Processing air and water temperature data in HOBOware

Pendant	Water Temp Pro v2	Tidbit v2
		

Note: you do not need HOBOware Pro to process temperature data; you can use the free version, which can be downloaded online – http://www.onsetcomp.com/hoboware-free-download

8/24/2017

Steps

- Set up your **default settings** (see ‘HOBOware_DefaultSettings’ file); you should only have to do this once
- **Open the air or water sensor file** in HOBOware
- **Plot** the data
- Change the **Temp series name** to either ‘Water Temp’ or ‘Air Temp’
- **Open the other sensor file – change the Temp series name** to either ‘Water Temp’ or ‘Air Temp’; then c**opy the temperature data series and paste into the first file**; both air and water temperature data are now in one file*
- **Export as .csv**
- Save as an Onset Project File; retain original Onset HOBO Data files too!

*We recommend doing this! It is easy and saves you time later on.

File naming scheme

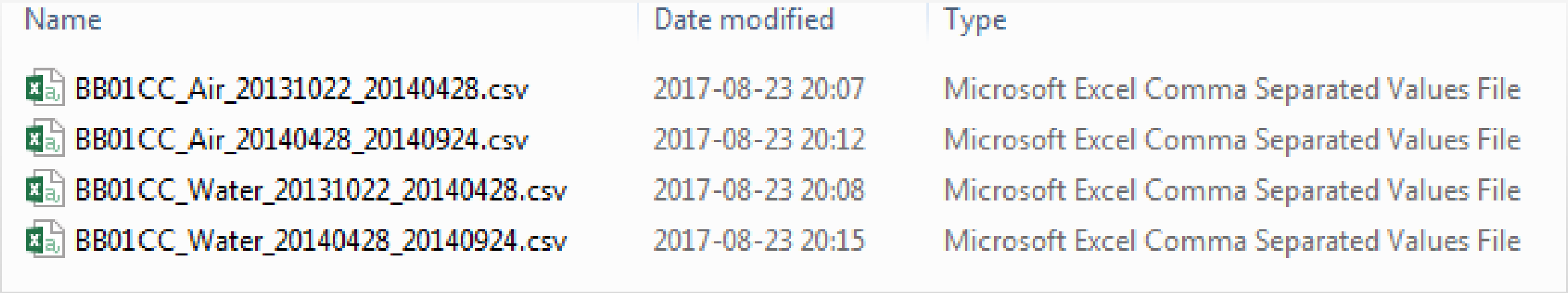
If you're going to use the ContDataQC R package, you need to use the following file naming scheme:

SiteID_SensorType_StartDate_EndDate

- Site ID (no spaces or underscores) = BB01CC
- Data Type (Water/Air/AW) (AW = Air + Water sensor data in same file)
- Date, Start (YYYYMMDD)
- Date, End (YYYYMMDD)
- Each element separated by underscore ("_").

Example:

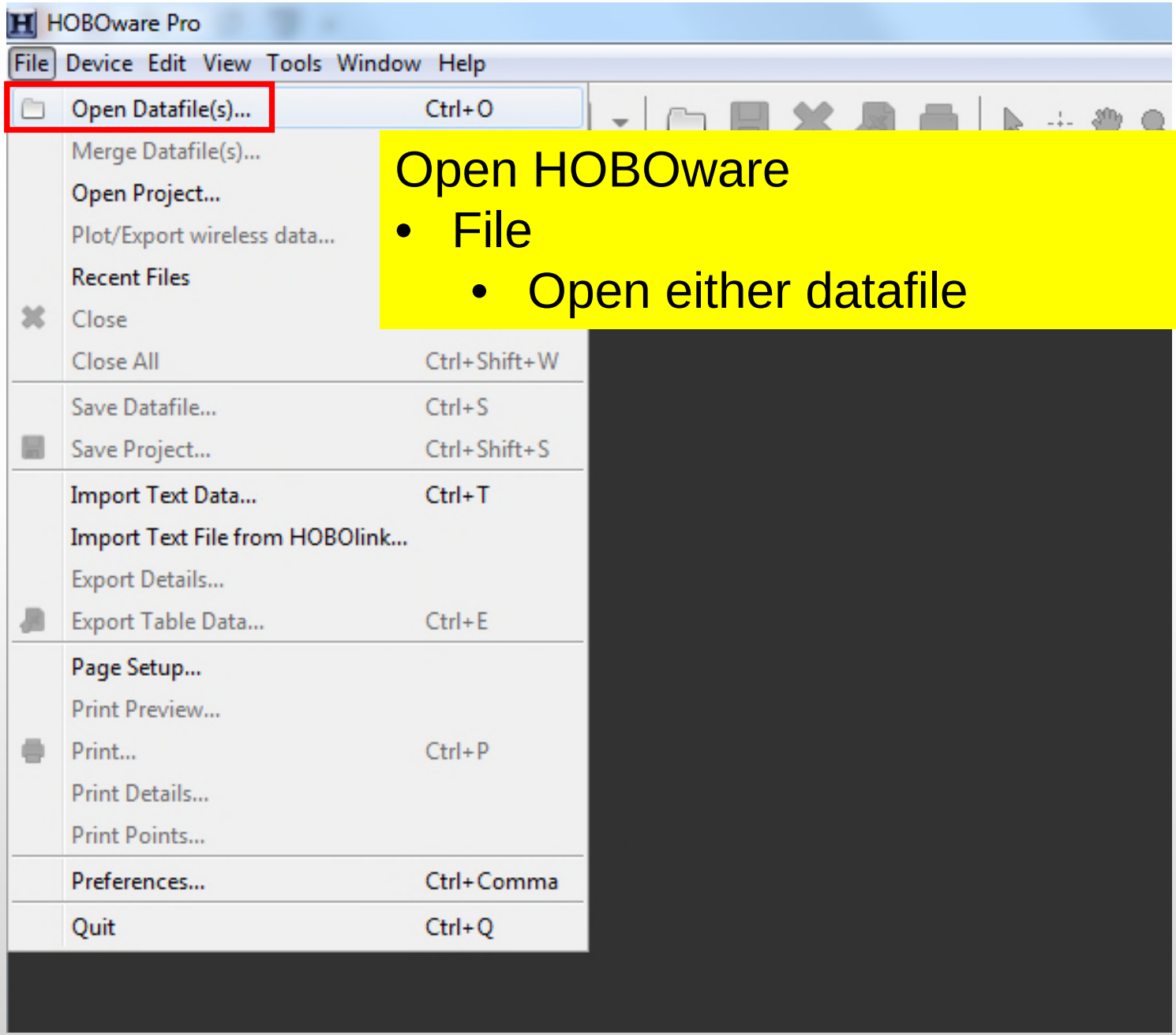
- **BB01CC_Air_20131022_20140428.csv**



Name	Date modified	Type
BB01CC_Air_20131022_20140428.csv	2017-08-23 20:07	Microsoft Excel Comma Separated Values File
BB01CC_Air_20140428_20140924.csv	2017-08-23 20:12	Microsoft Excel Comma Separated Values File
BB01CC_Water_20131022_20140428.csv	2017-08-23 20:08	Microsoft Excel Comma Separated Values File
BB01CC_Water_20140428_20140924.csv	2017-08-23 20:15	Microsoft Excel Comma Separated Values File

Other tips

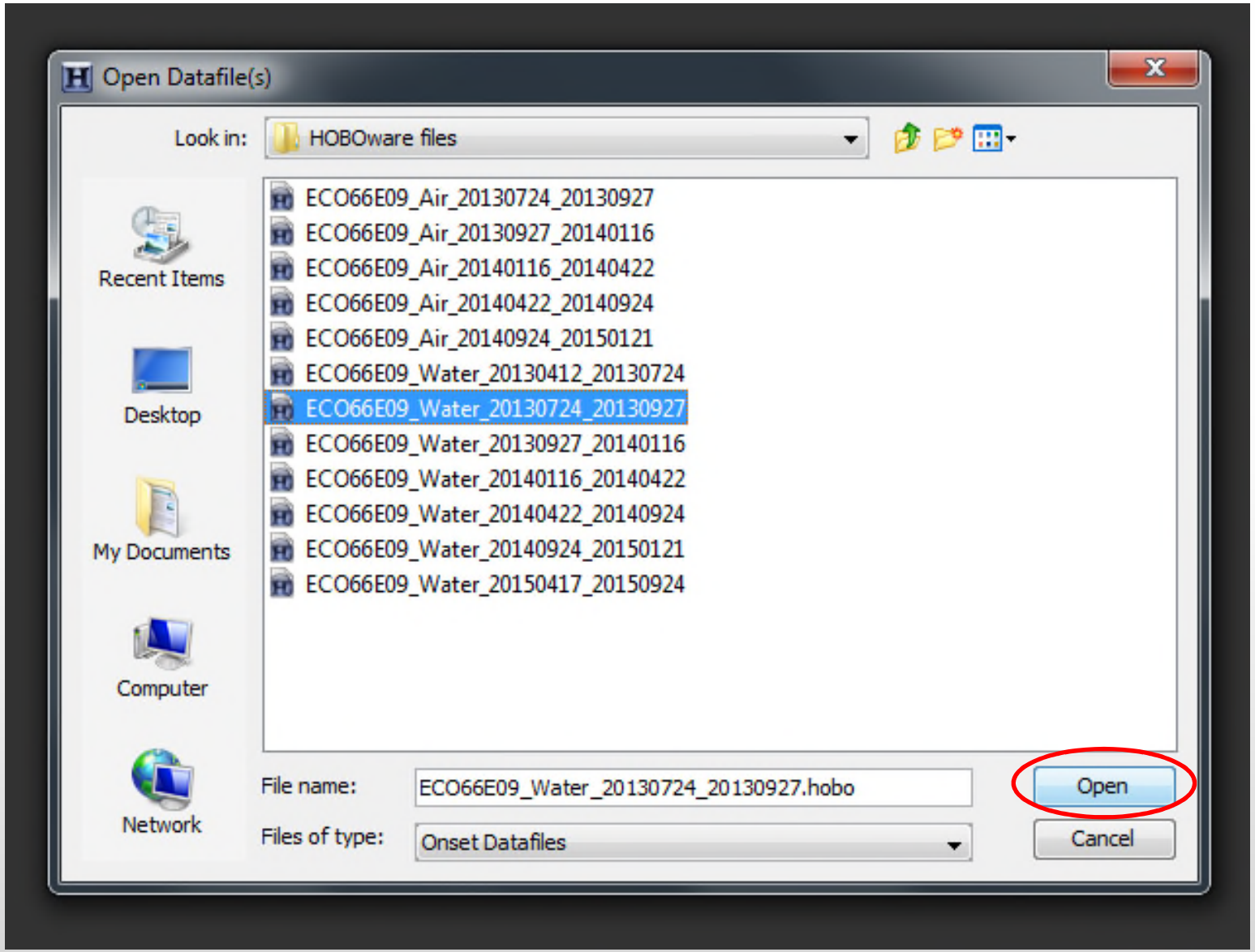
- **StationIDs** – after you come up with a name, stick with it!
- Consider setting up a **folder for each long-term monitoring site**.
- **Within each site folder**, consider setting up the folder structure described in the '**DataManagementTips**' PowerPoint.



Open HOBOware

- File
  - Open either datafile

1. Open the HOBO Datafile (in this example, we start with the for the water sensor)



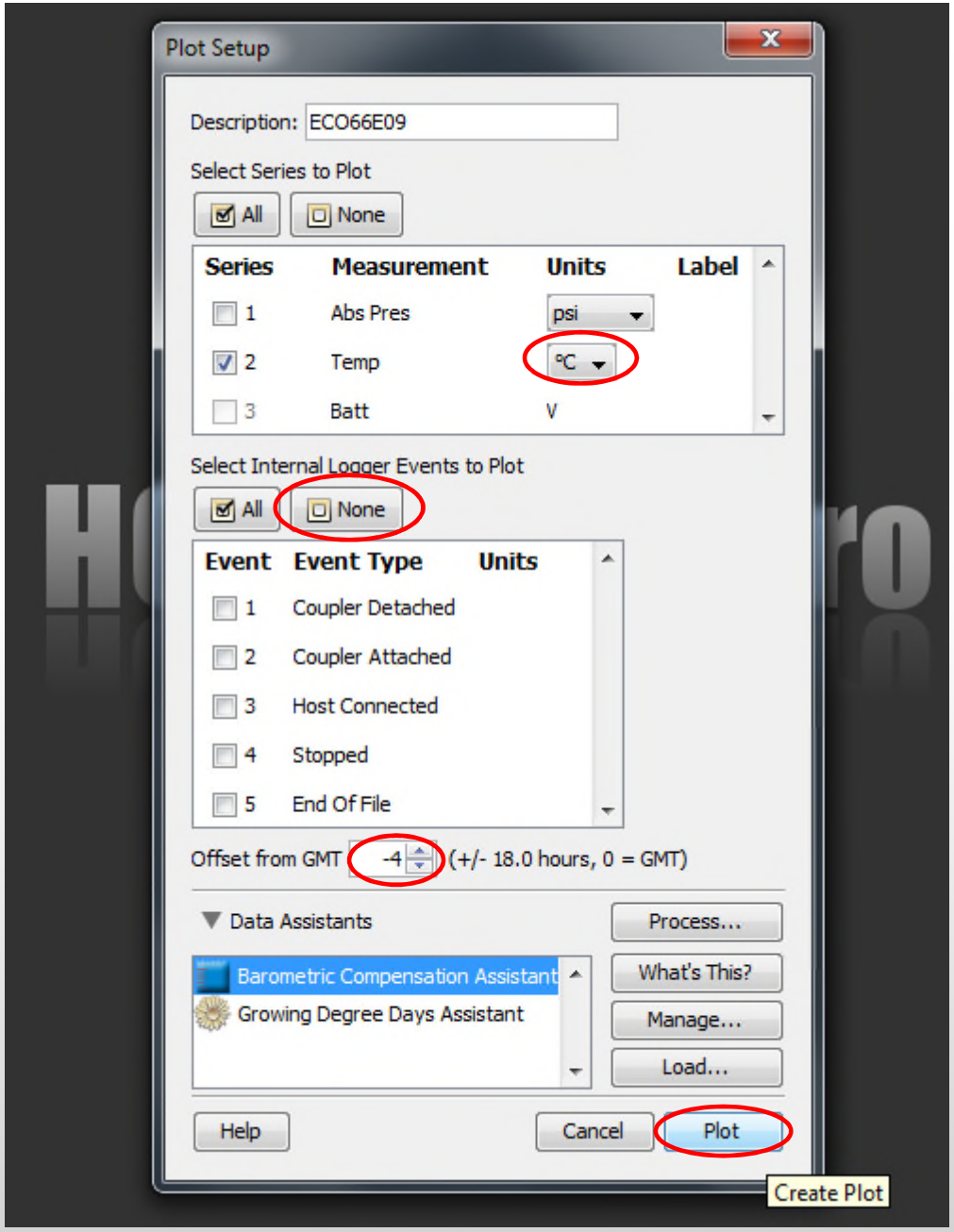
Browse/select the appropriate water sensor file

Click ‘Open’

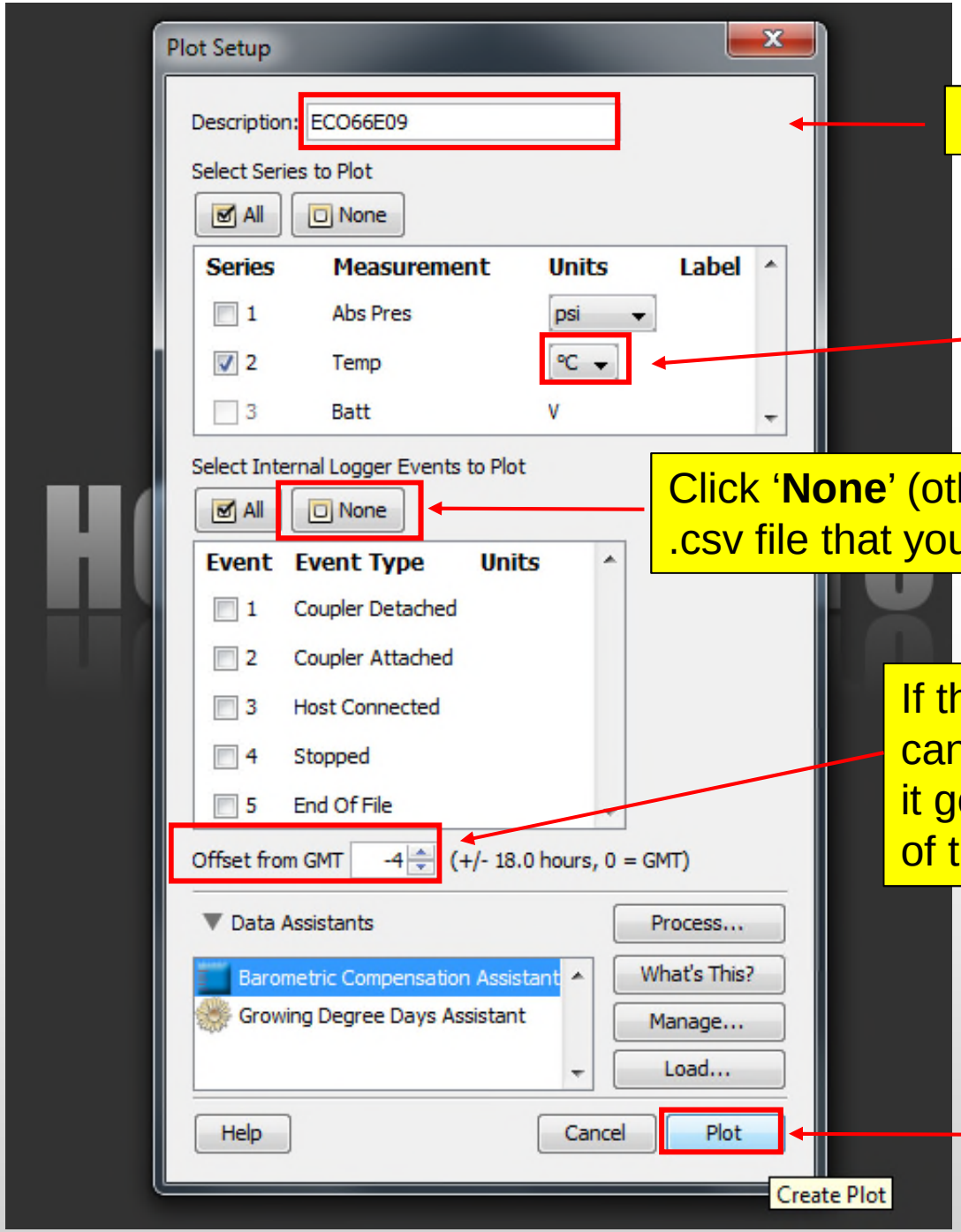
Open the water sensor file in HOBOware

Tip: if you want to use the ContDataQC R package, you can reduce the data preparation time by making the following entries –

- Description: enter **SiteID**
- Selecting **°C** for **units**
- Clicking **'None'** under Internal Logger Events to Plot
- Making sure the time offset from GMT is appropriate for the site
- Click '**Plot**'



Plot Setup



Description: **StationID** (in this example, ECO66E09)

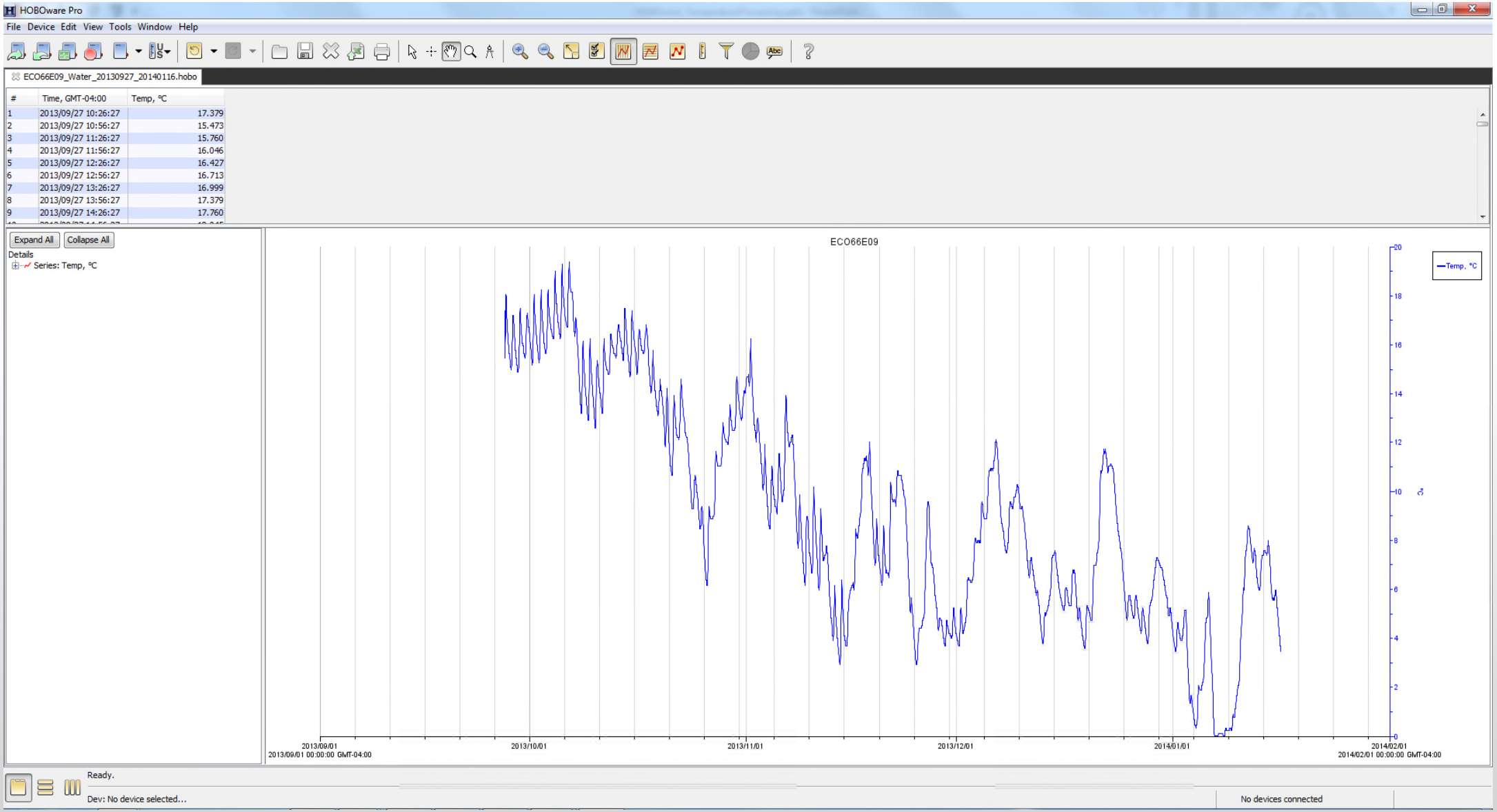
Temperature units °C

Click '**None**' (otherwise you'll get unwanted 'logged' entries in the .csv file that you'll need to delete later)

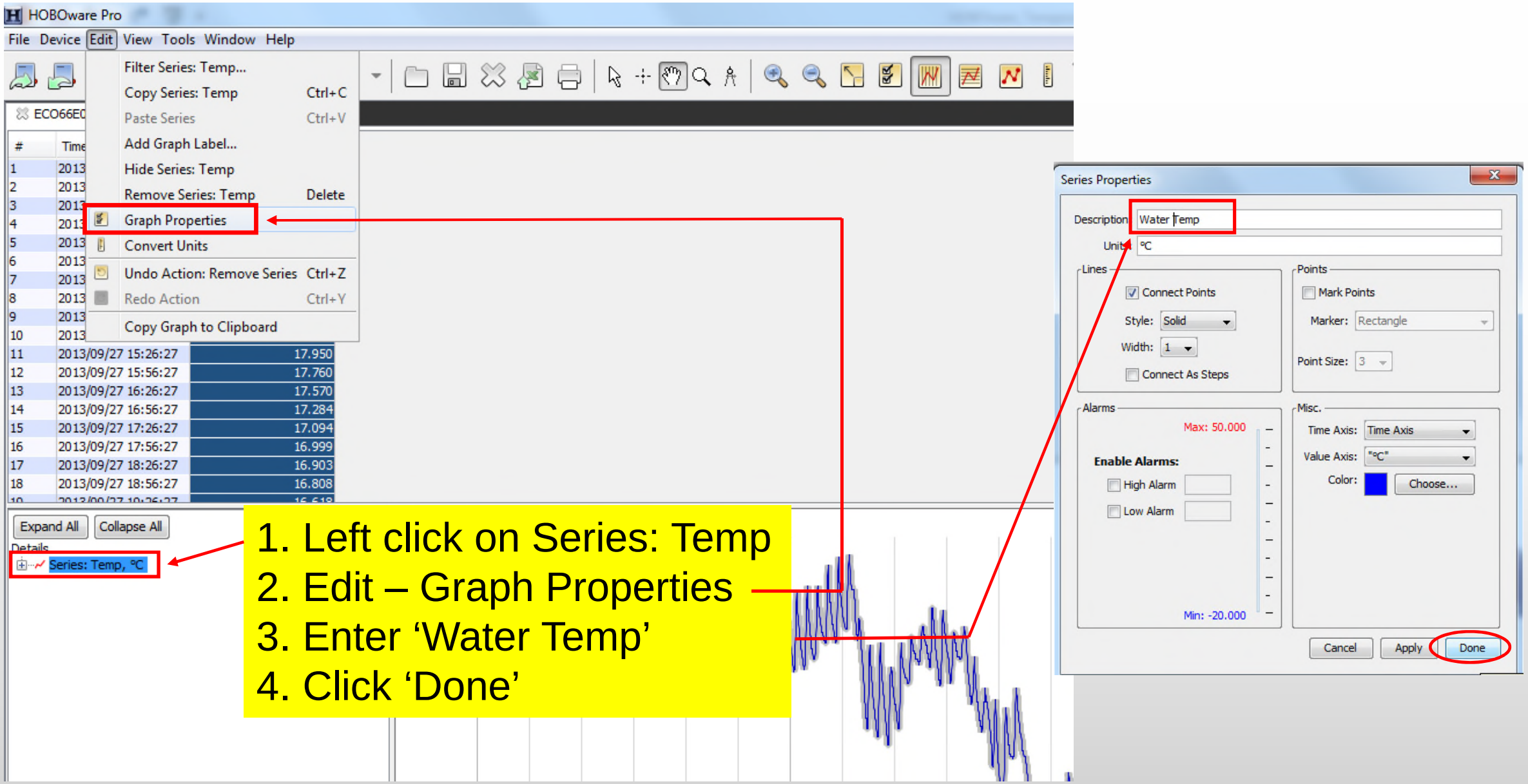
If the time zone for the site is incorrect, you can change that here (when you open the file, it goes to the default, which is the time zone of the computer that launched the sensor)

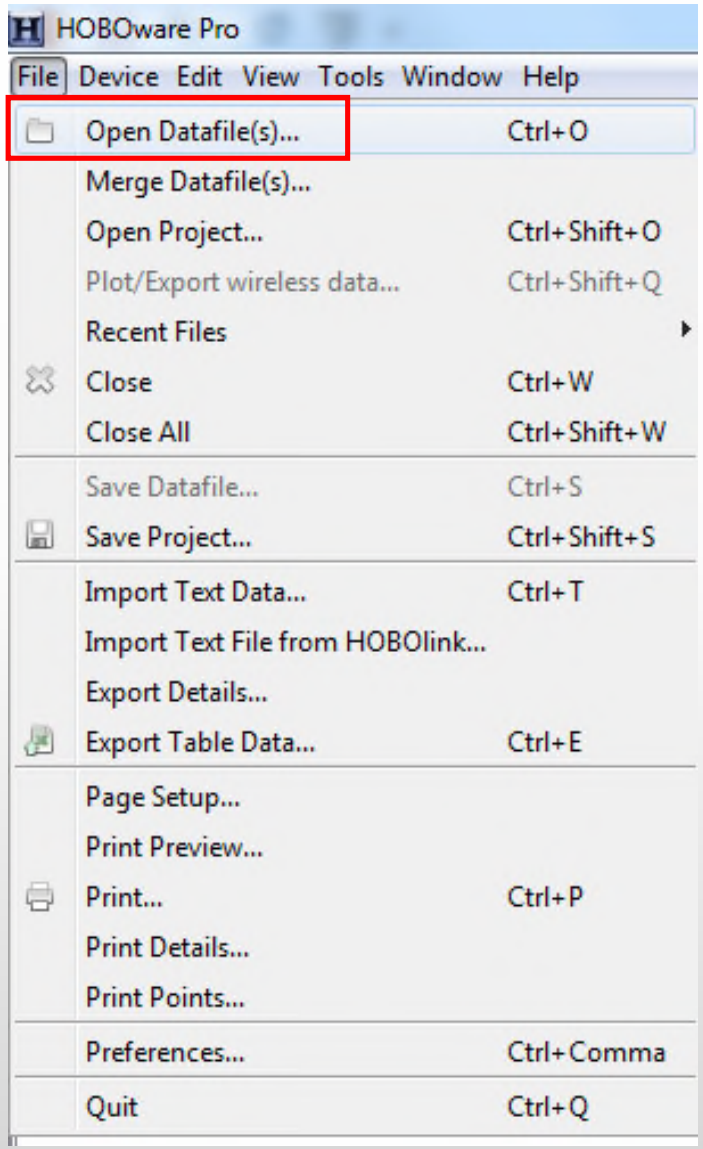
Click 'Plot'

A time series plot will then appear



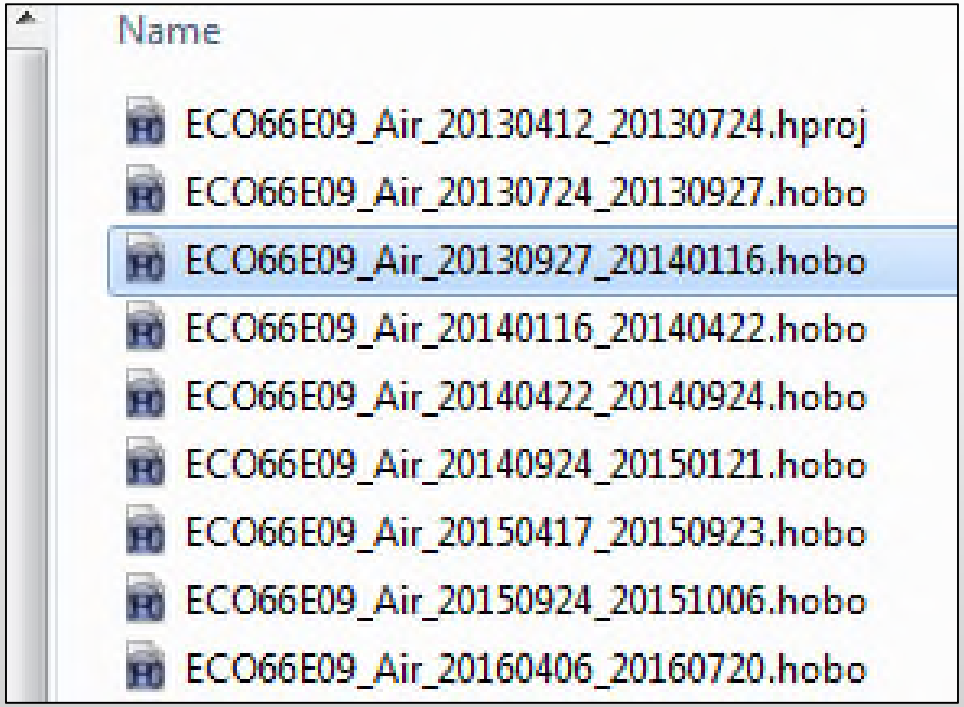
Change the Temp series name to ‘Water Temp’



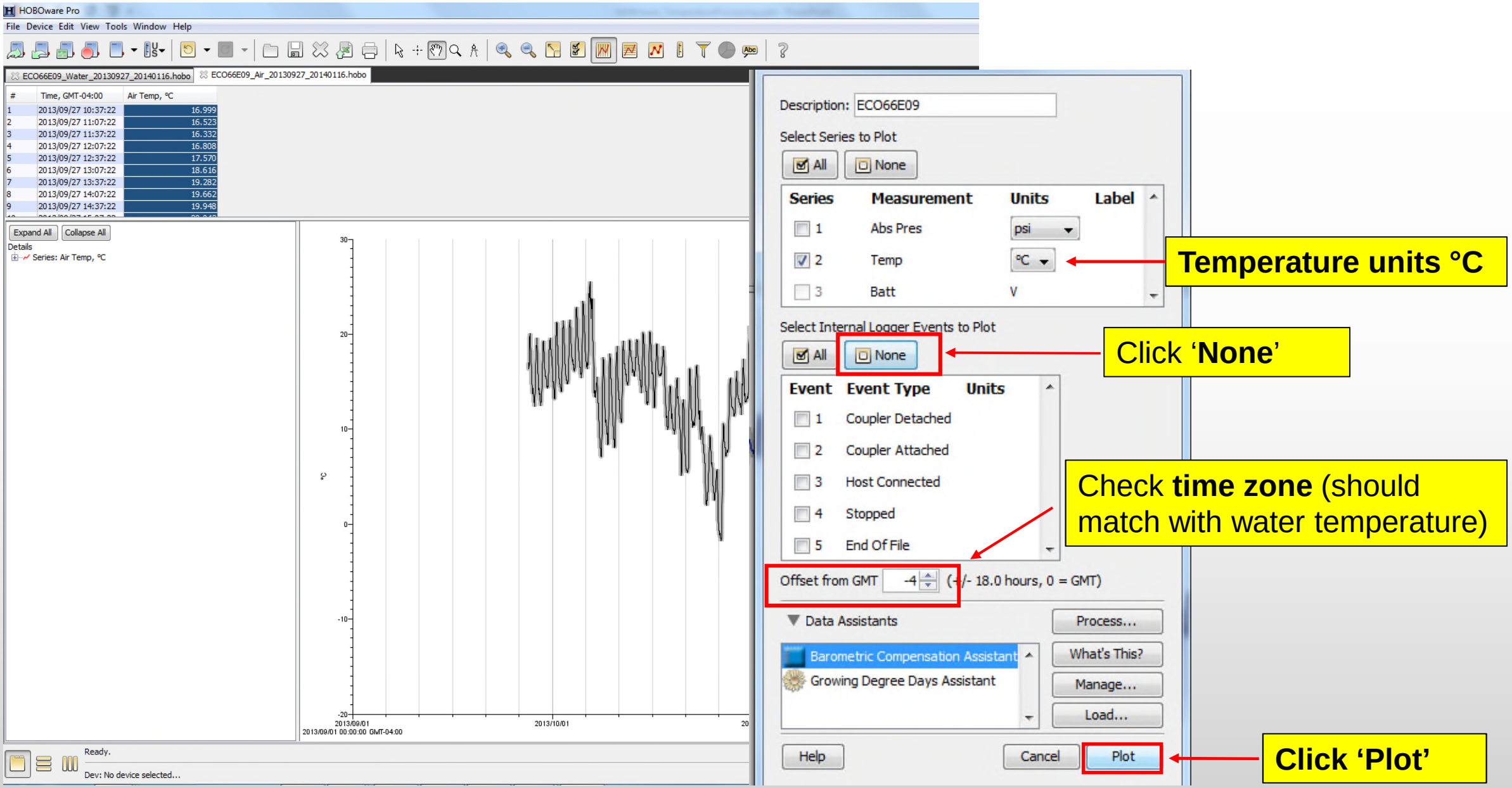


Now bring in the air temperature data.

While keeping the water sensor file open in HOBOware, **open the air sensor file (File – Open Datafile)**.



Air sensor file – Plot Setup



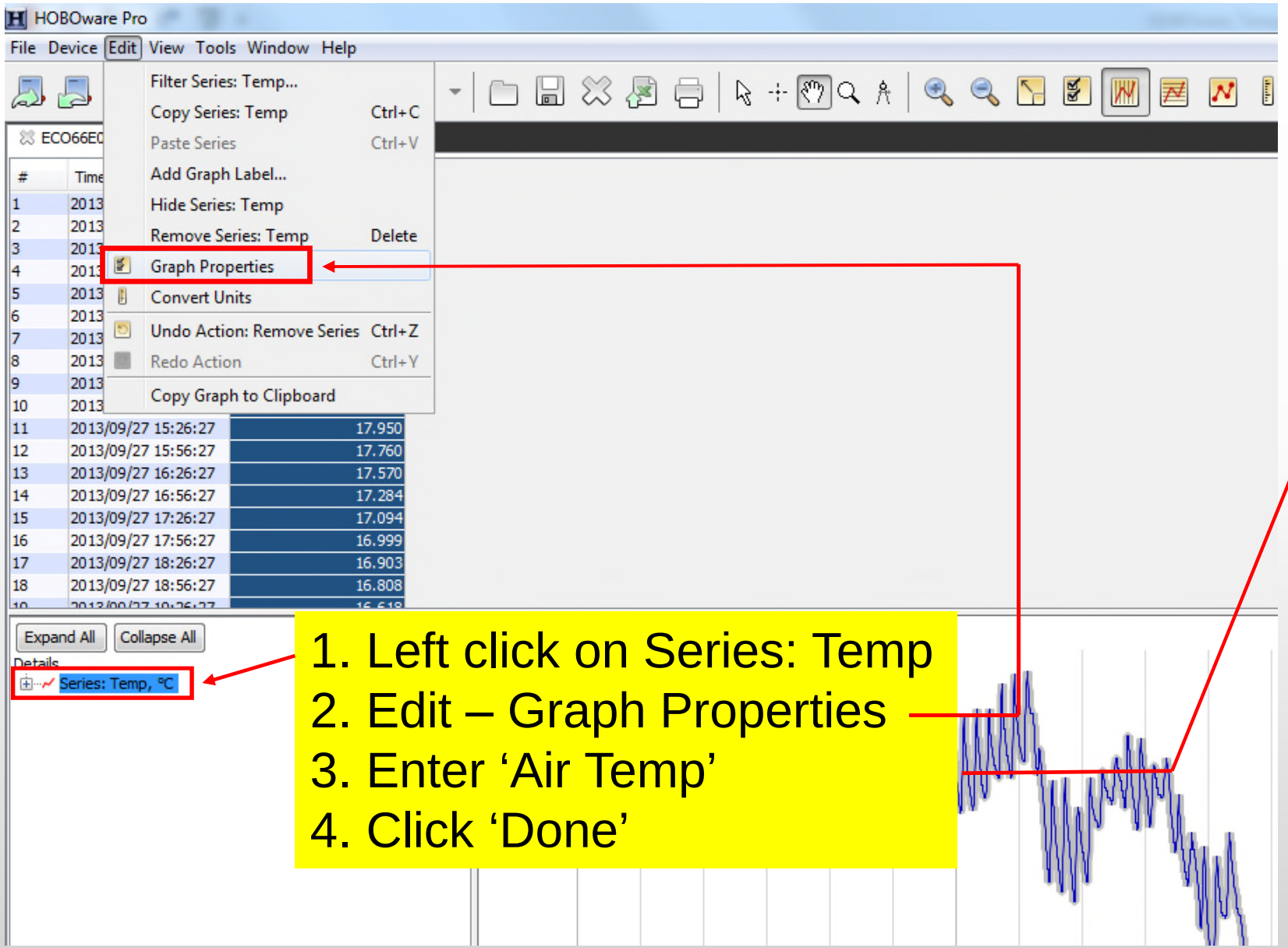
Temperature units °C

Click '**None**'

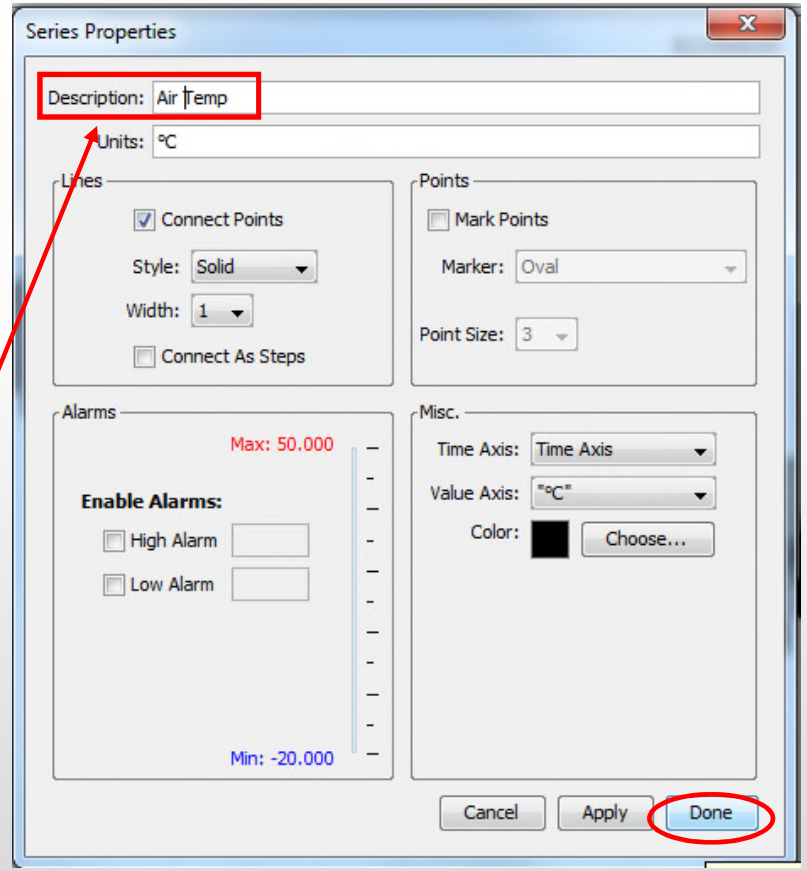
Check **time zone** (should match with water temperature)

Click 'Plot'

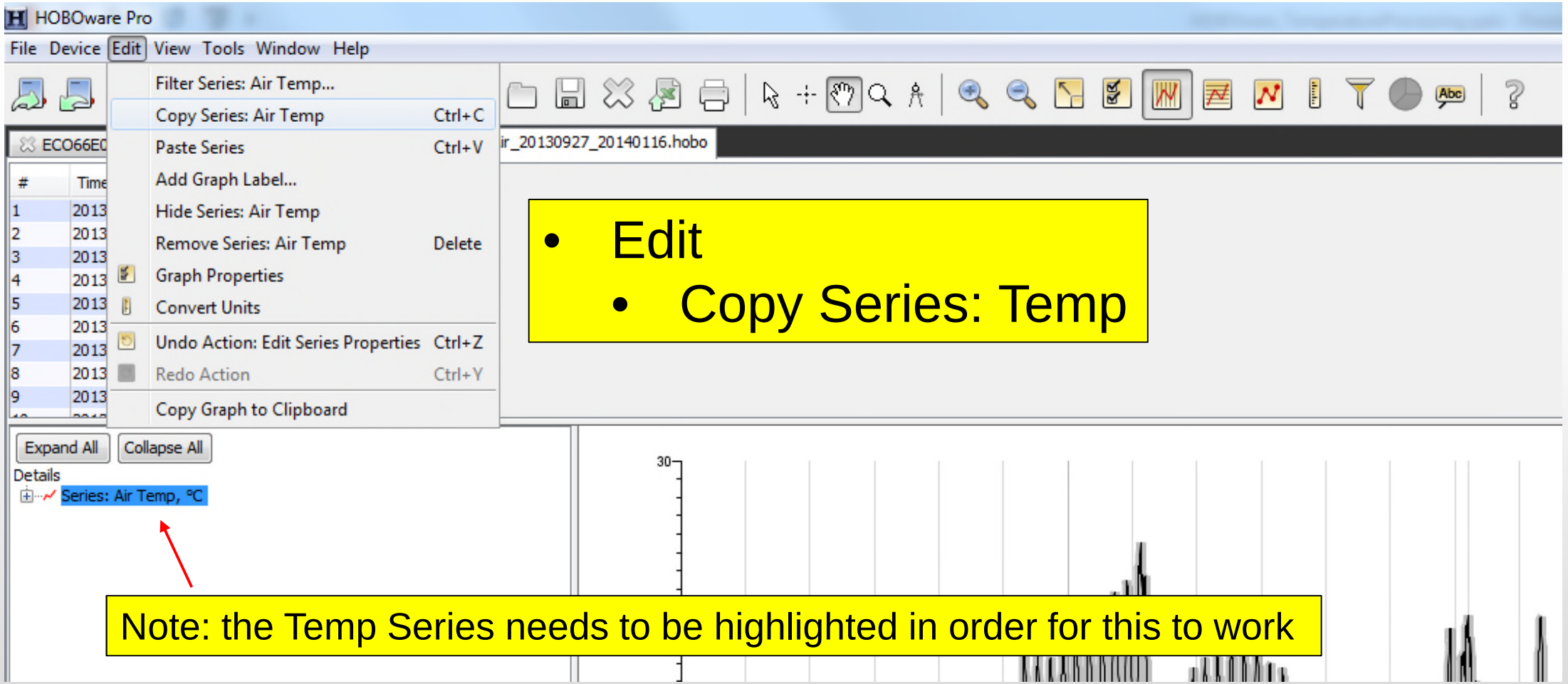
Change the Temp series name to ‘Air Temp’



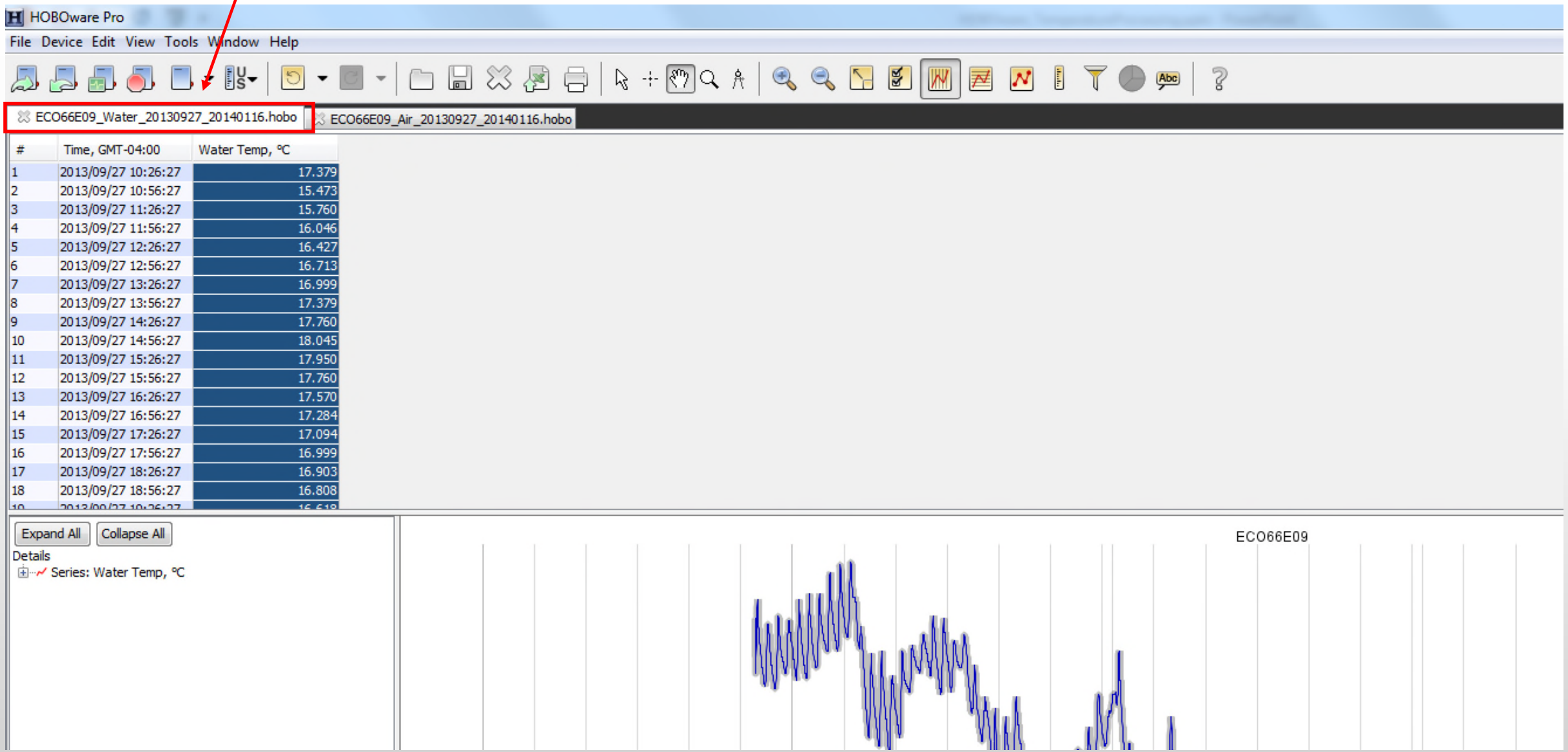
1. Left click on Series: Temp
2. Edit – Graph Properties
3. Enter ‘Air Temp’
4. Click ‘Done’



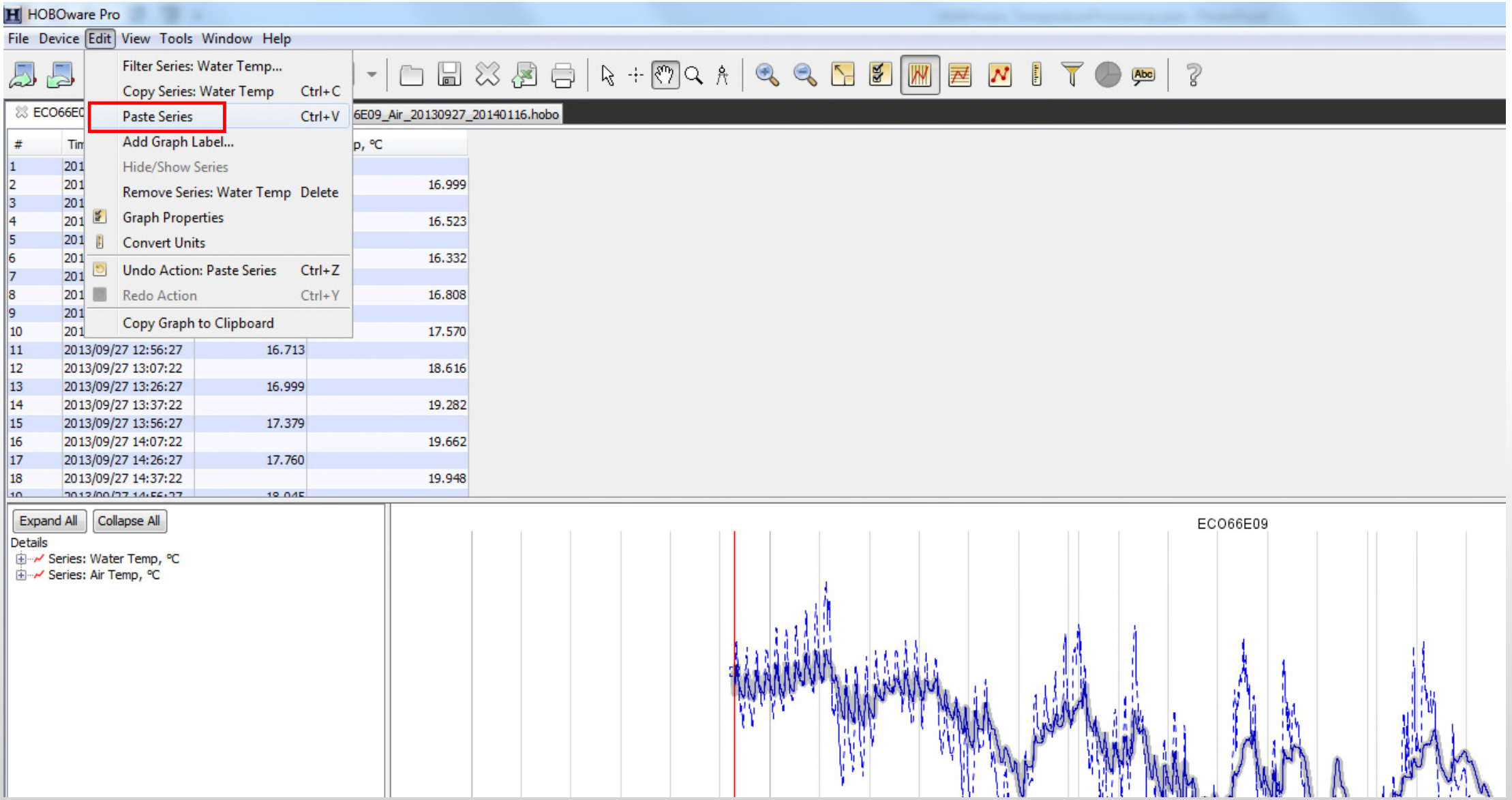
Copy the air temperature series



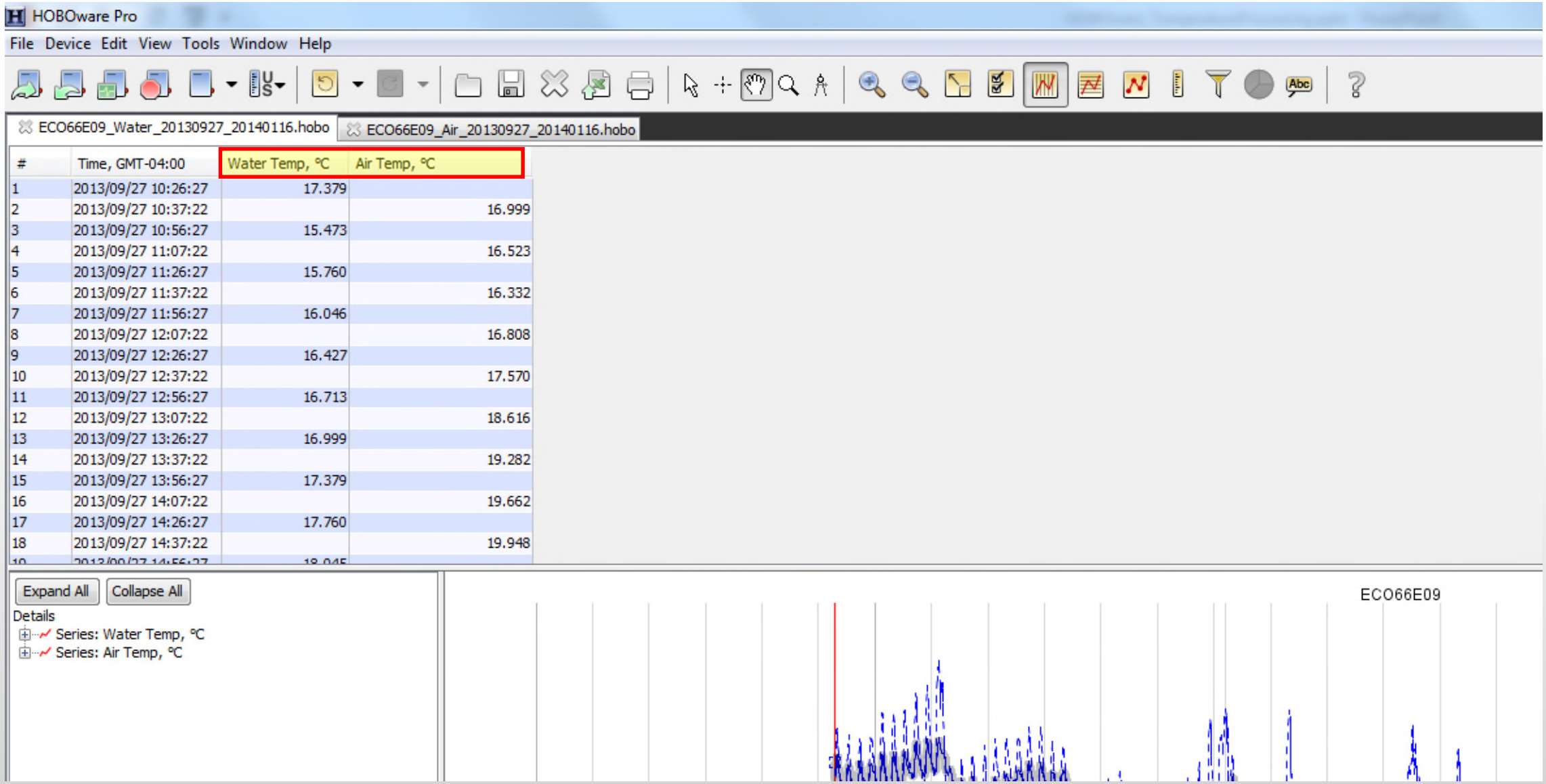
While keeping the air sensor file open, **reopen the water sensor file**



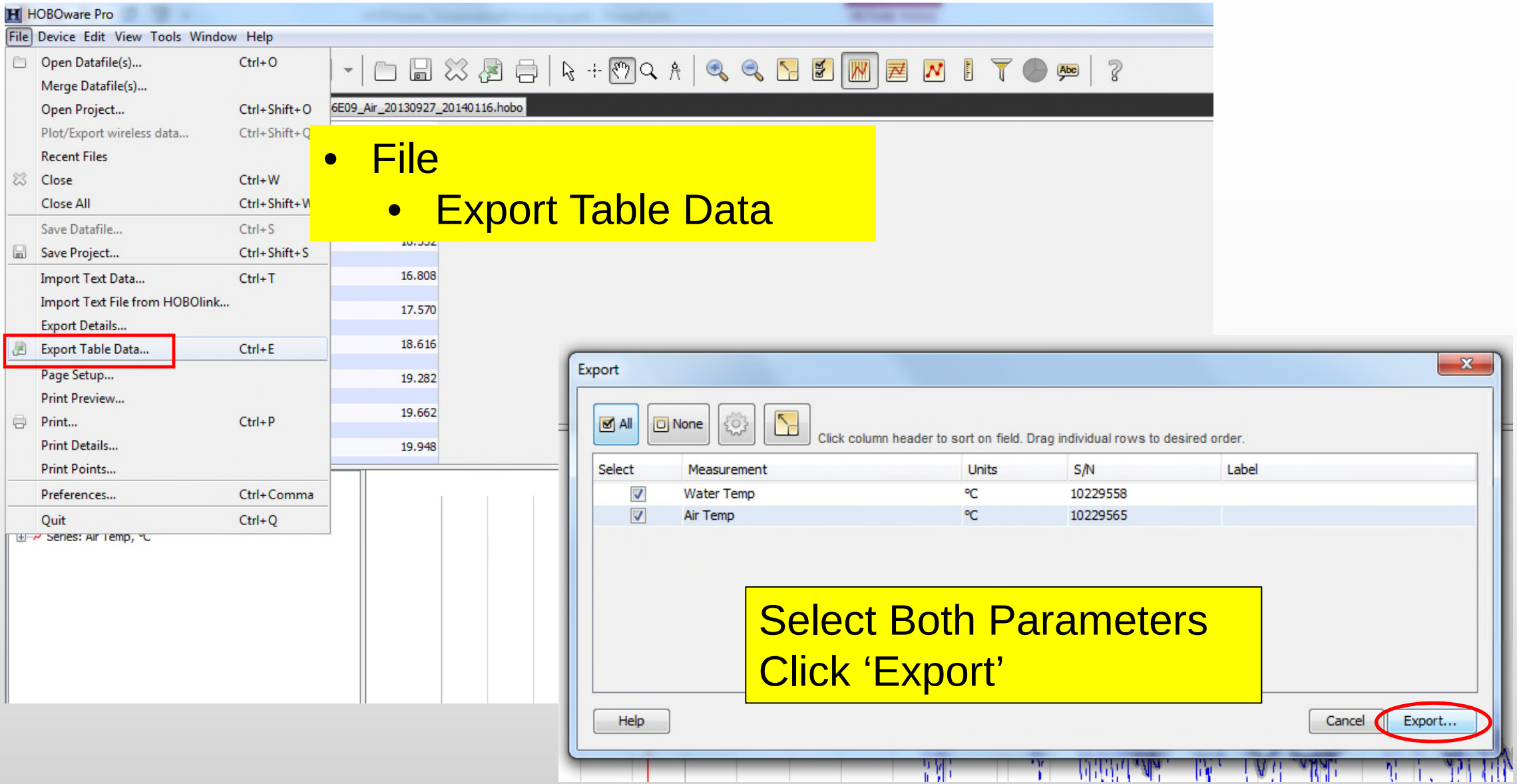
Paste the air temperature series into the water sensor file



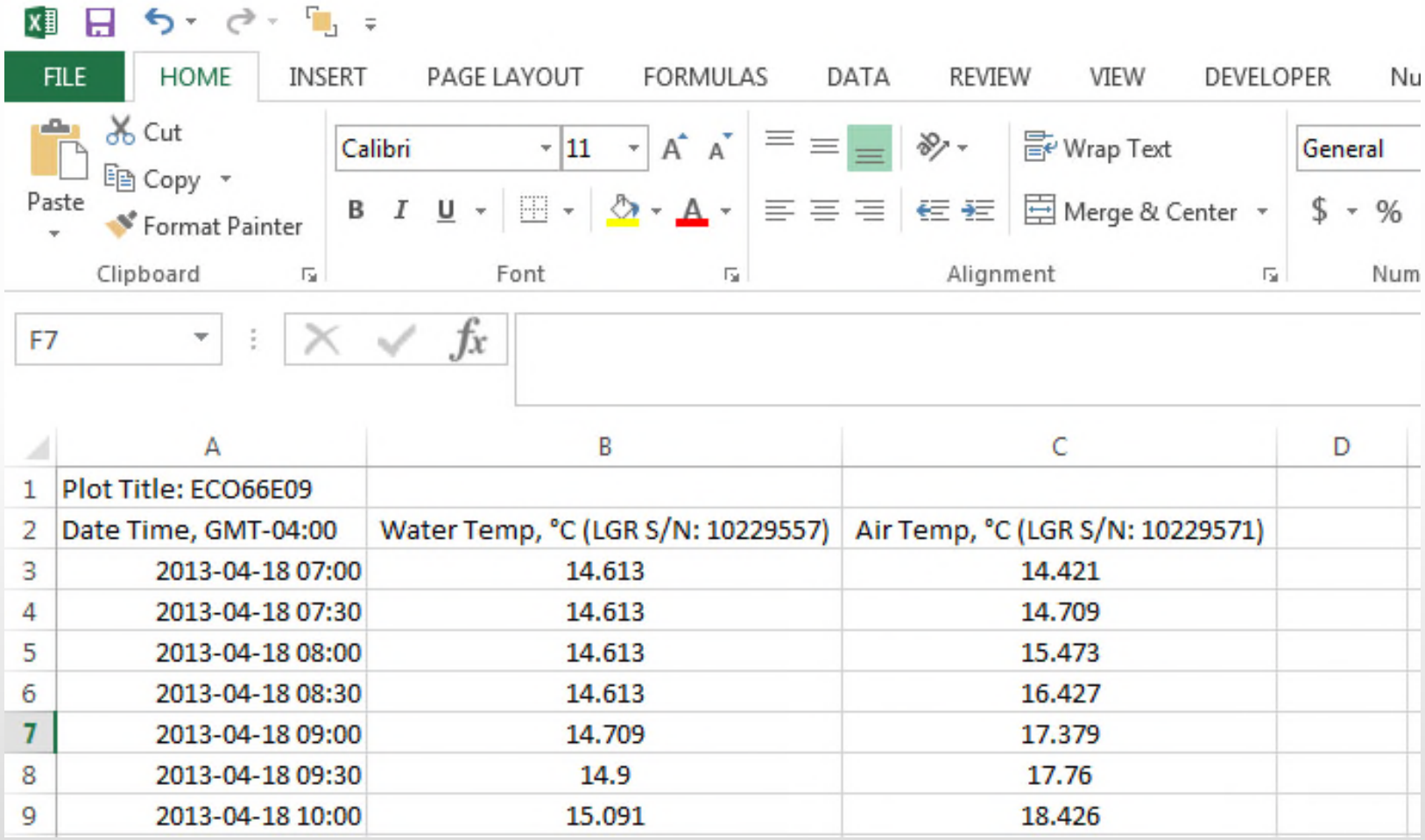
Both air + water temperature data are now in one file, ready for export!



Export the .csv file



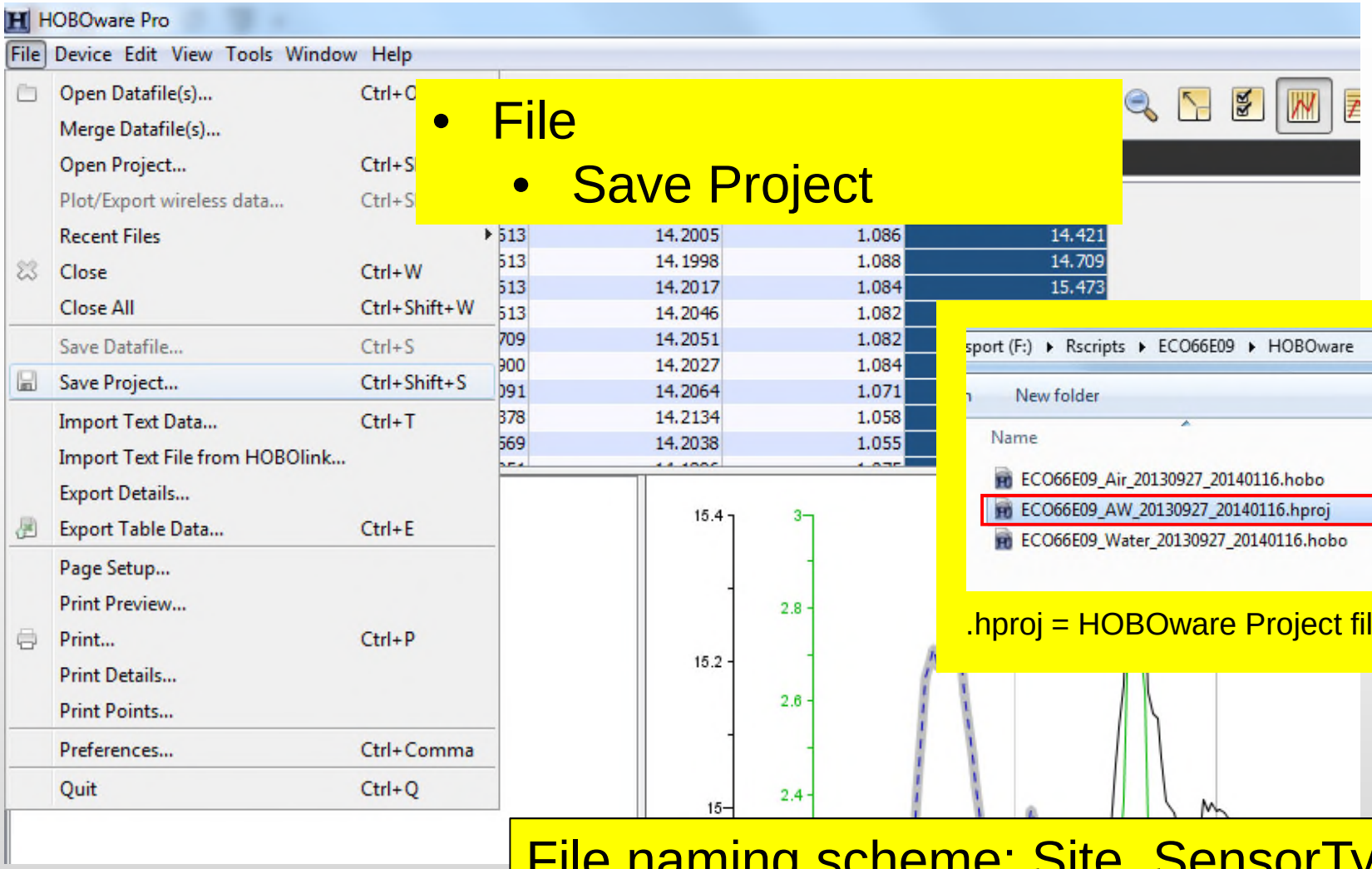
Save the .csv file in the appropriate site folder.
If you followed these instructions, the file should look like this.



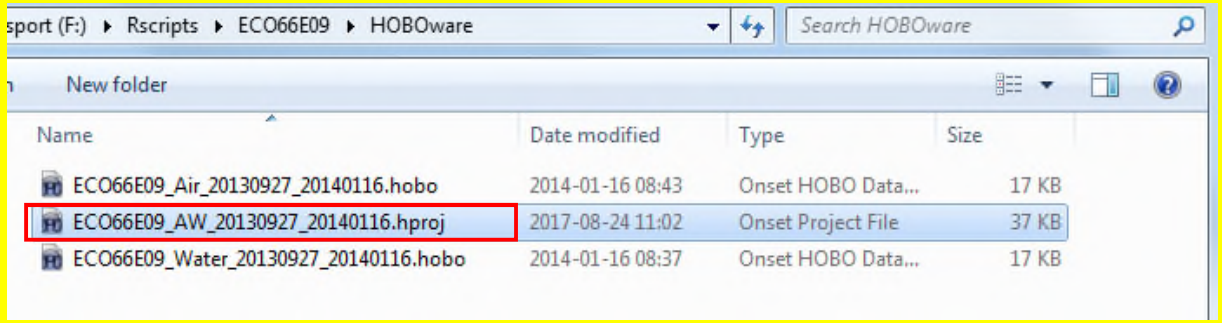
	A	B	C	D
1	Plot Title: ECO66E09			
2	Date Time, GMT-04:00	Water Temp, °C (LGR S/N: 10229557)	Air Temp, °C (LGR S/N: 10229571)	
3	2013-04-18 07:00	14.613	14.421	
4	2013-04-18 07:30	14.613	14.709	
5	2013-04-18 08:00	14.613	15.473	
6	2013-04-18 08:30	14.613	16.427	
7	2013-04-18 09:00	14.709	17.379	
8	2013-04-18 09:30	14.9	17.76	
9	2013-04-18 10:00	15.091	18.426	

For instructions on how to format the file for the ContDataQC R package, see the ‘Formatting_ContDataQCR’ file.

Before you close HOBOware, save the file with the combined air and water sensor data as a HOBO Project File.



- File
  - Save Project

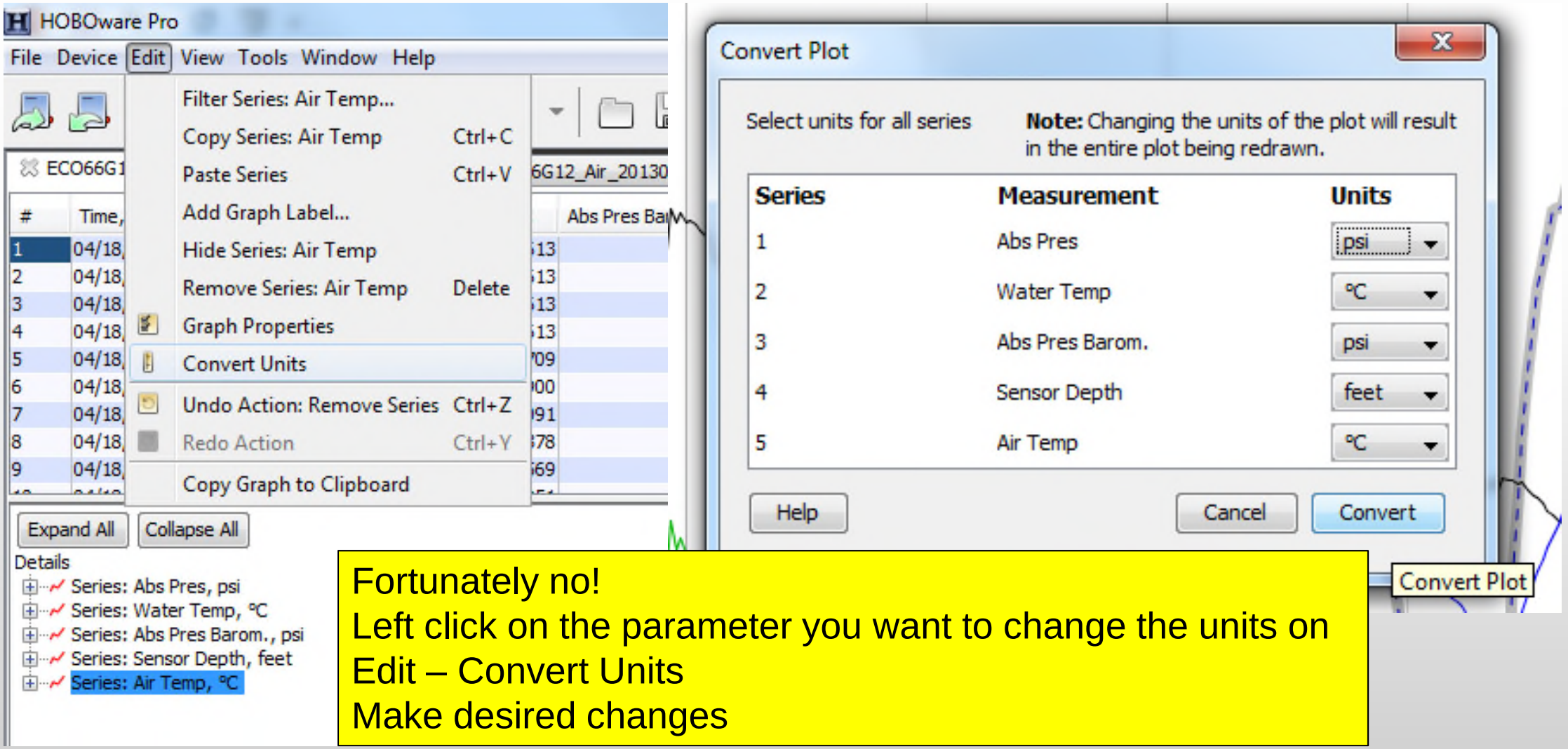


.hproj = HOBOware Project files; retain the original HOBO Data files too!

File naming scheme: Site_SensorType_StartDate_EndDate
Example – ECO66E09_AW_20130927_20140116

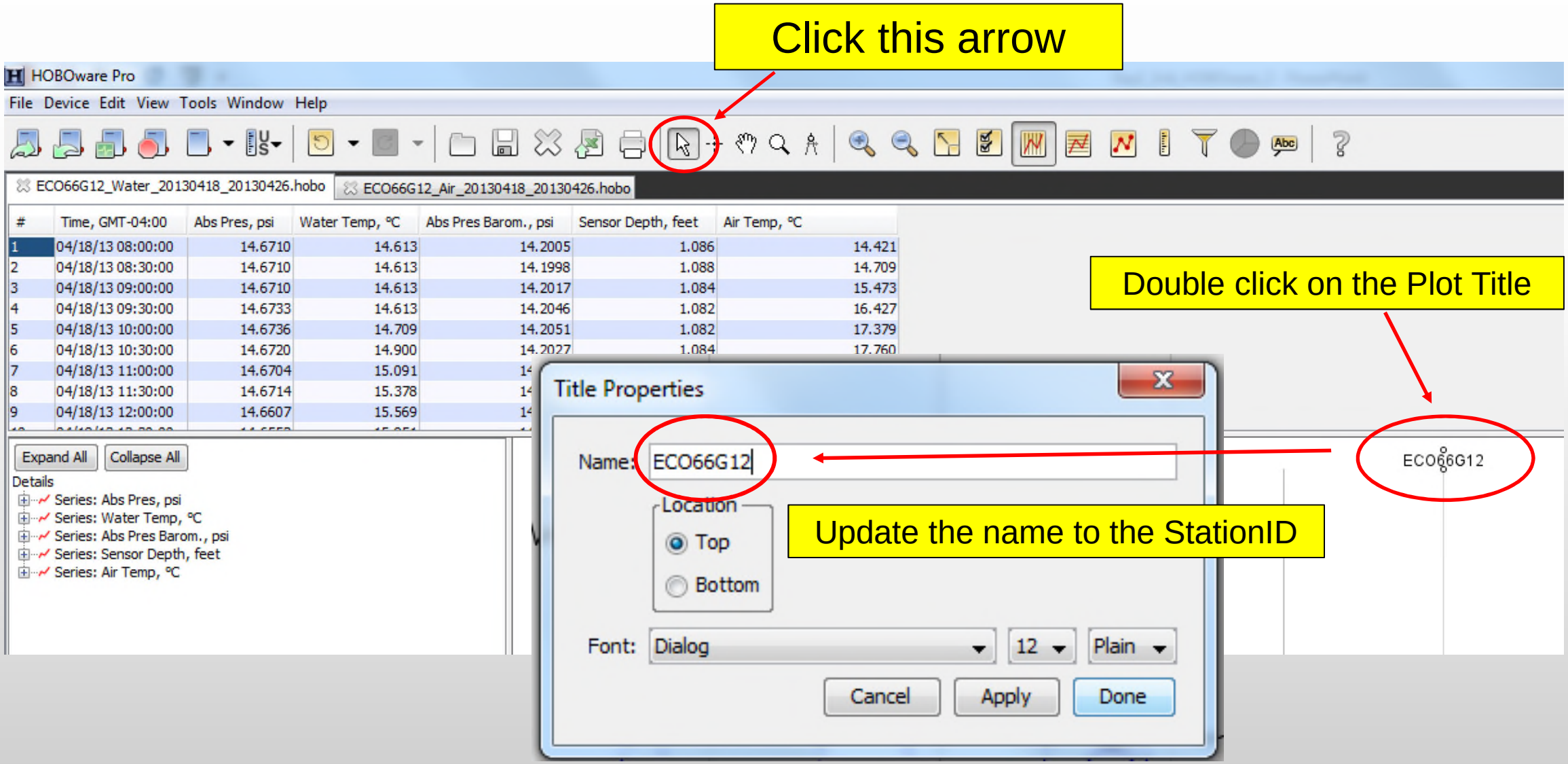
Extra tips

What if you forget to convert temperature to °C during the initial upload? Do you have to go back and do this all over again?



Fortunately no!
Left click on the parameter you want to change the units on
Edit – Convert Units
Make desired changes

What if I forgot to remove sensor type (air/water) from the Plot Title? (e.g., ‘ECO66G12_Water’ instead of ‘ECO66G12’)
You can change it by doing this…



Acknowledgements

Development of these instructional materials was funded by EPA ORD/NCEA (contact: Britta Bierwagen - Bierwagen.Britta@epa.gov).

Tetra Tech developed the materials with assistance from David Gibbs (EPA ORISE fellow: gibbs.david@epa.gov), Paul Gannett (Onset: Paul_Gannett@onsetcomp.com), Michelle Craddock (MA RIFLS), Nick Murray (WV DEP) and other RMN partners.

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Additional materials are available on the RMN Sharepoint site and the Tetra Tech FTP site.