser. Select the file and push the “Get Data” button.



Use default of “delimited” button, and select the “Finish” button.



Select “New Sheet” button and OK.



Rename the sheet “data” and change it to the “Normal” view in the lower left corner.

| | | | | |
|----|----|-----------|---------------------|-----|
| 37 | 36 | PLH160713 | Lindsey Hale | PLH |
| 38 | 37 | PLT160713 | Lahaina Town | PLT |
| 39 | 38 | OLP160713 | Launiupoko | OLP |
| 40 | 39 | OSF160713 | Olowalu Shore Front | OSF |
| 41 | 40 | OPM160714 | Peter Martin Hale | OPM |
| 42 | 41 | OCO160714 | Camp Olowalu | OCO |
| 43 | 42 | OMM160714 | Mile Marker 14 | OMM |

Normal View Ready

Select lat and long columns and and format them to be number, decimal places 6. (command 1 on Mac after selection).

| | T | U | |
|-----|-----------|-------------|-------|
| .81 | Lat | Long | QA is |
| .15 | 20.967083 | -156.68139 | |
| .88 | 20.949331 | -156.691124 | |
| .27 | 20.936669 | -156.69278 | |
| 1.5 | 20.910347 | -156.689382 | |
| .84 | 20.904476 | -156.685931 | NH4 I |
| .89 | 20.86732 | -156.67605 | |
| .57 | 20.86485 | -156.67374 | |
| 2.8 | 20.86356 | -156.67297 | |
| .74 | 20.80916 | -156.62289 | |
| .69 | 20.80986 | -156.61369 | |
| .79 | 20.80915 | -156.60661 | |
| .92 | 20.79448 | -156.58142 | |
| .45 | 20.793809 | -156.575211 | |
| | 20.792747 | -156.567326 | |

Format Cells

Number Alignment Font Border Fill Protection

Category: Number

Sample: Lat

Decimal places: 6

Use 1000 Separator (,)

Negative numbers: -1234.543210
1234.543210
(1234.543210)
(1234.543210)

Number is used for general display of numbers. Currency and Accounting offer specialized formatting for monetary value.

OK

Select DO, pH, turbidity, TotalN, TotalP, Phosphate, Silicate, NNN, NH4 (9 total) to be formatted as a number, decimal places 2.

| G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | Issue |
|------|----------|------|--------|------|-----------|--------|--------|-----------|----------|--------|------|-----------|-------------|----------|-------|
| Temp | Salinity | DO | DO_sat | pH | Turbidity | TotalN | TotalP | Phosphate | Silicate | NNN | NH4 | Lat | Long | QA issue | |
| 25.7 | 33.3 | 6.86 | 102.1 | 8.11 | 13.9 | 311.07 | 26.26 | 18.72 | 1697.47 | 233.11 | 2.81 | 20.967083 | -156.681390 | | |
| 24.9 | 23.8 | 6.86 | 100.6 | 8.07 | 16.8 | 75.08 | 18.8 | 9.06 | 1720.37 | 5.65 | 4.15 | 20.949331 | -156.691124 | | |
| 26.8 | 35 | 6.72 | 101.6 | 8.06 | 2.52 | 91.25 | 10.73 | 8.16 | 504.37 | 24.72 | 1.88 | 20.936669 | -156.692780 | | |
| 27.2 | 34.7 | 6.78 | 103.5 | 8.06 | 5.86 | 117.22 | 16.68 | 9.14 | 570.28 | 49.04 | 2.27 | 20.910347 | -156.689382 | | |
| 27.3 | 34.6 | 6.66 | 101.8 | 8.15 | 3.47 | 84.6 | 24.07 | 12.38 | 822.08 | 21.35 | 1.5 | 20.904476 | -156.685931 | | |
| 26.7 | 27.8 | 6.27 | 94.7 | 8.05 | 2.89 | 65.9 | 17.64 | 7.82 | 461.59 | 2.7 | 1.84 | 20.867320 | -156.676050 | | |
| 26.8 | 28.1 | 6.57 | 99.6 | 7.99 | 2.8 | 90.04 | 14.32 | 6.22 | 169.92 | 2.79 | 2.89 | 20.864850 | -156.673740 | | |
| 27.2 | 28.2 | 6.72 | 102.4 | 8.09 | 2.91 | 72.13 | 11 | 5.58 | 125.36 | 4.24 | 2.57 | 20.863560 | -156.672970 | | |
| 27.4 | 29.6 | 6.94 | 106.1 | 8.11 | 1.10 | 71.07 | 14.41 | 4.95 | 72.0 | 4.07 | 2.0 | 20.860160 | -156.672970 | | |

Set to 2 decimal points

Select Temp, Salinity, and DO_sat and format to be a number, decimal places 1.

| G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | |
|------|------|----------|------|--------|------|-----------|--------|--------|-----------|----------|--------|------|-----------|-----------------|-------|
| me | Temp | Salinity | DO | DO_sat | pH | Turbidity | TotalN | TotalP | Phosphate | Silicate | NNN | NH4 | Lat | Long | QA is |
| 8:03 | 25.7 | 33.3 | 6.86 | 102.1 | 8.11 | 13.9 | 311.07 | 26.26 | 18.72 | 1697.47 | 233.11 | 2.81 | 20.967083 | -156.681390 | |
| 8:37 | 24.9 | 23.8 | 6.86 | 100.6 | 8.07 | 16.8 | 75.08 | 18.8 | 9.06 | 1720.37 | 5.65 | 4.15 | 20.949331 | -156.691124 | |
| 9:15 | 26.8 | 35 | 6.72 | 101.6 | 8.06 | 2.62 | 91.26 | 10.73 | 8.46 | 604.37 | 24.72 | 1.88 | 20.936669 | -156.692780 | |
| 9:50 | 27.2 | 34.7 | 6.78 | 103.5 | 8.06 | 5.86 | 117.22 | 16.68 | 9.40 | 576.28 | 49.04 | 2.27 | 20.910347 | -156.689382 | |
| 0:24 | 27.3 | 34.6 | 6.66 | 101.8 | 8.15 | 3.47 | 84.6 | 24.07 | 12.38 | 822.08 | 21.35 | 1.5 | 20.904476 | -156.685931 NH4 | |
| 7:37 | 26.7 | 27.8 | 6.27 | 94.7 | 8.05 | 2.89 | 65.9 | 17.64 | 7.82 | 461.59 | 2.7 | 1.84 | 20.867320 | -156.676050 | |
| 8:28 | 26.8 | 28.1 | 6.57 | 99.6 | 7.99 | 2.8 | 90.04 | 14.32 | 6.22 | 169.92 | 2.79 | 2.89 | 20.864850 | -156.673740 | |
| 8:59 | 27.2 | 28.2 | 6.72 | 102.4 | 8.09 | 2.91 | 72.13 | 11 | 5.58 | 125.36 | 4.24 | 2.57 | 20.863560 | -156.672970 | |
| 0:42 | 27.4 | 29.6 | 6.94 | 106.1 | 8.11 | 1.19 | 71.07 | 14.41 | 4.85 | 72.9 | 4.07 | 2.8 | 20.809160 | -156.622890 | |

Set to 1 decimal point

Widen the “date” field a bit. Go to the bottom and observe the “nutrient data pending” comments and widen comments field for them if needed.

Finished decimal point adjustments should look like this:

| G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | |
|------|------|----------|------|--------|------|-----------|--------|--------|-----------|----------|--------|------|-----------|-------------------|--------|
| me | Temp | Salinity | DO | DO_sat | pH | Turbidity | TotalN | TotalP | Phosphate | Silicate | NNN | NH4 | Lat | Long | QA iss |
| 8:03 | 25.7 | 33.3 | 6.86 | 102.1 | 8.11 | 13.90 | 311.07 | 26.26 | 18.72 | 1697.47 | 233.11 | 2.81 | 20.967083 | -156.681390 | |
| 8:37 | 24.9 | 23.8 | 6.86 | 100.6 | 8.07 | 16.80 | 75.08 | 18.80 | 9.06 | 1720.37 | 5.65 | 4.15 | 20.949331 | -156.691124 | |
| 9:15 | 26.8 | 35.0 | 6.72 | 101.6 | 8.06 | 2.62 | 91.26 | 10.73 | 8.46 | 604.37 | 24.72 | 1.88 | 20.936669 | -156.692780 | |
| 9:50 | 27.2 | 34.7 | 6.78 | 103.5 | 8.06 | 5.86 | 117.22 | 16.68 | 9.40 | 576.28 | 49.04 | 2.27 | 20.910347 | -156.689382 | |
| 0:24 | 27.3 | 34.6 | 6.66 | 101.8 | 8.15 | 3.47 | 84.60 | 24.07 | 12.38 | 822.08 | 21.35 | 1.50 | 20.904476 | -156.685931 NH4 b | |
| 7:37 | 26.7 | 27.8 | 6.27 | 94.7 | 8.05 | 2.89 | 65.90 | 17.64 | 7.82 | 461.59 | 2.70 | 1.84 | 20.867320 | -156.676050 | |
| 8:28 | 26.8 | 28.1 | 6.57 | 99.6 | 7.99 | 2.80 | 90.04 | 14.32 | 6.22 | 169.92 | 2.79 | 2.89 | 20.864850 | -156.673740 | |
| 8:59 | 27.2 | 28.2 | 6.72 | 102.4 | 8.09 | 2.91 | 72.13 | 11.00 | 5.58 | 125.36 | 4.24 | 2.57 | 20.863560 | -156.672970 | |

Open the “meta data” sheet and update the “Last Updated” field.

Select data sheet again, make sure multiple columns are not selected, and save.

Commit the changes to the repository

If you are controlling the hui-reports directory in git, add and commit your changes

In the top level directory (hui-reports)

```
git add .
git commit -m "first quarter report without nutrient data for sessions
53 west and 28-29 south"
```

Push, or upload, the changes to github so they are saved on the cloud

```
git push
```

Tag the git repository

If this is a delivery of new reports, tag the repository

```
git tag -a v19.1.0 -m "first quarter report without nutrient data for sessions 53 west and 28-29 south"
```

```
git tag -l -n
```

To send to GitHub:

```
git push --tags
```

Distribute the Web Export Data

Dropbox

Place a copy of each file in Dropbox

Dropbox -> Technical Team_HuiokaWai Ola Share -> Data_Water Quality - TechTeamShare

On Mac - drag and drop with alt/option key selected to make sure it is a copy, not move.

Hui Website

Email a copy to Alana Yurkanin to add to Hui website.

Email a copy to PacIOS via Fiona Langenburger: fional@hawaii.edu

Zenodo

Log into Zenodo as Kim

Select New version button

Delete the last quarter's xlsx files from new version

Drag and drop new files to add them to the new version

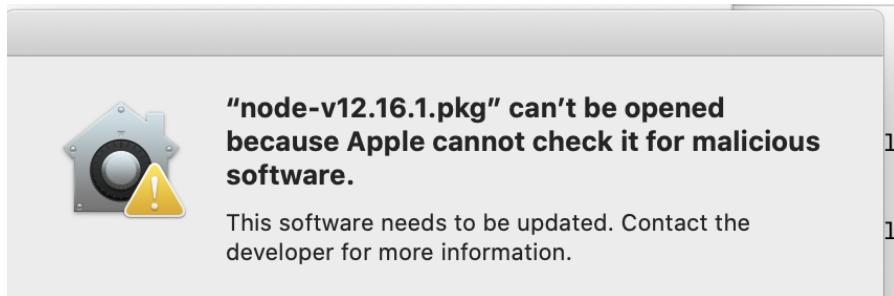
Edit dates in the description of the Hui data

Also, edit publication date
Push the upload button
Push the save button
Push publish button

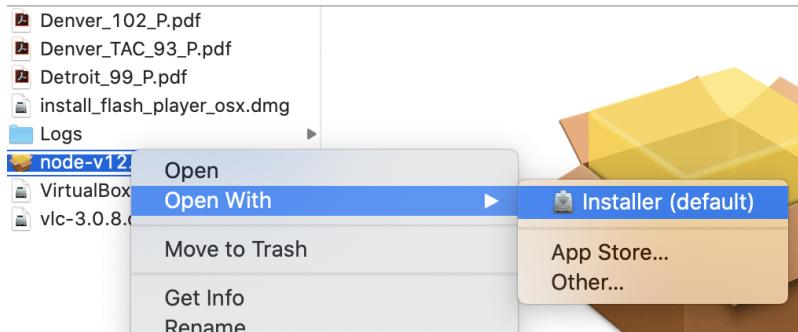
Addendum

Installing on MacOS Catalina 10.15

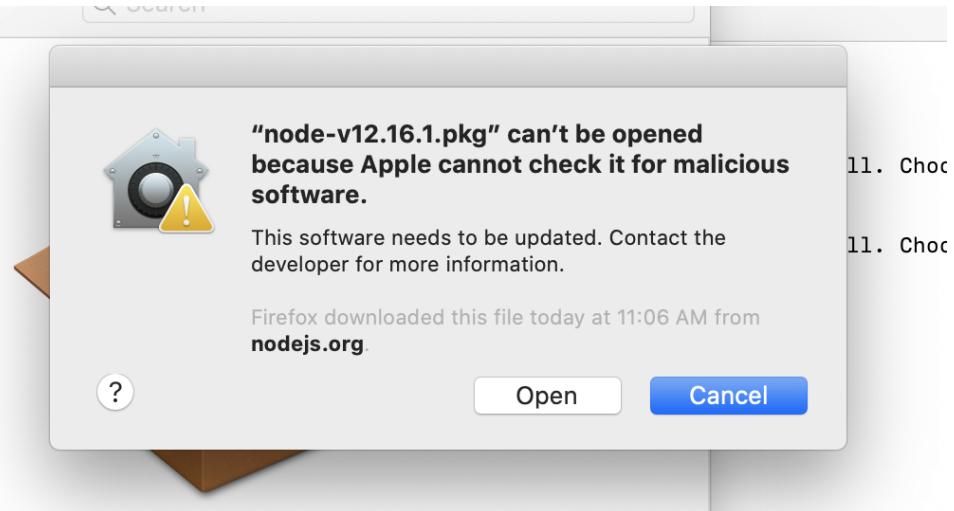
When installing nodejs on later versions of MacOS, you may get this prompt after double-clicking on the pkg file to open it.



A workaround is to use the “open” option on the pkg file. Select the node pkg in the Finder and right-mouse (or control-click) it. It will pop up a menu and use the “Open With / Installer (default) option.



You will be prompted to continue the installation. Select “open” and follow the instructions.



Github and version control for the software

The person taking over may choose not to control the software with git and github, but they are encouraged to use some kind of way to save the changes incrementally and to save it somewhere in the cloud so it is not just on their computer.

NOTE: this section needs more work. Since the person checking out the repository is not the owner (Bill Rathfon), they will not be able to push changes back to the repository. Either they need to create a github account and clone Bill's hui-reports repository into their account as a first step, then clone it down to their computer, or they could probably do that step later by removing the .git folder from their copy, create their own github account, create a "hui-reports" repository in github, "git init" their local copy and then push it up to github. The steps above will at least allow someone to create the reports if Bill is not able to and save them locally on their machine. Saving them locally is not ideal. Being able to push the changes back to github will save them in the cloud.

Current known warnings when running the scripts

These are the know warnings and errors as of 3/30/2020

These are all sample events where the samples were actually not taken due to conditions at the site. Sometimes the samplers put in the time they arrived, sometimes they don't. The script warns about this in case the time was accidentally left blank on a good sample set.

```
'' time is blank, which may be a uncollected sample, setting to NULL sample: MML180912
in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample: MMB180912
in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample: MON180912
in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample: MAN180912
in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample: MAS180912
in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample: MML181205
in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample: MMB181205
in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample: MON181205
in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample:
MAN181205 in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample:
MAS181205 in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample:
MAS190522 in Hui o ka Wai Ola Data Entry - Team Makena.tsv
'' time is blank, which may be a uncollected sample, setting to NULL sample:
NHP180823 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv
```

```
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
NKP180823 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
NSB180823 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
NKC180823 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
NMP180823 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
NHP190117 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
NKP190117 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
NSB190117 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
NKC190117 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
NMP190117 in Hui o ka Wai Ola Data Entry - Team North Kihei.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
OSF190807 in Hui o ka Wai Ola Data Entry - Team Polanui.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
RKO180720 in Hui o ka Wai Ola Data Entry - Team R2RN.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
RKV190607 in Hui o ka Wai Ola Data Entry - Team R2RN.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
WKD180824 in Hui o ka Wai Ola Data Entry - Team Wailea.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
WKB180824 in Hui o ka Wai Ola Data Entry - Team Wailea.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
WUL180824 in Hui o ka Wai Ola Data Entry - Team Wailea.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
WPL180824 in Hui o ka Wai Ola Data Entry - Team Wailea.tsv  
'' time is blank, which may be a uncollected sample, setting to NULL sample:  
WPO180824 in Hui o ka Wai Ola Data Entry - Team Wailea.tsv
```

These are warnings about TotalP being exceeded by phosphate, which should be less than TotalP. They are close enough to allow.

```
-- WARNING: Phosphate of 6.34 > TotalP of 6.31 from line OCO181101-N-1,11 TNC  
WEST,84.35,6.31,6.34,407.53,8.89,2.93,,
```

```
-- WARNING: Phosphate of 3.54 > TotalP of 3.53 from line PPU161116-N-1,10  
TNC,64.32,3.53,3.54,191.28,4.45,<1.5
```

```
-- WARNING: Phosphate of 9.83 > TotalP of 9.68 from line RPO180220-N-1,20 TNC  
WEST,114.19,9.68,9.83,544.20,64.31,2.28
```

```
-- WARNING: Phosphate of 12.12 > TotalP of 11.89 from line KWP181204-N-1,MNMRC  
2,180.16,11.89,12.12,973.81,68.82,10.36,,
```

These are malformed Sample IDs, but they are malformed intentionally. They are one time samples at sites that are not in the site list, so they get flagged. This data is not to be included in the reports.

```
-- ***** ERROR ERROR ERROR ERROR ***** in  
MNMRC_190712_S.Maui.csv line 35  
-- ERROR: found unknown site name of NHC. from line  
NHC190703-N-1,21,424.22,22.03,20.89,1347.58,343.69,6.59,,  
  
-- ***** ERROR ERROR ERROR ERROR ***** in  
MNMRC_191022_S.Maui.fixed.csv line 36  
-- ERROR: found invalid ID BADWPO191018-N-1 Line ->  
|BADWPO191018-N-1,22,269.11,15.94,11.65,39.65,64.52,45.73,Nutrient Data likely  
contaminated - bottle cracked when S-lab received sample,,|  
  
-- ***** ERROR ERROR ERROR ERROR ***** in  
TNC_171114_S.Maui.fixed.csv line 25  
-- ERROR: found invalid ID DR171104-N-1 Line -> |DR171104-N-1,11 TNC  
SOUTH,640.08,215.91,184.48,*,22.08,164.34,|  
  
-- ***** ERROR ERROR ERROR ERROR ***** in  
TNC_180227_S.Maui.csv line 38  
-- ERROR: found invalid ID **WPO180223-N-1 no sample received Line ->  
|**WPO180223-N-1 no sample received ,,,,,,|
```

Same as the TotalP warnings above.

```
-- WARNING: NNN of 445.89 + NH4 of 5.54 > TotalN of 346.50 from line  
KCP180515-N-1,4 TNC SOUTH,346.50,31.68,25.54,1581.70,445.89,5.54,
```

Example of diffs you might see when diffing logs

This is an example of diffing logs of two quarterly report runs. The “<” points to a unique line in the first file and the “>” points to a unique line in the second file. Notice there are no new errors in the differences like in the section above ([Current known warnings when running the scripts](#)).

```
diff 20200207-4th-quarter-addendum-web-export.txt temp-test.log  
2c2  
< 'arguments passed in { _: [],\n  odir:  
  \'\..\reports/web-export-quarterly-reports\',\n  bname: \'4th-quarter.1\',\n
```

```
gsdir:\n  \'/Users/bill/development/water-quality/water-quality-data/gdrive-downloads/da\n  ta-sessions-28-66w-1-42s\',\n    lfile:\n  \'/Users/bill/development/water-quality/water-quality-data/legacy-data/west-ma\n  ui-legacy-data-sessions-1-27.tsv\',\n    sfile: './sites.txt',\n    ndir:\n  \'/Users/bill/development/water-quality/water-quality-data/soest/csv-files\'\n}\n---\n> 'arguments passed in { _: []},\n  odir:\n  \'..../reports/web-export-quarterly-reports\',\n  bname: \'temp-test\',\n  gsdir: \'..../data/google-drive-downloads\',\n  sfile: \'..../data/sites.txt\',\n  ndir: \'..../data/nutrient-data\' '\n4d3\n< In readLegacyFile\n194c193\n< Number of samples:          2112\n---\n> Number of samples:          2254\n877c876\n< Report Percision:\n---\n> Report Precision:\n895c894\n< Writing file to\n..../reports/web-export-quarterly-reports/4th-quarter.1.all-labs.tsv\n---\n> Writing file to\n..../reports/web-export-quarterly-reports/temp-test.all-labs.tsv\n898c897\n< Writing file to\n..../reports/web-export-quarterly-reports/4th-quarter.1.LLHS-lab.tsv\n---\n> Writing file to\n..../reports/web-export-quarterly-reports/temp-test.LLHS-lab.tsv\n901c900\n< Writing file to\n..../reports/web-export-quarterly-reports/4th-quarter.1.NMS-lab.tsv\n---\n> Writing file to\n..../reports/web-export-quarterly-reports/temp-test.NMS-lab.tsv
```