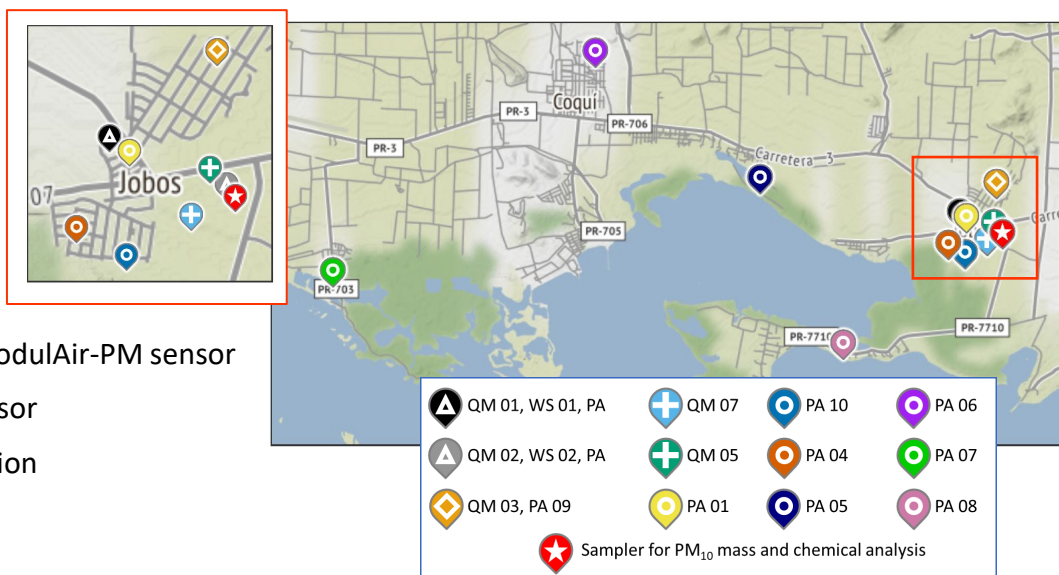


Particulate Matter Research Study in the Guayama and Salinas area of Puerto Rico: Research Project Updates for January, 2024

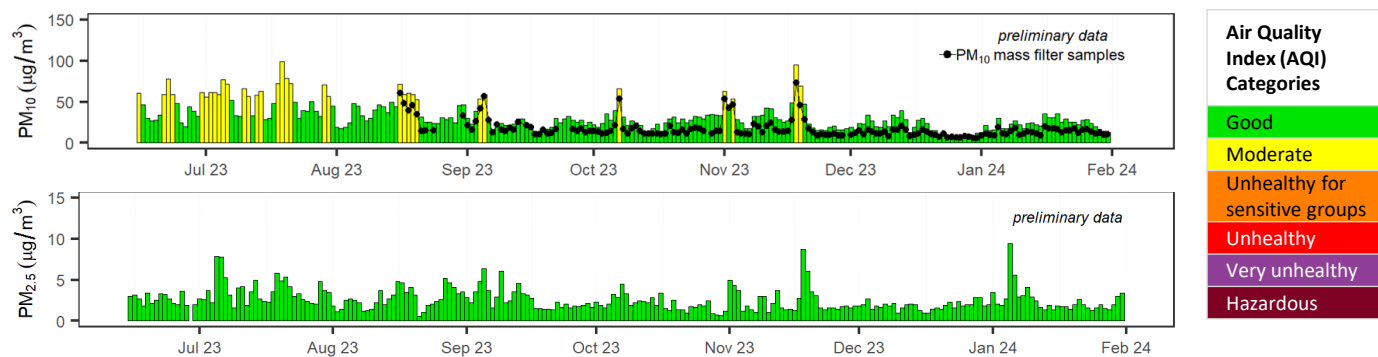
What is this study about and what does this summary include?

- Community members shared concerns with EPA about particulate matter (PM) in their community and whether the regulatory air monitoring site represents the community's exposure.
- With community member input and technical support from the Puerto Rico Department of Natural and Environmental Resources (DNER), EPA scientists installed 15 air sensors measuring $PM_{2.5}$ and PM_{10} and sited a sampler to collect air filters for laboratory analysis of PM_{10} mass and chemical components. The combination of sensors, sample analysis, and weather data will provide information on PM occurrence in the area. For information about PM_{10} and $PM_{2.5}$, see: <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM>
- After the field study concludes in the winter and laboratory analysis of samples is complete, a final summary will be developed by the study team. This monthly newsletter includes data available at the time of the summary. For the data shown here, initial quality checks have been conducted but the data are not final and further quality checks may occur.

Field Study Monitoring Sites



$PM_{2.5}$ and PM_{10} Daily Averages Across Sites – Full Study Timeline:



Note: The daily averages (barplots) include all data available at the time of the analysis from PA sensors for $PM_{2.5}$ and QM sensors for PM_{10} . The PM_{10} filter sample data (black markers) include all filters weighed in the lab thus far.

For questions about this research project, please reach out to EPA Region 2 contacts:
Gavin Lau (lau.gavin@epa.gov) and Sarah Pender (pender.sarah@epa.gov)

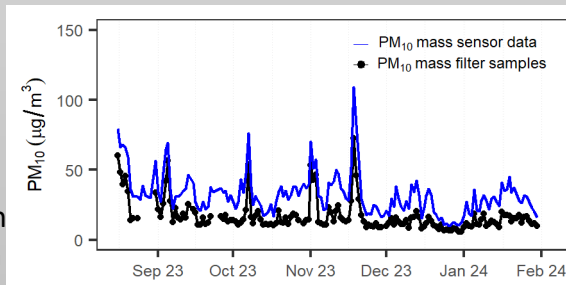


Particulate Matter Research Study in the Guayama and Salinas area of Puerto Rico: Research Project Updates for January, 2024

Field Study Updates:

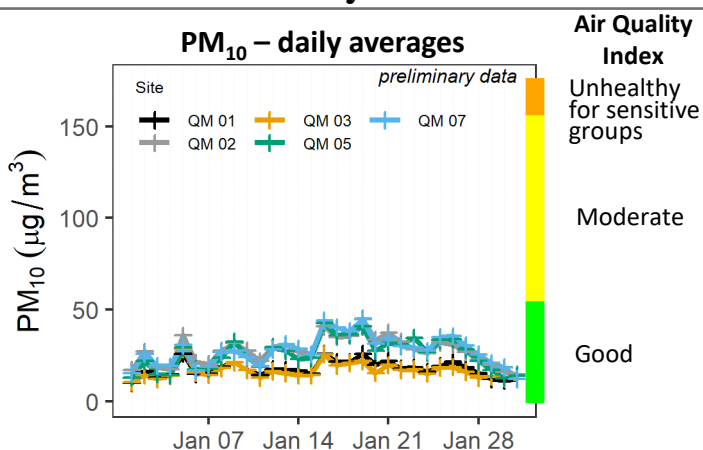
- From the time of installation through the end of January, EPA researchers collected **142** days of filter samples in the Guayama area, with sensor data collected for **230** days.
- The final step for the study involves placing the sensors side-by-side, to develop sensor corrections as needed to support the final data analysis (see Figure on the right as an example). This initiated in late February, when the research team visited each site, downloaded sensor data, and moved all the sensors to a central location to operate together for several weeks.

Comparison of sensor PM_{10} data with filter PM_{10} data

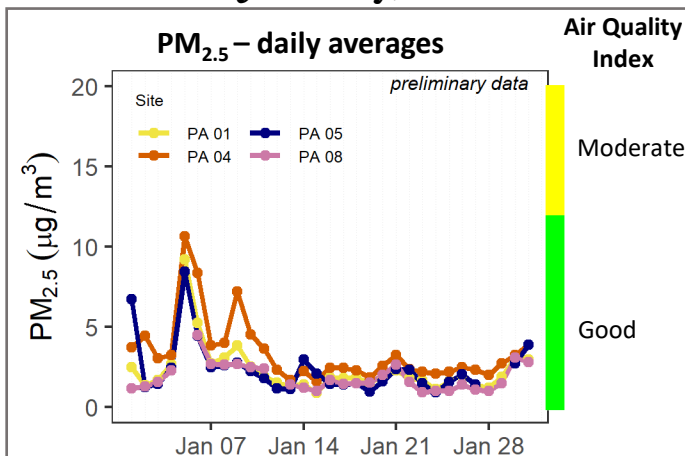


Concentrations go up and down similarly each day, but the QuantAQ sensor PM_{10} mass is always higher than what the filter measures.

Summary of data from online sites for January, 2024



Interpreting the data: Air quality for PM_{10} was **Good** across all sites in the community during January. The sites near school (QM02, QM05, and QM07) are slightly elevated from those in the center of Puente Jobos and in the surrounding neighborhoods.

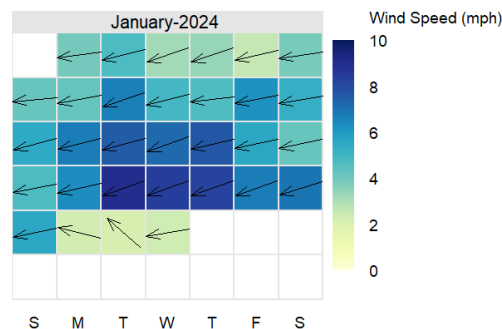


Interpreting the data: Air quality was **Good** at all sites across the community in January.

For more information about the Air Quality Index:

Daily average plots of $PM_{2.5}$ and PM_{10} show the Air Quality Index (AQI) on the righthand side of the graphs above. Lower AQI values indicate cleaner air quality, while higher values correspond to poorer air quality. More information on the AQI is available at <https://www.airnow.gov/aqi/aqi-basics/>.

Daily average wind speed (color) and wind direction (arrow)



Interpreting the data: Most days had light breezy winds from the east and northeast.



Any mention of trade names, products, or services does not imply an endorsement by the U.S. Government or the U.S. Environmental Protection Agency. The EPA does not endorse any commercial products, services, or enterprises.