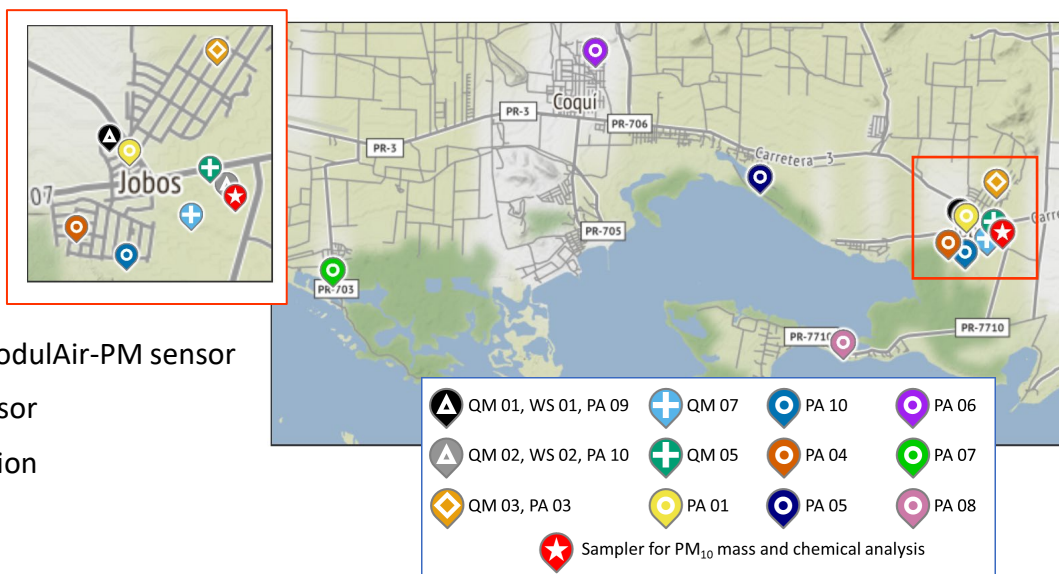


Particulate Matter Research Study in the Guayama and Salinas area of Puerto Rico: Research Project Updates for October, 2023

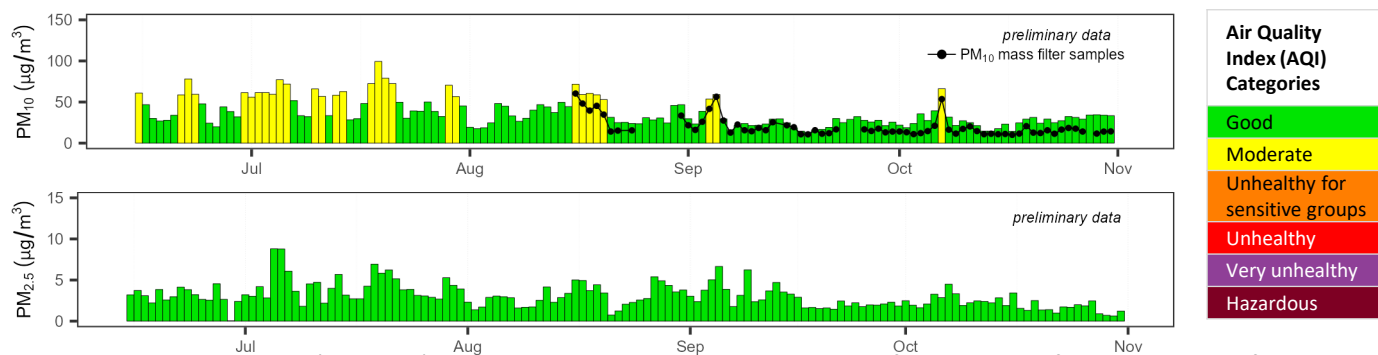
What is this study about and what does this summary include?

- 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)



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Field Study Updates:

- In October, the EPA research team visited the sites to download data and check on sensor function. All sensors were running and recording data to local memory, but some locations were not sharing data online due to poor WiFi connectivity.
- Two sensors at the PA 06 location in Coquí are unable to connect and continue to operate offline.
- The first batch of daily PM₁₀ samples were consistent with the daily average readings from the PM₁₀ sensor data measured at the school site (QM 02).

EPA and DNER staff checking on weather and PM sensors at the school (QM 02 & PA 10)

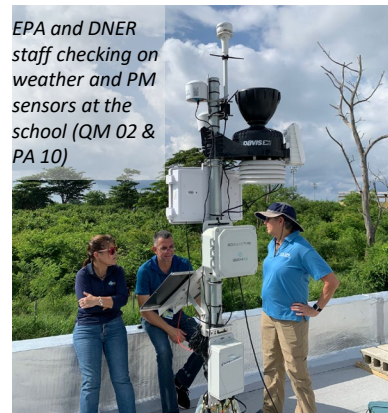
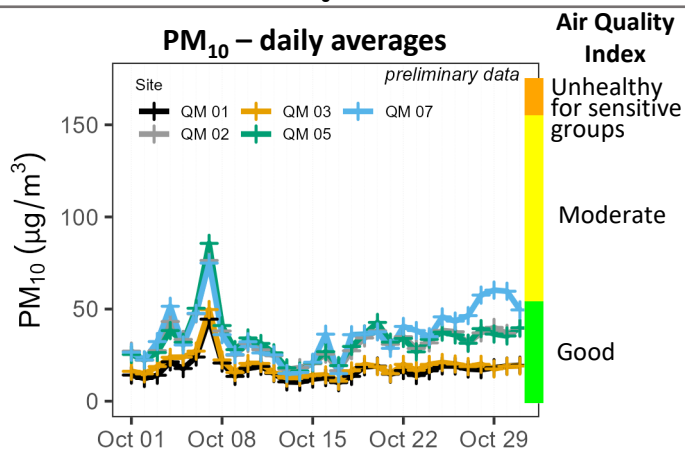


Photo credit: Gayle Hagler

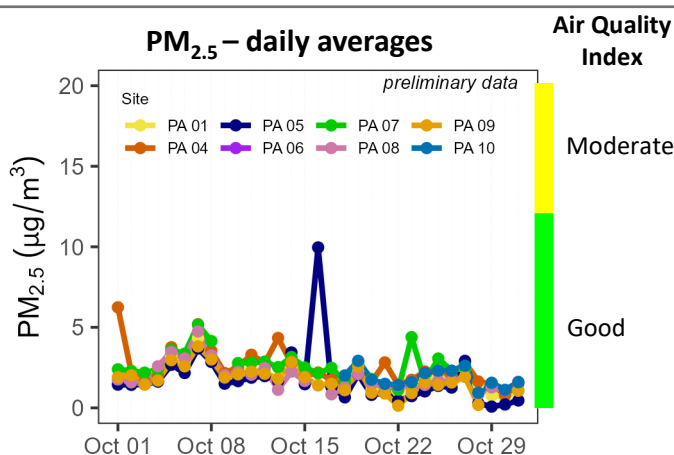
Summary of data from online sites for October, 2023



Interpreting the data: PM₁₀ trends were similar throughout the community. The replacement sensor QM07 and nearby sensors QM02 and QM05 reported higher values compared to other parts of the community. There were several days of **Moderate** air quality at these sites during October due to elevated PM₁₀, but most days were **Good**.

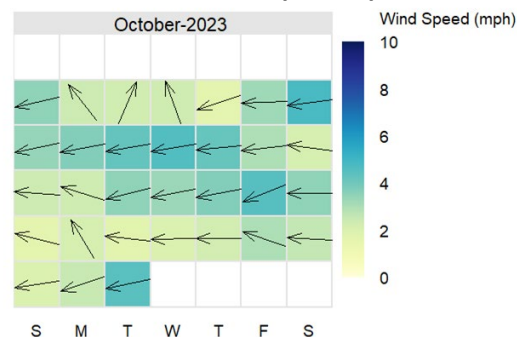
For more information about the Air Quality Index:

Daily average plots of PM_{2.5} and PM₁₀ 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/>.



Interpreting the data: PM_{2.5} was **Good** at all sites in October and similar across the community on most days.

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



Interpreting the data: Light winds from the east were most common during October.



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