Episode 56PM January 23, 2024. Raw data from CSV Downloads from up to 40 monitors of 3 days of data from PurpleAir monitors, up to 40 monitor RAWSEP Excel Template Auto-calculations to get % above NAAQS in a 3 day period. 25 slides. Slide 1)This is the raw data downloaded for 20 to 40 monitors, saved as a CSV file.
Slide 2) 1) Look at raw data for up to 20 to 40 monitors saved as a CSV file. 2) Delete the raw data average column (you will be auto-calculating each average for 20 monitors individually later). 3) Delete column for monitor B for each monitor so you will be left with only monitor A for every monitor location, since you don't need to analyze two readings (A and B) for one monitor.
Slide 3)This is the RAWSEP Excel Template where the data will be auto-calculated. This is for 3 days between January 20 and January 23, 2024. The CSV data is copied from the CSV 18 monitor File's A1 to S434 and is pasted into A1 of the RAWSEP Excel Template.
Slide 4) Copy the raw data from the CSV file. When closing the CSV file choose Don't Save because you may want the raw data Including monitor B data in the future.
Slide 5) If you paste 18 monitors' data into A1 the data will take up cells A1 to S434 Allow two columns between the raw data and the space in the Template where you want to autocalculate. The autocalculate area will then be W1 to AP434 Do not touch or type in the autocalculate area. Do not disturb the formulas in the autocalculate area.
Slide 6) There were 18 monitors raw data pasted into the template in A1:S434 and the autocalculate area with 2 columns between is V1:AM434 for the auto-calculation correlating PurpleAir monitors to EPA regulatory monitors, which is the simple mathematical formula used by the Wisconsin Department of Revenue on AirNow Maps of Smoke and Fire for Wisconsin (PA x 0.514)+1.8304 you can see in the Formula Box that the formula for V2 is =IF(B2<>"",(B2*0.514)+1.8304,"") (the IF statement allows cells that are blank in the raw data to remain blank in the autocalculate area)
Slide 7) In Cell V435 the calculation =Sum(V2:V433) is made for the first column. (The calculation would be =Sum(W2:W433 for the 2nd column, and on and on to column AM433)
Slide 8) In Cell V436 the calculation =V435/432 is made for the first column. (The calculation would be =W435/432 for the 2nd column, and on and on to column AM433)
Slide 9) 1)In Cell V437 the calculation =COUNTBLANK(V2:V433) is made for the first column. (The calculation would be =COUNTBLANK(W2:W433) for the 2nd column, and on and on to column AM433) 2)COUNTBLANK counted the cells in a column that are blank, which happens when there is a power outage or the owner of a monitor turns it off for that 10 minute period.
Slide 10) In cell V438 the auto-calculation is made =432-V437 so that the average is calculated by dividing the sum of all 10 minute periods only by the number of periods when the monitor was turned on.
Slide 11) The auto-calculation in cell V439 is =COUNTIF(V$2-V434,">=12") This counts the number of 10 minute periods when the EPA number of PM2.5 micrograms per cubic meter (already correlated to an EPA regulatory number) is equal to or above 12 micrograms per cubic meter (12 ug/m3 is the EPA limit for annual average "safe" PM2.5 according to The Environmental Protection Agency National Ambient Air Quality Standards (EPA NAAQS)
Slide 12) The auto-calculation in cell V440 is =COUNTIF(V$2-V434,">=25") This counts the number of 10 minute periods when the EPA number of PM2.5 micrograms per cubic meter (already correlated to an EPA regulatory number) is equal to or above 25 micrograms per cubic meter (12 ug/m3 is the EPA limit for annual average "safe" PM2.5 according to the Environmental Protection Agency National Ambient Air Quality Standards (EPA NAAQS))
Slide 13) The auto-calculation in cell V441 is =COUNTIF(V$2-V434,">=35") This counts the number of 10 minute periods when the EPA number of PM2.5 micrograms per cubic meter (already correlated to an EPA regulatory number) is equal to or above 35 micrograms per cubic meter (35 ug/m3 is the EPA limit for 24 hour average "safe" PM2.5 according to the Environmental Protection Agency National Ambient Air Quality Standards (EPA NAAQS))
Slide 14) The auto-calculation in cell V442 is =COUNTIF(V$2-V434,">=45") This counts the number of 10 minute periods when the EPA number of PM2.5 micrograms per cubic meter (already correlated to an EPA regulatory number) is equal to or above 45 micrograms per cubic meter
Slide 15) The auto-calculation in cell V443 is =COUNTIF(V$2-V434,">=55") This counts the number of 10 minute periods when the EPA number of PM2.5 micrograms per cubic meter (already correlated to an EPA regulatory number) is equal to or above 55 micrograms per cubic meter
Slide 16) The auto-calculation in cell V444 is =COUNTIF(V$2-V434,">=65") This counts the number of 10 minute periods when the EPA number of PM2.5 micrograms per cubic meter (already correlated to an EPA regulatory number) is equal to or above 65 micrograms per cubic meter

Slide 17) The auto-calculation in cell V445 is =COUNTIF(V$2-V434,”>=75”) This counts the number of 10 minute periods when the EPA number of PM2.5 micrograms per cubic meter (already correlated to an EPA regulatory number) is equal to or above 75 micrograms per cubic meter
Slide 18) The auto-calculation in cell V446 is =V435/(432-V437) This finds the average PM2.5 in a 3 day period.
Slide 19) The auto-calculation in cell V447 is =V$439/V$438 This finds the % of time in a 3 day period when PM2.5 was at or above 12 micrograms per cubic meter.
Slide 20) The auto-calculation in cell V448 is =V$440/V$438 This finds the % of time in a 3 day period when PM2.5 was at or above 25 micrograms per cubic meter.
Slide 21) The auto-calculation in cell V449 is =V$441/V$438 This finds the % of time in a 3 day period when PM2.5 was at or above 35 micrograms per cubic meter.
Slide 22) The auto-calculation in cell V450 is =V$442/V$438 This finds the % of time in a 3 day period when PM2.5 was at or above 45 micrograms per cubic meter.
Slide 23) The auto-calculation in cell V451 is =V$443/V$438 This finds the % of time in a 3 day period when PM2.5 was at or above 55 micrograms per cubic meter.
Slide 24) The auto-calculation in cell V452 is =V$444/V$438 This finds the % of time in a 3 day period when PM2.5 was at or above 65 micrograms per cubic meter.
Slide 25) The auto-calculation in cell V453 is =V$445/V$438 This finds the % of time in a 3 day period when PM2.5 was at or above 75 micrograms per cubic meter.