

## SNAPS BALDWIN HILLS

- 'Regular communication of discrete data
- 'Continuous low exposure to beired zone?
- 'Start date of monitoring & length of time
- 'Cycle of production & effect on air concentrations  
(water injection)
- 'Why use CO, O<sub>3</sub>, PM<sub>2.5</sub>? Not related to odors from oil & gas  
H<sub>2</sub>S & heavy hydrocarbons may be better.
- 'Number of sites? 2
- 'Elementary School considered? There is closer school?
- 'Odor 8 pm - 5 am. Monitor @ that time of day?
- 'Battery for mobile monitoring tied to vehicle battery? reduce power  
limitations? (separate batteries - to deep cycle marine batteries)
- 'Web link to presentation? Can this be clearly provided?
- 'Distance to Hillcrest? Aren't there closer schools?  
(1 mile)
- 'Battery recharge time? Stagger the time of mobile monitoring?  
(few hours) 24 hour sample over multiple days, keep equipment safe overnight
- 'Pick best site & make it work, rather than worrying  
about power, etc.  
(metro modeling)

• prioritize storage tanks?

• is the location in line w/ health study?

• keep tabs on study, one location is the same

• Funding source?

state of California oil & gas fund

• Smaller analyzer @ Windsor Hills location?

• use mobile monitoring

• When will decision of sites & routes be made?

• open to feedback on area of route & timing

• Information on oil website to give times of day for monitoring

• Comments from people who are unable to attend?

• contact info on website

• <sup>UEHHA</sup> Comments on the current health study?

(yes, we could do that)

• Interactive effects of poverty, food insecurity, violence?

• Yes, disadvantaged communities more susceptible, include in RELs

• ~~At~~ Trace ambient air quality & other factors?

• 55,000 ppm methane & couldn't smell. What is the most concerning chemical?

• methane is a marker

• Methane will rise in air & separate from the heavier hydrocarbons?

• In Lost Hills, most medical significant gases? Are they associated w/ methane?

Are they of similar size?

• ~~Benzene~~ Benzene, 200 compounds, methane is a trace

• Anything we would like to measure that aren't

compounds selected by what comes off oil fields, methane

2/11

- If something shows up on mass spec will we identify it?
  - need a std. to quantify it.
  - if there is an inference that it is a compound, can get standard & see
  - do best to identify peaks
- After site selection, 24-hr phone # to report odors? Get mobile monitor to location of odors?
  - staff in Del Norte, can't commit to turn around time, Lost Hills has been 3 days
  - Yes, will have plate to leave a voicemail
- SNAP communicate w/ AQMD?
- Measure biological effects of  $H_2S$ ? in children?
  - Not part of this study
- Also, please call oil field odor complaint line.
- Can oil field change production during the monitoring?
  - look @ production numbers
- More than one Met station? swirling winds can occur, complex terrain, diesel gas monitoring
  - Cal puff monitoring
  - Will look into diesel gas monitoring
- Will there be a transcript of questions & answers?
  - Yes, pic & transcribe
- Sentinel peaks are inside the fence? Contact w/ the sites?
  - Yes.
  - Yes.
- Variation in compounds tested between Lost Hills & Baldwin Hills?
  - open to adding more, list was comprehensive
- 6 months vs. 1 year of monitoring?
  - more data, health.
  - open to feedback on duration

2/11

- More sites, need Northeast side, more met stations - a lot more small ones
- North eastern site w/ school too far, too many other factors, like closer site w/ more met stations
- How do processes on the oil field affect the air?
  - high production vs. low
  - use stationary & mobile to figure out how air concentration changes over distance.
- 2 more sites to consider: Village green community - odor complaints  
Windsor hills school - 60 inhaled that nurse stocks
- Would like slides & information at least 3 days before meeting.
  - larger ~~dictation~~ dictation
- CARB:
  - Want a monthly update for some data?
- More granular data to correlate to what is happening in the field
  - we show a weeks data on the website, bc data takes longer to produce
  - Want trend data & peaks. (wind rose for 24hr, & week on website)
- Showing East Hills data may help w/ understanding
  - the air concentration in a rose was helpful
  - some continuous data on website would be helpful
  - Do Not wait until end of study for data

2/11

Mobile monitoring have summa canistwo?  
Yes. Also BTEX

2/12

# SNAPS - Culver City

## Elevation of 4 sites

- Sentinel peak 1 - top of hill
- Sentinel peak 2 & Marycrest - between oil & Culvert
- Hillcrest lowest

## Electricity for Sentinel Peak sites?

- Yes, from Sentinel

## Distance Marycrest Manor & Active Wells

- 1/2 mile

## How far will mobile monitoring go?

- Open to feedback on routes

## How far in Lost Hills

- 2/3 - 1 mile for mobile in community

L.A. more black carbon & PM 2.5

No identification on car, why?  
there is a sign on car

Sentinel Peak agreed to sites?  
Yes, preliminary

Cancer clusters- can we monitor near these?

Lost Hills smaller. Would there be more  
mobile monitoring here?

later to objectives of community with the  
available resources

Objectives: (1) All around  
(2) Odors, odor clusters  
(3) Complement county study & EJ goals  
(4) Understand set back distances

How much mobile monitoring?  
by community leaders

• More feedback on monitoring?

Yes, email

Please cross reference w/ odor compliant  
1/4 reports. Can it be @ 4 AM when they  
are complaints? Yes.

• Go through area multiple times.

• Extend beyond set-back distances.

More than 2500 feet.

4,000 feet there were odor during spill

• Mobile monitor during different wind patterns



• More people live on east side.

• Please allocate enough resources.

Scale & scope huge. Monitor proportional to impact.

• Emissions from highway indistinguishable from field

• Yes, CARB will do source attribution

• Street & field emission are different

• Markers For Inglewood oil field?

• looking @ 200 compounds

• Gas composition for this oil field? It should be different from gasoline.

How was decision made for Sentinel Sites?

- Yes, working w/ operators
- CARB & Sentinel Peak internally
- Community input. Enviro screen score

How will data go to county & Cal enviro screen.

- 6 pollutants on website
- Will work with county

Carbon 14 test of  $\text{CH}_4$ ? <sup>Thermogenic vs.</sup> Biogenic?

- No.
- Use methane/ethane ratios vs. isotopic ratios

Why Windsor Hills was not selected?

Comparison of Aliso Canyon & the levels at Baldwin Hills? Can this be shared?  
can do & share.

Community sensitivity - health effects in loved ones

Mixture of chemicals.

cumulative impacts, other factors that effect susceptibility

Graphic of risk on a map?  
Each area can determine absolute risk & confidence in it?  
estimate concentrations & risk

Individual can assess their risk based on location?  
modeling at CARB  
can see if this is possible

Identify areas of greatest risk.

Cancers on southside (brain) vs. other side? Air currents separate VOCs?

VOCs • From different areas or times of day?

Manage language. No safe levels of some chemicals. Experience of community.—set expectations & what are the goals.

• L.A. more black carbon & PM<sub>2.5</sub>

Would combination of benzene & particulates increase risk? Synergy?

• County found no health impact.

What is healthy? baseline?

• cancer risk - not a comparison to neighbors

• Data would be when?  
6 months after monitoring

• What thresholds will we use?  
- CA-specific values

• What happens after the report?

Next steps?

- work w/Air districts & operators
- methane regulation - let's CARB strengthen regulations
- (can work to fix leaks)

External Policy Recommendations -  
Set-backs?

Monitoring & tracking of climate impact  
- Yes, methaw.

Health assessment part of final report?

What does it look like in Lost Hills?  
- ongoing Is there sufficient data?  
Same format? - open to feedback  
- lots of data compared to other studies.

Please share Lost Hills information here.  
Helpful to see the Lost Hills mid-monitoring  
data.

- Yes, we can share Lost Hills info.

City of Culver City Can Provide livestream  
services.

Exp  
be  
- Yes  
- b/c of

Data gaps in CCST study filled by this study.

Timeline & collaboration w/ AB617?

Emission reduction plan may be sooner

Please no surprises in the final report. Communicate to relevant people when we see them. Looking for trends.

If a chemical increases even if green—need to look at it. Look at data as a trend.

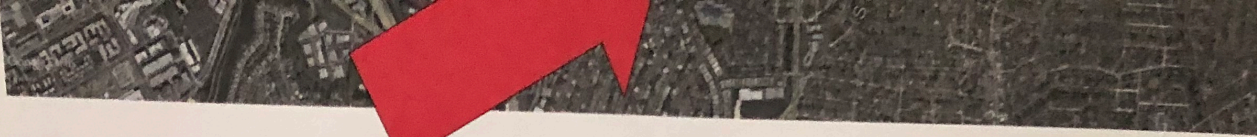
Yes, look at time of day - & monthly

look @ acute levels.

Expect mid-monitoring update w/ trends. Will there be flexibility at that time?

-Yes, Last Hills adjusted

-bc of odor adjusted outside monitoring time.



## WSW Prevailing Wind Direction

- Site lease vs. six months - one year
- Could have mobile monitoring after site lease?
  - Yes, could go to Lost Hills.

- Pollution mapping tool for this?
  - Could consider

- Kick-off meeting before monitoring begins.

- Distrust of operators. Why the Sentinel sites? More info on why they were chosen.

- Criteria of 2-4 site decision?

- Want to give more information on each site & then decide final site. Email info @ least one month to respond
  - will decide in next couple months

• Schedule on website as a draft.

• Consideration of monitoring in verified cancer cluster by freshman drive.

• Happy w/ sites (from group that suggested Edison sites)

• Change in operations during monitoring. Please look at this.

• Examine production vs. air concentrations

• Liked mobile monitoring slide. liked that there is community guidance, accessibility & translation

• Dislike: communication w/ operators, less frequent communication w/ community

• terrain more complex than Lost Hills  
• what is the model - w/o that when put stations 20



- End product - time & area analysis
  - ~~correct~~ concern that model hasn't been selected.
- Project management - scope & schedule.
- Second mobile?  $\begin{matrix} 2 \text{ stationary} \\ 1 \text{ mobile} \end{matrix}$
- Source information - production, injection data
  - Can we get this?
  - Tons VOC per month/year?

## February 2020 SNAPS Baldwin Hills Community Meeting Notes

Plain text: community comments

Italicized text: CARB/OEHHA responses

### February 11, 2020: Knox Presbyterian Church

- Request regular communication of discrete data
- Is continuous low exposure expected in the red zone?
- What is the start date of monitoring and length of time?
- Consider cycle of production (water injection) and effect on air concentrations
- Why use CO, O<sub>3</sub>, PM<sub>2.5</sub>? Not related to odors from oil and gas. H<sub>2</sub>S and heavy hydrocarbons may be better.
- What is the expected number of sites? 2.
- Did you consider a closer elementary school?
- There are odors between 8 PM and 5 AM. Can you monitor at that time of day?
- Is the battery for mobile monitoring tied to a vehicle battery? Can you reduce power limitations? There are *separate batteries, 6 deep cycle batteries*.
- Can you provide a web link to the presentation? Can this be clearly provided?
- What is the distance to Hillcrest? About *1 mile*. Aren't there closer schools?
- What is the battery recharge time? *A few hours*. Stagger the time of mobile monitoring? *We can get approximately a 24 hour sample over multiple days but need to keep equipment safe overnight*.
- Pick the best site and make it work, rather than worrying about power, etc. (meteorological monitoring)
- Prioritize storage tanks
- Is the location in line with the health study? *We keep tabs on the health study, one location is the same*.
- What is the funding source? It is the *State of California oil and gas fund*.
- Can there be a smaller analyzer at the Windsor Hills location? *We can use mobile monitoring*.
- When will decision of sites and routes be made? *We are open to feedback on area of route and timing*.
- Consider using information on operator's website to give times of day for monitoring.
- How can people who are unable to attend leave comments? There is *contact info on the SNAPS website*.
- Can OEHHA give comments on the current health study? Yes.
- Will you consider the interactive effects of poverty, food insecurity, and violence? *Yes, disadvantaged communities are more susceptible, included in RELs*.
- Tease apart air quality and other factors?
- I have experienced 55,000 ppm methane and couldn't smell. What is the most concerning chemical? *Methane is a marker*.
- Methane will rise in air and separate from the heavier hydrocarbons.

- In Lost Hills, what are the most medically significant gases? Are they associated with methane? Are they of similar size? *We are monitoring over 200 compounds, including benzene, and methane can be a tracer.*
- Is there anything we would like to measure that we aren't? *Compounds were selected based on what comes off oilfields, including methane.*
- If something shows up on mass spec, will we identify it? *Need a standard to quantify it. If there is an inference that it is a compound, can get standard. We do our best to identify peaks.*
- After site selection, will there be a 24-hr phone number to report odors? Will you get the mobile monitor to the location of odors? *There is staff in El Monte, but we can't commit to turn around time. Lost Hills has been about 3 days. Yes, CARB can have a place to leave a voicemail.*
- Does SNAPS communicate with AQMD?
- Are you measuring biological effects of H<sub>2</sub>S? In children? *That is not part of this study.*
- Also, please call oilfield odor complaint line.
- Can oilfield change production during the monitoring? *We are looking at production numbers.*
- Will there be more than one met station? Swirling winds can occur, complex terrain, dense gas modeling. *We are working on CalPUFF modeling and will look into dense gas modeling.*
- Will there be a transcript of questions and answers? *Yes, pictures and a transcription.*
- Are the Sentinel Peak sites inside the fence? *Yes. Have you had contact with these sites? Yes.*
- Is there variation in compounds tested between Lost Hills and Baldwin Hills? *We are open to adding more, though the list is comprehensive.*
- How will you determine if there are six months vs one year of monitoring? *It will depend on needing more data for health analysis. We are open to feedback on duration.*
- Consider more sites, need some on northeast side, more met stations, a lot more small ones.
- Northeastern school site is too far, too many other factors, like closer site with more met stations.
- How do processes on the oilfield affect the air, such as high production vs low? Use stationary and mobile to figure out how air concentration changes over distance.
- 2 more sites to consider: Village Green community, odor complaints. Windsor Hills Elementary School, where that nurse stocks 60 inhalers.
- Requests slides and information at least three days before meeting, with larger dictation.
- Want a monthly data update
- Is there more granular data to correlate to what is happening in the field? *We show one week's data on the website. GC data takes longer to produce. We also have wind roses for 24 hour and past week on the website.*
- Want trend data and peaks

- Showing Lost Hills data may help with understanding. The air concentration in a rose was helpful. Some continuous data on website would be helpful. Do not wait until the end of study for data.
- Does mobile monitoring have summa canisters? *Yes, also BTEX.*

#### February 12, 2020: Culver City Senior Center

- What is the elevation of the 4 sites? *Sentinel Peak 1 is on top of the hill (near Kenneth Hahn), Sentinel Peak 2 and Marycrest are elevated between the oilfield and Culver City, Hillcrest Drive Elementary School is the lowest elevation.*
- Where is the electricity for Sentinel Peak sites from? *Yes, it is provided by Sentinel Peak Resources.*
- What is the distance between Marycrest Manor and active wells? *They are within ½ mile.*
- How far will mobile monitoring go? *We are open to feedback on routes.*
- How far is the Lost Hills Oil Field? *It is about 2/3 mile from site and about 1 mile from the community.*
- Why is there no identification on the car? *There is a sign on the car.*
- Has Sentinel Peak Resources agreed to the sites? *Yes, preliminarily.*
- Cancer clusters, can we monitor near those?
- Lost Hills is smaller. Would there be more mobile monitoring here? *We will cater to the objectives of community with our available resources.*
- Suggested mobile monitoring objectives: (1) monitor all around (2) consider odors, odor clusters (3) complement county study and EJ goals (4) understand setback distances
- How much mobile monitoring will there be with this larger community?
- Can the public provide more feedback on monitoring? *Yes, via email.*
- Please cross reference with quarterly odor complaint reports. Can mobile monitoring be at 4 AM when there are complaints? *Yes.*
- Go through area multiple times.
- Extend beyond setback distances more than 2500 feet. 4000 feet, there were odors during spill.
- Mobile monitor during different wind patterns.
- More people live on the east side.
- Please allocate enough resources.
- The scale and scope are huge. Monitor proportionally to impact.
- Are emissions from highway indistinguishable from the oilfield? *Yes, CARB will do source attribution. Street and oilfield emissions are different.*
- Are there markers for the Inglewood Oil Field? *We are looking at over 200 compounds.*
- What is the gas composition for this oilfield? *It should be different from gasoline.*
- How was the decision made for the Sentinel Peak Resources sites? *We are working with the operator (CARB and Sentinel Peak Resources) internally. We are also using community input and CalEnviroScreen scores.*

- How will data go to the county and CalEnviroScreen? *6 pollutants are on the website; we will work with the county.*
- Are you doing a Carbon-14 test of CH<sub>4</sub>? Is it thermogenic vs biogenic? *No, we use methane/ethane ratios vs isotopic ratios.*
- Why was Windsor Hills Elementary not selected?
- Can there be a comparison of Aliso Canyon and the levels at Baldwin Hills? Can these be shared? *We can try to compare and share.*
- There is community sensitivity due to health effects in loved ones.
- Consider the mixture of chemicals. We will look at *cumulative impacts and other factors that affect susceptibility.*
- Consider creating a graphic of risk on a map. Can each area determine absolute risk and confidence in it? *We will estimate concentrations and risk.*
- Consider if an individual can assess their risk based on location. *We will look into modeling at CARB, can see if this is possible.*
- Identify areas of greatest risk.
- There are a number of cancers on the south side of the oilfield (brain) vs. the other side. Do air currents separate VOCs?
- Consider VOCs from different areas or times of day.
- Manage language. There are no safe levels of some chemicals. Know the experience of community, set expectations, and set goals.
- L.A. has more black carbon and PM<sub>2.5</sub>. Would combination of benzene and particulates increase risk? Synergy?
- County found no health impact. What is healthy? Is there a baseline? *We will look at cancer risk, not a comparison to neighbors.*
- When will data be released? *Approximately six months after monitoring.*
- What thresholds will we use? *CA-specific values.*
- What happens after the report? What are the next steps? **We can work with air districts and operators, CARB has a methane regulation, CARB can strengthen regulations, can work with operators to fix leaks.**
- Consider external policy recommendations, including setbacks.
- Are you monitoring and tracking climate impacts? *Yes, we are monitoring for methane.*
- Is a health assessment part of final report?
- What does it look like in Lost Hills? **Monitoring is still ongoing.** Is there sufficient data? Will it be the same format? *We are open to feedback; there is lots of data compared to other studies.*
- Please share Lost Hills information here. It would be helpful to see the Lost Hills mid-monitoring data. *Yes, we can share Lost Hills info.*
- City of Culver City can provide livestream services.
- Are data gaps in CCST study filled by this study?
- What is the timeline, and is there collaboration with AB 617?
- The Emission Reduction Plan may be implemented sooner.
- Please have no surprises in the final report. Communicate to relevant people when we see them. We are looking for trends.

- If a chemical increases even if the data display is green, you need to look at it. Look at data as a trend. *Yes, we look at time of day and monthly data, as well as acute levels.*
- We expect a mid-monitoring update with trends. Will there be flexibility at that time? *Yes, adjusted in Lost Hills; because of odor, adjusted mobile monitoring time.*
- Will the site lease be six months to one year?
- Could there be mobile monitoring after site lease? *Yes, including in Lost Hills.*
- Will there be a pollution mapping tool for this? *We can consider this.*
- Have kickoff meeting before monitoring begins.
- There is a distrust of operators. Why the Sentinel Peak Resources sites? We want more info on why they were chosen and criteria for the final two sites.
- Want more information on each site and then decide the final sites. Email info with at least one month to respond. *We will decide in the next couple of months.*
- Have a schedule on the website as a draft.
- Consider monitoring in verified cancer cluster by Freshman Drive.
- We are happy with the sites (group that suggested Edison site).
- Could there be a change in operations during monitoring? Please look at this.
- Examine production vs air concentrations.
- Liked mobile monitoring slides, liked that there is community guidance, accessibility, and translation.
- Dislike: communication with operators, less frequent communication with community.
- Terrain is more complex than in Lost Hills.
- With the model, where will you put stations?
- What is the end product, with a time and area analysis? There is concern that model hasn't been selected.
- Consideration for project management, scope and schedule.
- Will there be a second mobile monitor? *We will have two stationary and one mobile.*
- Can you get source information, including production and injection data and tons VOCs per month and year?