

Study of Neighborhood Air near Petroleum Sources

Additional Acrolein Monitoring in Lost Hills

September 17, 2024

1. SNAPS Lost Hills Overview
2. Additional Acrolein Monitoring
3. Next Steps

Overview

- Characterize air quality in neighborhoods
- Select neighborhoods close to oil and gas extraction facilities
- Assess health risk from all surrounding sources
- Monitored air quality in Lost Hills from May 2019- April 2020



Program Goals

Characterize air quality
in communities near oil
and gas operations

**Identify emission
sources** as feasible

Analyze data for
possible health risks

Major Pollutants

Toxic Air Contaminants (TACs)

Criteria Pollutants

Particulate Matter (PM_{2.5})
Carbon Monoxide (CO), Ozone (O₃)

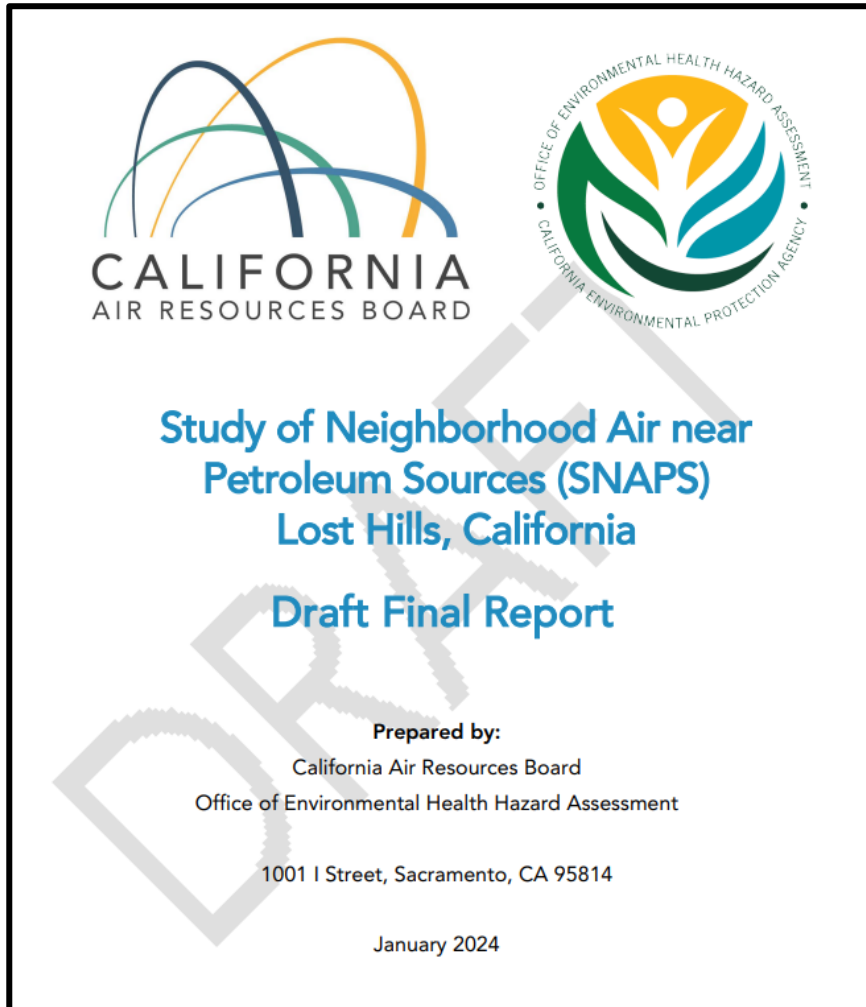
Volatile Organic Compounds (VOCs)

Methane (CH₄)

Hydrogen Sulfide (H₂S)

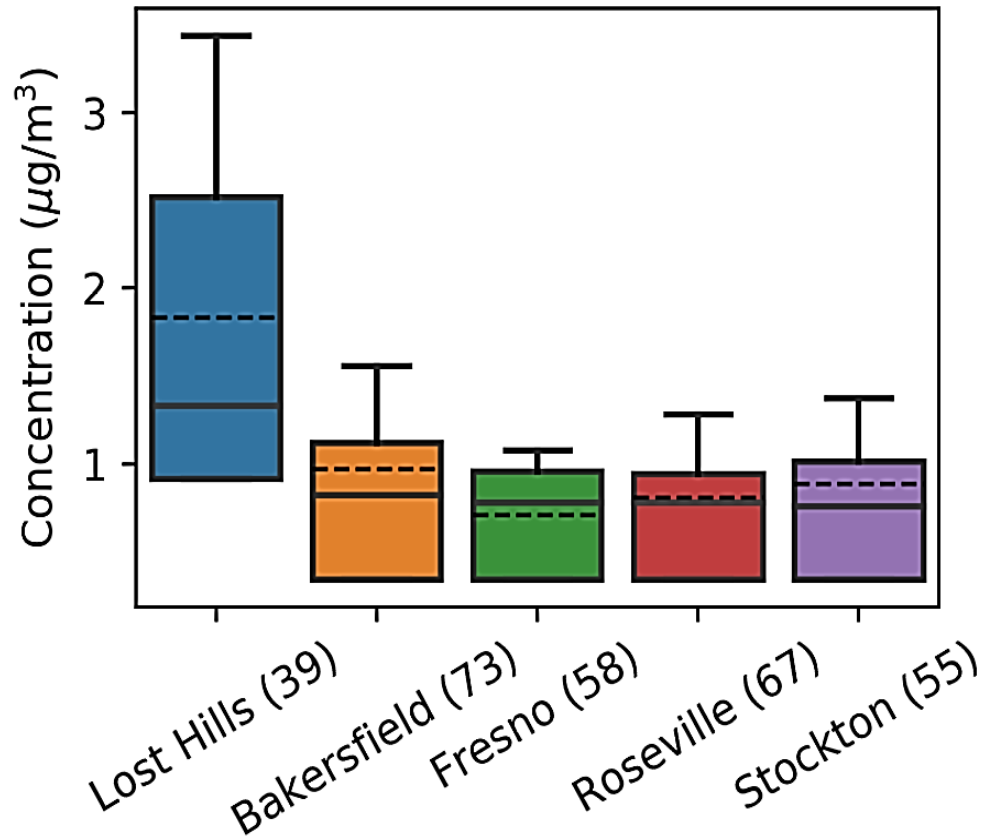
Metals

Glycols



- Lost Hills report released as draft for public comment in January 2024. Report includes:
 - Introduction and Background on SNAPS
 - Scope of SNAPS Monitoring and Methodology
 - Lost Hills Air Monitoring Results
 - Actions, Ongoing Work, and Next Steps
- Received public comments, including from Lost Hills residents, from January-April 2024
 - Plan to release final version of reports by early 2025
 - Will include revisions based on public comments, frequently asked questions document, complete data set for public use

Acrolein Concentrations Were Elevated in LH

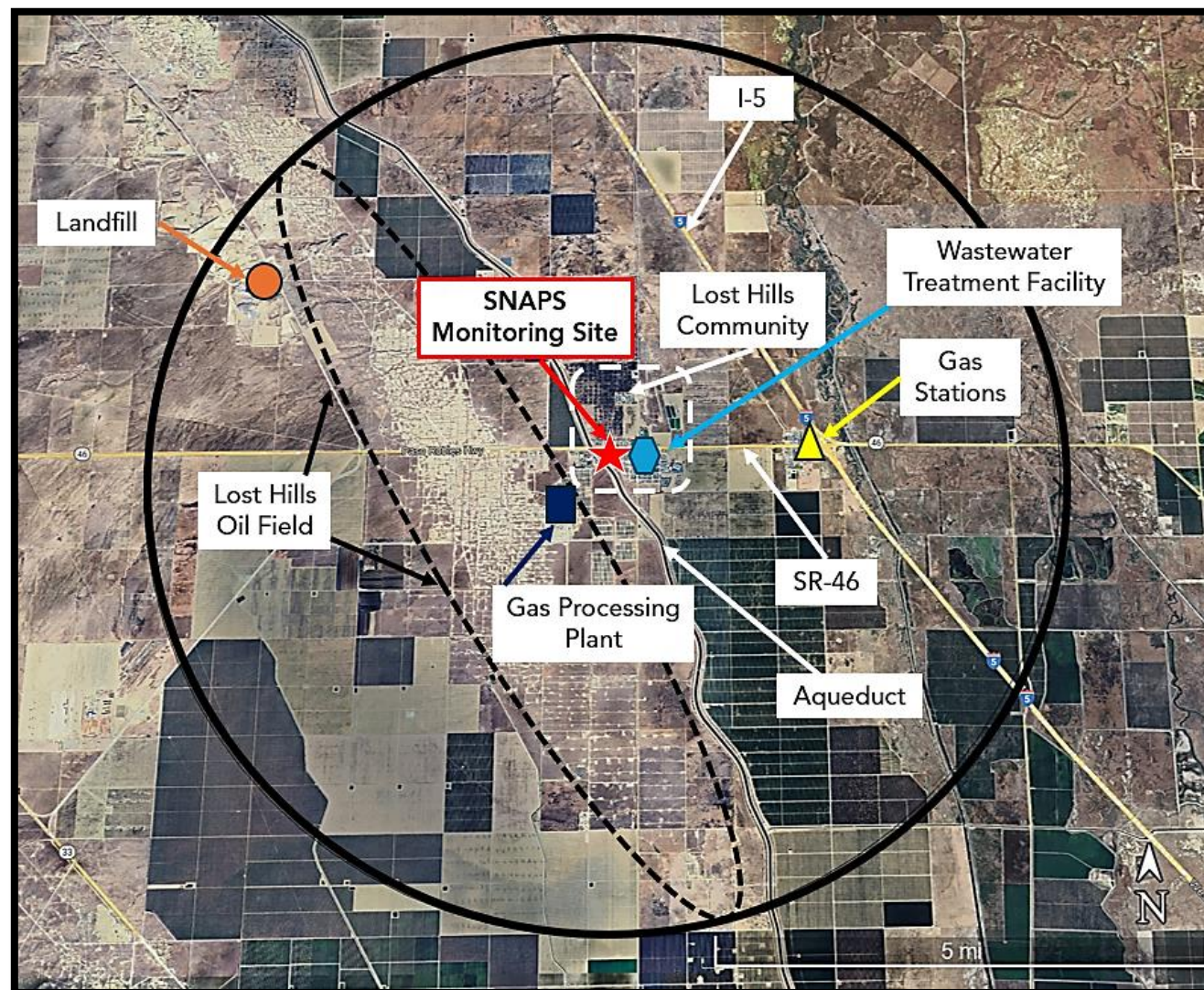


- Concentrations of many pollutants (inc. VOCs and TACs) in Lost Hills were similar to concentrations observed across the Central Valley - main exception: **acrolein**
- Average concentrations roughly twice as high in Lost Hills during 2019-20 sampling period
- Acrolein was the primary driver of noncancer health risk in Lost Hills (respiratory system and eyes)

Additional Acrolein Monitoring

Potential Sources of Acrolein

- Many potential sources:
 - combustion processes (e.g., automobiles, off-road equipment, diesel exhaust on and off oil field)
 - agriculture
 - reactions in the atmosphere
 - landfills
 - water systems
 - residential burning
 - cigarette smoke
- **SNAPS 2019-2020 air monitoring data not enough to determine source(s)**



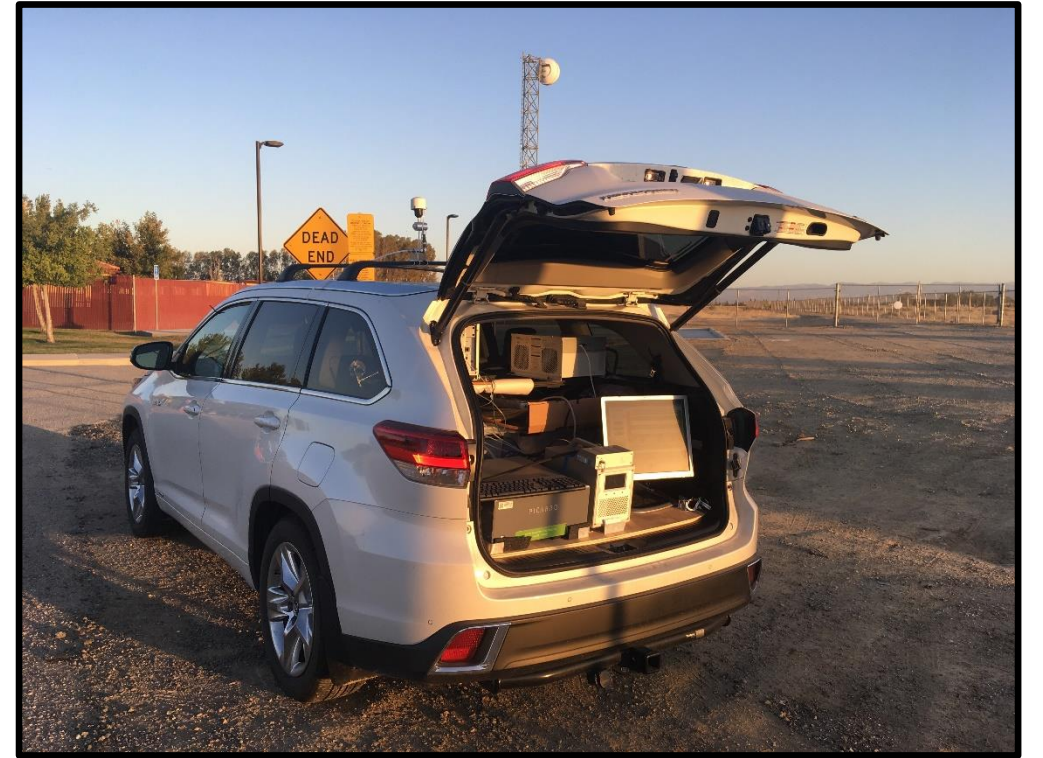
Preliminary Air Monitoring Plan: Acrolein



- Timeline
 - Winter 2024-25
 - Duration: 1-2 weeks
- Mobile monitoring vehicle equipped with new instrumentation
 - Acrolein measurements (if present) every 30 minutes
 - Vehicle driven to potential sources in/near community during the daytime
 - Vehicle parked overnight with instrumentation running
- Potential sources currently considering for monitoring:
 - Lost Hills Oil Field (*biocide, combustion, atmospheric reactions*)
 - Aqueduct (*biocide*)
 - Wastewater Treatment Plant (*biocide*)
 - Agricultural operations (*natural/biogenic source*)
 - SR-46 and I-5 (*combustion, atmospheric reactions*)
 - Wonderful Nut Processing Facility (*reported usage*)
 - **Others?**

Working with Community to House Vehicle

- **Looking for volunteer** to house air monitoring vehicle this Winter
- Host will be compensated for electricity usage to charge equipment overnight
- Will work with volunteer on timing once lease is in process
- Requirements:
 - **Space:** 17 feet x 7 feet parking space in driveway or backyard with no overhead restrictions
 - **Electricity:** Dedicated 120V, 20 Amp outlet



Next Steps



- Acrolein Monitoring
 - Work with resident volunteer on lease agreement to house SNAPS monitoring vehicle
 - Collaborate with community to finalize acrolein air monitoring plan
 - Winter 2024-25: Monitor air quality in Lost Hills to determine potential acrolein sources
 - After monitoring is complete, staff to analyze data and periodically report back to community
- Lost Hills Final Report
 - Release final versions of report by early 2025
 - Will include frequently asked questions document and data set for use by public

Questions?

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