Stockton Air Pollution Exposure Project (SAPEP)

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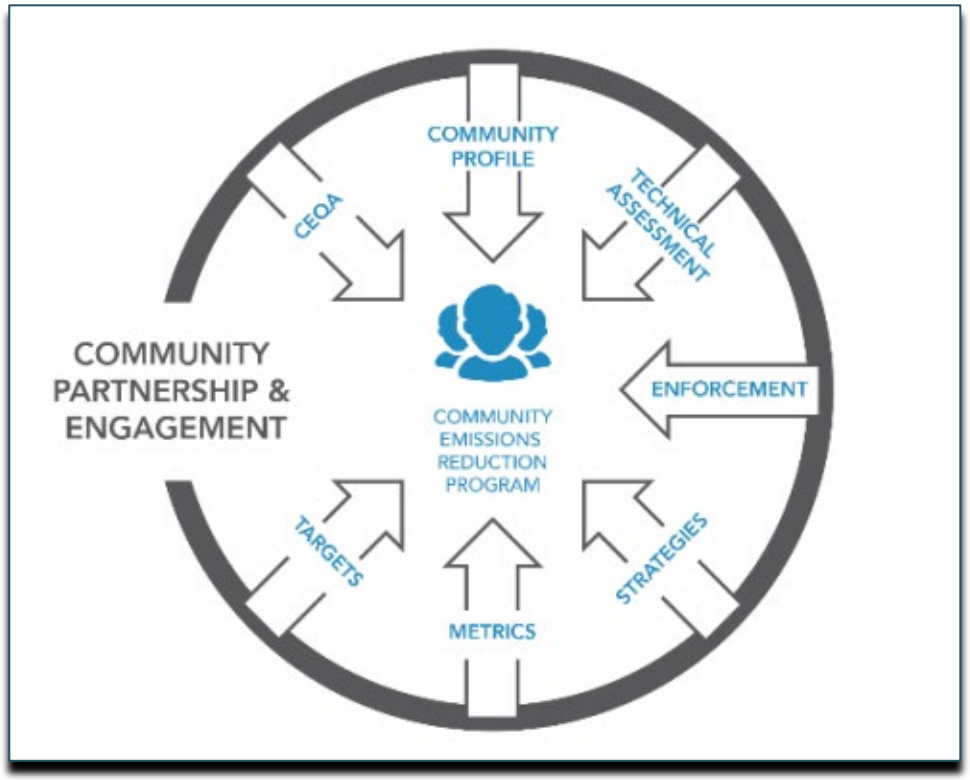
BIOMONITORING CALIFORNIA

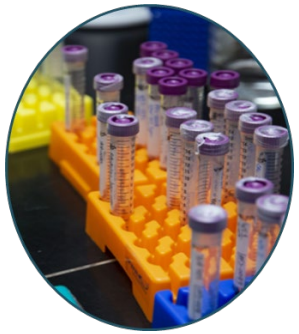
- Background
- Study overview
- Summary of results
- Take home messages
- Questions and discussion

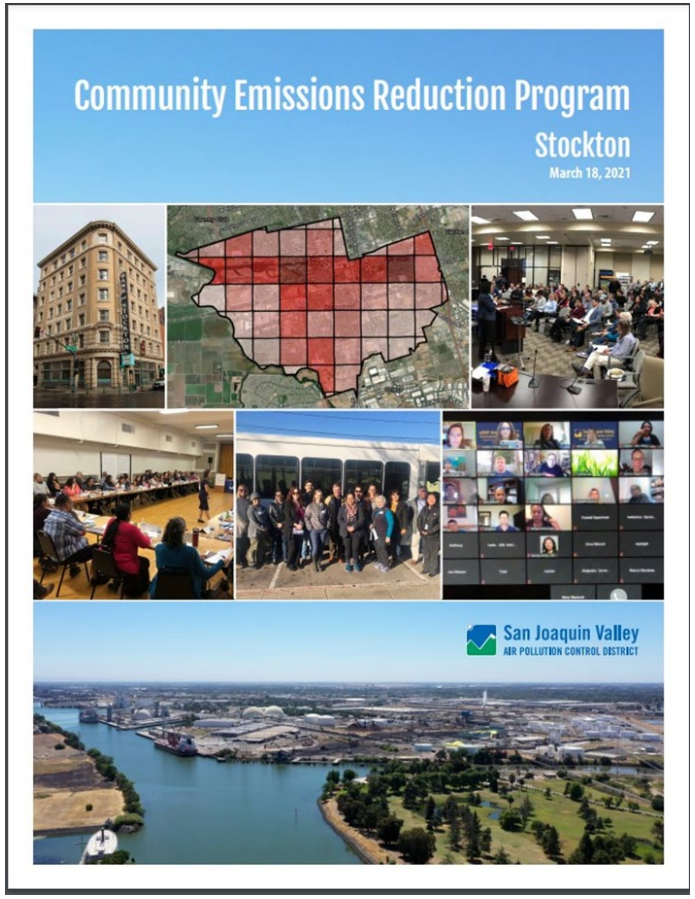
Assembly Bill 617 (AB 617); the Community Air Protection Program (CAPP)



- Aims to reduce exposures in communities disproportionately impacted by air pollution
- Requires state and local government to work with communities to develop and implement community air monitoring and emission reduction plans

Biomonitoring to Support CAPP

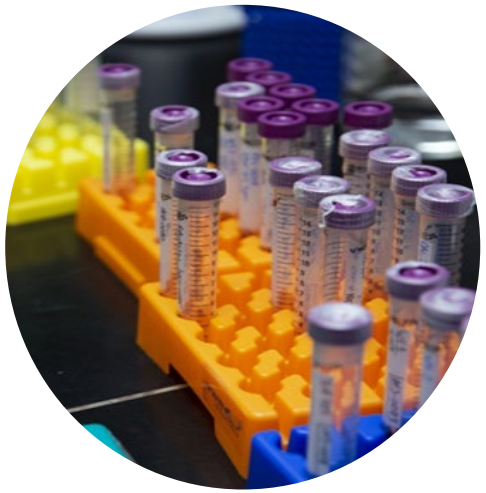




https://community.valleyair.org/media/5hrl3haf/final-stockton-cerp-no-appendix-with-cover.pdf

- Complement ongoing air monitoring
- Evaluate exposure and emission reduction strategies
- Increase understanding of exposures and potential health risks

What is Biomonitoring?



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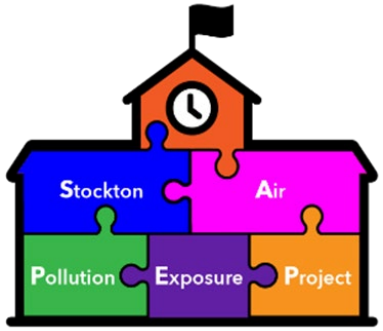
http://www.biomonitoring.ca.gov

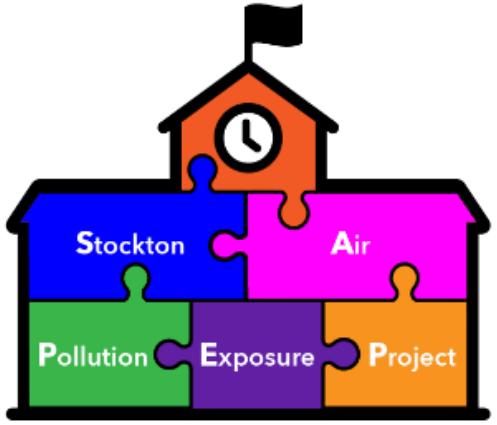


Stockton Air Pollution Exposure Project (SAPEP)

Learn more about air pollution exposures to schoolchildren in Stockton

Evaluate effectiveness of school air filtration at reducing children's air pollution exposures

Study Overview



- Enrolled students from All Saints Academy of Stockton
- Measured air pollutant levels inside and outside of the school

- Installed portable air cleaners in about half the classrooms of participating students
- Parents completed online questionnaires

- Collected children's urine before and after school
- Measured chemicals that show exposure to air pollution

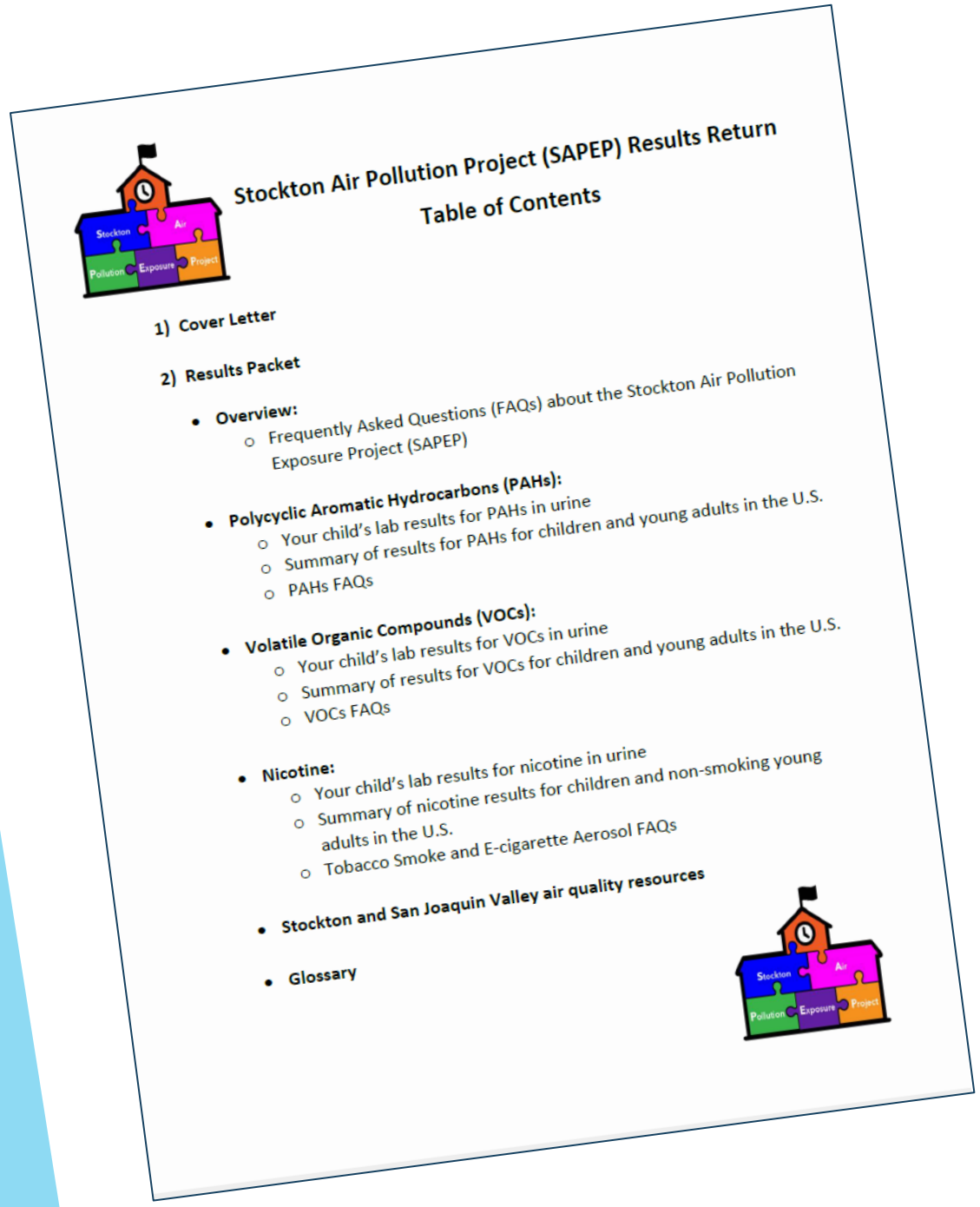
Urine was tested for chemicals that show exposure to volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs)

These chemicals:

Are common air pollutants

Can also be found in contaminated water, soil/dust, some consumer products and foods

May cause health problems



Stockton Air Pollution Project (SAPEP) Results Return

Table of Contents

1) Cover Letter

2) Results Packet

- **Overview:**
  - Frequently Asked Questions (FAQs) about the Stockton Air Pollution Exposure Project (SAPEP)
- **Polycyclic Aromatic Hydrocarbons (PAHs):**
  - Your child's lab results for PAHs in urine
  - Summary of results for PAHs for children and young adults in the U.S.
  - PAHs FAQs
- **Volatile Organic Compounds (VOCs):**
  - Your child's lab results for VOCs in urine
  - Summary of results for VOCs for children and young adults in the U.S.
  - VOCs FAQs
- **Nicotine:**
  - Your child's lab results for nicotine in urine
  - Summary of nicotine results for children and non-smoking young adults in the U.S.
  - Tobacco Smoke and E-cigarette Aerosol FAQs
- **Stockton and San Joaquin Valley air quality resources**
- **Glossary**

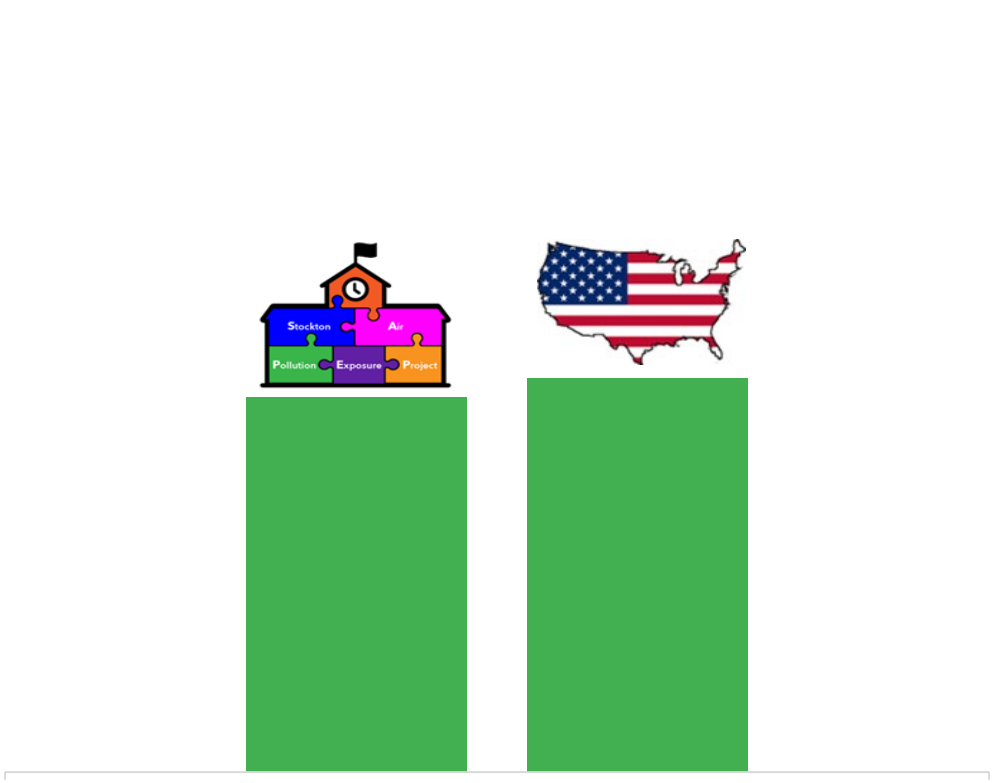
- Personal urine results were returned to participants in February and October of 2023
- Today we are sharing overall study findings

Portable Air Cleaners

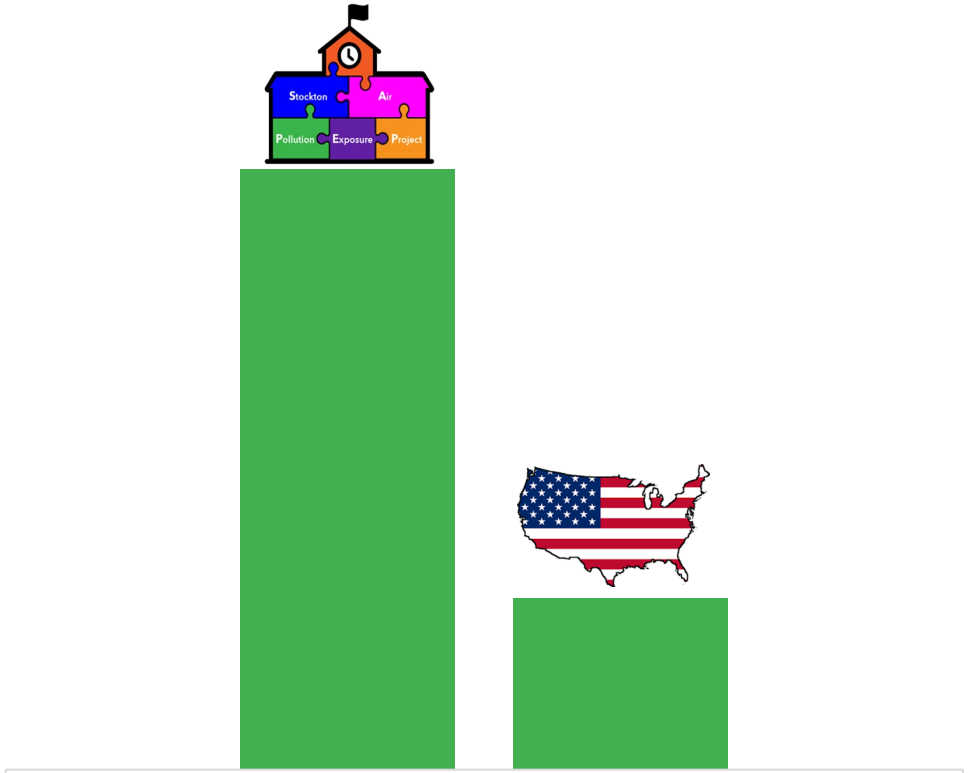
Reduced classroom air pollutant levels by about 25% to 50%

Generally did not change the levels of chemicals measured in participants' urine

SAPEP Urine Results Compared to the Rest of U.S.



Most chemical levels were about the same or lower in SAPEP participants



2-naphthol levels were about 3-4 times higher in SAPEP participants

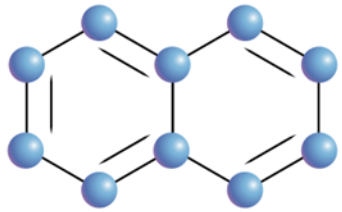
Based on comparison to children ages 5-13 years, participating in the 2015-2016 National Health and Nutrition Examination Survey (NHANES)

2-Naphthol in Urine:

- What is it?
- What does it tell us?

2-Naphthol Measured in Urine

- Tells us that a person has recently been in contact with naphthalene
- Does **NOT** tell us:
  - How or where the exposure occurred
  - When the exposure started, or how long it has been happening
  - If health effects will occur



Naphthalene

Common Sources of Naphthalene

Tobacco smoke

Cooking smoke

Cleaning products

Car and truck exhaust

Pest repellents

Caulking materials

Wood smoke

Industrial emissions

Paints

High 2-naphthol levels might partially be explained by:

Urban air pollution

Attached garage

Fried, grilled, BBQ, smoked or roasted food

High 2-naphthol levels were **NOT** likely due to:

- Tobacco exposures
- School environment

Should we be concerned about 2-naphthol levels found in urine?

- As with many other PAHs, high or prolonged exposure to naphthalene may cause cancer and other possible health effects
- Levels of 2-naphthol in the urine cannot tell us if health effects will occur
- Levels of naphthalene in the school air were well below levels that are known to cause health problems in people

Possible Ways to Reduce Exposures to Naphthalene

- Read labels and avoid using products that contain naphthalene

- If you use items that contain naphthalene, such as mothballs, use them only as directed
  - Store in air-tight containers out of reach of children
  - Air out and wash blankets and clothing stored with naphthalene mothballs before they are used

- Don’t idle your car in the garage, especially if it is attached to your home

- Limit eating grilled, barbecued, smoked, fried, or roasted food

Possible Ways to Reduce Exposures to PAHs, VOCs, and other Air Pollutants

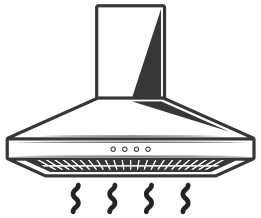
Do not smoke or allow others to smoke in your home or car, or around your child.

Avoid using a gas oven or gas burners **to heat your home**.

Do not idle cars inside **your garage.**

Avoid burning wood, **especially for home heating**.

Possible Ways to Reduce Exposures to PAHs, VOCs and other Air Pollutants (cont'd)



Use an exhaust fan or open windows when cooking indoors.

Cook with barbecues and grills outdoors only.

Limit eating grilled, barbecued, smoked, fried, or roasted food.

Use a high-efficiency filter in central heating and air system. Consider using a portable air cleaner.

General Good Practices to Reduce Chemical Exposures

Wash hands often, especially before eating or preparing food.

Clean floors regularly, using a wet mop or HEPA vacuum.

Use a damp cloth to dust.

Next Steps

- Promote ways to reduce exposures
  - Encourage the use of high efficiency air filters and portable air cleaners in schools
  - Share tips on how people can reduce their personal exposures
- Continue research to better understand sources of naphthalene
  - Compare results with other recent studies in Stockton and in the Central/San Joaquin Valley
  - Conduct community biomonitoring studies of air pollution in other areas of the state
  - Facilitate conversations between the community and government officials to help identify possible community sources of naphthalene

Addressing Pollution Concerns

Concerns about chemical exposures from air

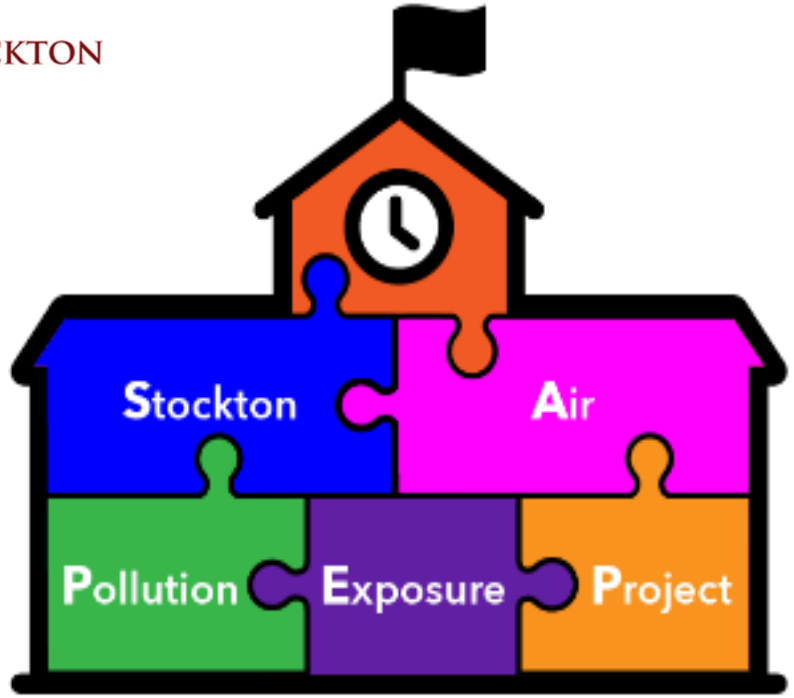
- **Community Air Protection Program Resource Center** – tools to support improving air quality at the community level: https://ww2.arb.ca.gov/ocap_resource_center/about
  - Contact the California Air Resources Board (CARB) with questions about potential chemical exposures from air: Kyle Goff, kyle.goff@arb.ca.gov
- **San Joaquin Valley Air District Resources**
  - **Stockton AB 617 Community Resources**– provides ways for Stockton residents to reduce exposures to air pollution: https://community.valleyair.org/selected-communities/southwest-stockton/
  - **Grants and Incentives Program** – voluntary incentive programs targeted at reducing harmful emissions throughout the Valley: https://ww2.valleyair.org/grants/
    - **Clean Air Rooms Program –** provides free residential air filtration units: https://ww2.valleyair.org/grants/clean-air-rooms-program/

Concerns about chemical exposures from water

- Contact the State Water Boards with questions about potential chemical exposures from water: Dayna Cordano at 916-341-5385, Dayna.Cordano@waterboards.ca.gov

Additional Resources

- Reach out to Biomonitoring CA with any questions about SAPEP: biomonitoring@oehha.ca.gov
- Biomonitoring California fact sheets, including VOCs and PAHs: https://biomonitoring.ca.gov/chemicals/fact-sheets
- Join the Biomonitoring California email list to stay informed of current projects and upcoming meetings: https://biomonitoring.ca.gov/join-our-email-list
- Susan Hurley, Research Scientist, California Department of Public Health, Susan.Hurley@cdph.ca.gov
- Rebecca Belloso, Health Program Specialist, Office of Environmental Health Hazard Assessment, Rebecca.Belloso@oehha.ca.gov



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Questions?
¿Preguntas?