Downtown Timnath Air Quality
Frequently Asked Questions

Date: January 15, 2021

Public Information Session Meeting date and time: January 19th, 2021 from 5:30pm to 6:30pm
Website: https://timnath.org/updates/air-quality-panel/

KEY:
Town – Town of Timnath
CDPHE – Colorado Department of Health and Environment
Larimer – Larimer County Health Department
CSU – Colorado State University – Atmospheric Science Department

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QUESTION:
Is what I smell in the air harmful?

ANSWER (provided by the CDPHE/CSU):

- Not necessarily.
  - Whether a person experiences symptoms from odors depends on many individual and environmental factors including:
    - individual sensitivities.
    - previous experiences.
    - the type of odor.
    - the amount of odor.
    - how long the odor lasts.

  - People often smell odors at levels that are much lower than levels associated with health effects.

  - Generally, people smell most odors and experience short-term health effects *before* the odors reach a level known to be toxic.
    - Some people report short-term symptoms from odors such as eye, nose and throat irritation, coughing, nosebleeds, nausea, and headaches.
    - Many people report that their symptoms go away when the odor is gone.

  - The only way to find out if odors are at high enough levels to cause health effects is to take air samples.

QUESTION:
Are the odors I smell caused by the chemicals that have been found in the Timnath air samples?

ANSWER (provided by the CDPHE/CSU):

- Probably not based on the concentrations measured thus far.

- CDPHE staff have researched odor detection levels for chemicals monitored in the air samples.

- Most people should not be able to smell the chemicals at levels present in the Timnath air samples collected to date. Some of the chemicals observed do produce odors at concentrations much higher than those measured.

- This does not mean odors are not present in Old Town Timnath. There may be odor-creating chemicals in the air that samplers did not test for.

QUESTION:
What is the Town doing to address the odors in Old Town Timnath?

ANSWER (provided by the Town):

- In March of 2018, the Town implemented a town-wide Odor Ordinance (code requirement) that establishes the thresholds for odors to be considered a nuisance violation of the Town's Land Use Codes.
- The Town has purchased an instrument (Nasal Ranger) to take odor readings to monitor the odor levels town-wide, not just in Old Town. The Town's Code Enforcement Officer is certified to operate the instrument. The instrument is the same one that the State uses and the State provides a certification course on its usage.
- The Town responds to submitted odor complaints by investigating the complaint and taking readings on the instrument. If odors are found that exceed the thresholds set in the odor ordinance, and are deemed a nuisance odor, the Town will determine the odor source and make contact with the offending party and require them to submit an Odor Management Plan. Fines may be imposed if the property owner fails to comply with the approved Odor Management Plan.
    - The Town of Timnath has set the threshold for an odor violation as follows:
        - Two (2) or more volumes of odor free air as determined by two measurements being separated by at least 15 minutes outside of the property line of the property from which the emission originates.
        - This standard is more stringent that that set by the State of Colorado. The State has set their threshold at for residential or commercial areas after the odorous air has been diluted with seven (7) or more volumes of odor free air.
- As it pertains to the odors in Old Town Timnath:
    - The Town investigates each complaint that has been raised.
    - The Town has met with Alpine Cabinet Company on various occasions to understand their operations and discuss the complaints.
    - The Town takes measurements on the instrument periodically (generally twice a week and at random times of the day) to determine if a violation has occurred (to date, none of the readings have been deemed a nuisance odor per the odor ordinance).
    - In 2016 and in 2018 the Town conducted air sampling tests with the help of CSU.
    - In 2019 the Town reached out to the CDPHE to conduct a toxicology assessment.
    - In 2020 the Town assembled a panel of experts to review the findings and to prepare a presentation to the residents of Timnath.

QUESTION:
How can I report an offensive odor in Timnath?

ANSWER (provided by the Town):

- The Town asks that you submit odor related complaints using the Town's Odor Complaint Form found on the Town's website here: https://timnath.org/updates/air-quality-panel/

- The Town will respond to your complaint and will follow up with an investigation.

QUESTION:
How were the tests conducted by CSU? Who collected the samples? What testing equipment was used by CSU? Was it appropriate for these specific toxins? Are there other ways to collect samples that are more accurate and provide a better representation of the situation?

ANSWER (provided by CSU):

- CSU partnered with the Town of Timnath to collect air samples for volatile organic compound (VOC) analysis in two separate periods.
    - During spring 2016, air samples were collected by CSU staff during periods of high odor (as communicated to CSU staff by the Town of Timnath).
    - During fall 2018, air samples were collected by Timnath staff.
    - In both cases, canisters for air sampling were provided by CSU and analyzed by CSU using gas chromatography.
    - In both measurement periods samples were collected upwind and downwind of the Alpine Cabinet Company facility to look for increases in local VOC concentrations associated with emissions from the facility.

- Air sample collection in passivated canisters followed by chemical analysis using gas chromatography is a standard method for analysis of VOCs in air. The samples that were taken were "grab" samples, taken over a short period of time (minutes) in an attempt to capture peak concentrations of measured VOCs (e.g., during odor periods).
    - Two limitations to the manual sample collection strategy employed in the initial testing are:
        - (1) the ability to ensure sample collection occurs at the time of peak concentrations to best assess acute exposure potential and;
        - (2) the use of several short sampling periods that prevents full assessment of longer-term average concentrations around the facility relevant to chronic exposure potential.

- Newer technology now allows for continuous, semi-quantitative monitoring of total VOC levels using a photoionization detector (PID). The PID sensor can be coupled to a canister that can be triggered for reference grade, quantitative, speciated analysis of VOCs when the PID signal reaches high levels.

- This technology, which has really matured over the past year, provides a better opportunity to capture emission plumes that present the greatest potential for short-term exposure.
- Existing, time-integrated canister sampling strategies, like those previously used by Timnath and CSU for VOC monitoring at Bethke Elementary, provide a better measure of average VOC concentrations in the area of interest.
- Coupling weekly-integrated canister sampling with a PID-sensor with triggered canister collection can effectively assess both long-term and peak VOC concentrations.

QUESTION:
What is the State of Colorado Department of Public Health and Environment doing about the odors and the potential health risks associated with those odors?

ANSWER (provided by the CDPHE):

- CDPHE is working on two fronts to address potential odor-related health risks.
  - The Air Pollution Control Division is periodically monitoring all permitted industries in the Town of Timnath to make sure they are in compliance with state air regulations.

  - The department also has performed a preliminary screening level health assessment using conservative health guidelines to identify potential risks.
    - The department based the screening level assessment on air data collected by Colorado State University in 2016 and 2018.
    - Overall, the screening level assessment shows there is limited potential for health risks based on the levels of chemicals found in the air samples collected in Timnath.
    - However, the air samples were collected over a very short time period, and the department can't assess potential long-term health risks from this data.

QUESTION:
There is an elementary school located in Old Town. What risks do the children face from the odors?

ANSWER (provided by the CDPHE/CSU):

- The health effects people, including children, may experience from odors in Timnath are unclear.
  - Many individual and environmental factors contribute to health risks caused by odors.

  - There are uncertainties associated with the odors in Timnath.
    - The chemical composition, concentration, and source of the odors are unknown.
    - The number of hours a day and days a year that odors are present is also unknown.

  - CSU collected air samples in the vicinity of the elementary school and CDPHE included them in our preliminary screening level health assessment.

- Chemicals in those air samples and others collected around the town were below odor detection thresholds in 2018.
- The analysis conducted by our Toxicology and Risk Assessment Unit considers all groups who may be at risk, including school children.
- Overall, the screening level assessment found there was limited potential for health risks based on the levels of chemicals that were found in the air samples collected in Timnath.

- CDPHE has previously generated a wind rose for Fort Collins and the surrounding areas.
  - This wind rose suggests the predominant winds in Timnath are from the north-northwest.
  - If the odors are coming from the center of Old Town Timnath, we expect the majority of these odors will be blown to the southeast of the elementary school.
  - During periods of air stagnation or when other wind directions occur, emissions from the center of Old Town can accumulate or travel in other directions.

QUESTION:
What chemicals have been detected in the air in Timnath? Are these carcinogenic? Are they at a level that I should be concerned about?

ANSWER (provided by CDPHE/CSU):

- Seven chemicals have been reported in air samples taken in the Town of Timnath (acetone, benzene, ethylbenzene, isopropanol, methyl ethyl ketone, toluene, and xylene).

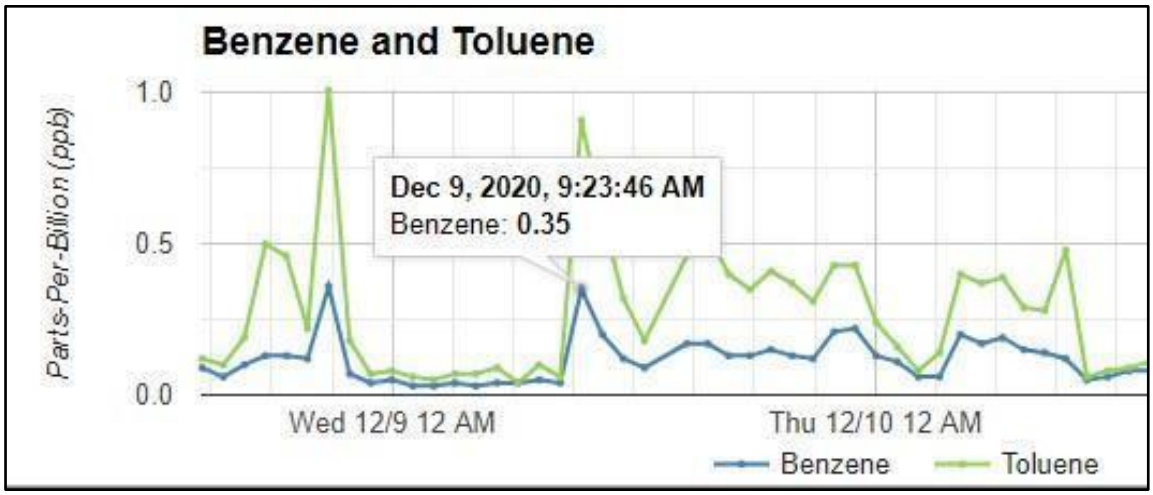
- Long-term exposure to high levels of two of these chemicals (benzene and ethylbenzene) can lead to cancer. The preliminary risk assessment indicates that the lifetime risk of getting cancer from both compounds combined is within the "risk management range" established by the EPA. This level of cancer risk is generally considered to be low (https://www.epa.gov/national-air-toxics-assessment/nata-frequent-questions).

- Benzene and ethylbenzene are present in a wide variety of products such as gasoline, paints, varnishes, glues, solvents, and cleaners.

- They are also found in automobile exhaust and emissions from dry cleaning, painting, coal/oil/gas burning plants, and other industries.

- The concentration of benzene found in the Timnath air samples was 0.05 - 0.33 parts per billion (ppb). This is similar to or less than concentrations in other areas:
  - Bethke Elementary School in southeast Timnath: 0.20 ppb.
  - Platteville: 0.63 ppb, Jan-Dec 2017.
  - Denver: 0.29 ppb, Jan-Dec 2017.
  - Other sites in Boulder County: 0.2-1.2 ppb, 2014.
  - Garfield County: 0.37ppb, 2016.

- Timnath benzene concentrations are also similar to average concentrations at Boulder Reservoir. The graph below shows levels at Boulder Reservoir from Dec. 9 to Dec. 10, 2020.



https://www.bouldair.com/boulder.htm#nmhc.

- Maximum concentrations of ethylbenzene in Timnath samples (0.14 - 6.97 ppb) are higher than other concentrations detected in city/suburb, rural, and indoor locations (0.62 ppb, 0.1 ppb, 1 ppb, respectively).

- Investigators need additional sampling for benzene and ethylbenzene to assess whether these compounds present a long-term cancer risk.

QUESTION:
I know of a number of people who have cancer that live in Old Town Timnath. Is this related to the odors I smell?

ANSWER (provided by the CDPHE):

- Probably not.

    - Based on the sampling data collected to date, it does not appear that the compounds that are known to cause cancer are present in the air at levels that people can smell.

    - Unfortunately, cancer is common; it is the leading cause of death in Colorado and the second leading cause of death in the United States.

    - One out of every three people is expected to be diagnosed with cancer in their lifetime.

    - Because many cancers are common diseases, they occur quite often in communities. We expect to find cases of cancer in any given neighborhood or workplace.

QUESTION:

Is Alpine Cabinet Company in compliance with their State Air Quality Permit and the Town's Odor Ordinance?

ANSWER (provided by the Town):

- Yes. The Colorado Department of Health & Environment Air Pollution Control Division Field Inspection Report from February of 2020 indicates that Alpine Cabinet Company is in compliance with all aspects of their permit (Permit No.: 08LR0955).

- In addition, the Town of Timnath monitors for nuisance odors. Each of those readings show that Alpine Cabinet Company is also in compliance with the Town's Odor Ordinance.

QUESTION:
Can the Colorado Department of Public Health and Environment (CDPHE) conduct a health risk assessment for this particular area?

ANSWER (provided by the CDPHE):

- CDPHE has conducted a preliminary screening level health assessment, at the request of the Town of Timnath, of chemicals in the air in the Town of Timnath using 2016 and 2018 air sample data provided by Colorado State University. That report is available on the Town of Timnath's website listed above.
    - Overall, the screening level assessment found that there is limited potential for health risks based on the levels of chemicals found in the air samples collected in Timnath.
    - The current data is not adequate for CDPHE to conduct a more robust, health risk assessment based on long-term health effects.
    - Additional data would need to reflect the unique emissions from the industry under investigation, airborne chemical exposures currently encountered by the people living in Timnath, and other factors.

- CDPHE can conduct a full health risk assessment for Timnath, if requested, and if additional air data is collected.