

Medical Provider Fact Sheet

Aliso Canyon Gas Leak

This fact sheet provides clinical information to medical providers about the natural gas leak at the Aliso Canyon Natural Gas Storage Facility near Porter Ranch. The natural gas leak began on October 23, 2015. The Los Angeles County Department of Public Health (DPH) has determined that emissions from this facility are causing health effects in some individuals in the Porter Ranch community. Based on clinical data and air quality monitoring to date, these exposures may cause short-term, recurrent symptoms in some individuals; these health effects may continue as long as odors from the gas leak persist. Based on current information, exposure to these emissions is not anticipated to cause long-term or permanent health effects. Outdoor air in the Porter Ranch area is being monitored, and DPH will continue to assess health and air quality data until the gas leak is resolved. The most recent estimate for the repair of the gas leak is March 2016.

What are the health effects from the chemicals of the natural gas leak?

Natural gas in California is composed primarily of methane. Methane is odorless by itself, so trace amounts of odorants called mercaptans are added to make a gas leak easy to detect. Southern California Gas Company uses an odorant called Scentinel® T-50, which contains two ingredients, tetrahydrothiophene (THT) and t-butyl mercaptan. These gases have strong odors, even at very low air concentrations. Other trace compounds may also accompany natural gas. The chemicals of concern, and their expected health effects, are listed below.

- **Methane:** Methane is an odorless gas, and is the primary fuel component of the natural gas mixture. The health hazard associated with methane is its flammability. Methane inhalation in this setting generally does not pose any short-term or long-term health risks. Methane air concentrations in Porter Ranch are substantially lower than flammable limits and currently do not pose a health and safety risk to residents in the area.
- **Mercaptans:** At this time, the natural gas leak is releasing very low levels of mercaptans into the air which are too low to be detected by precision air monitoring instruments. These trace levels of mercaptans are too low to lead to systemic accumulation. The health effects experienced by some individuals in this community are secondary to a physiological response to the mercaptan odor. Mercaptans have a strong “rotten-egg,” “garlicky,” or “skunk-like” odor. These very low-level exposures may cause eye, nose, and throat irritation; coughing, nasal congestion, epistaxis, and dyspnea; nausea and abdominal discomfort; and/or dizziness, lightheadedness and headaches. Symptoms vary depending on the frequency and duration of exposure to the odor and generally subside once the patient is removed from the odor. While scientific data on the long-term health effects of mercaptan exposure are limited, no such effects have been observed or reported. The extremely low levels of mercaptans in the present situation further mitigates any concern about such effects.
- **Benzene and related chemicals:** Because the gas leak became a complex environmental problem with an estimated March 2016 repair date, DPH deemed it necessary to monitor for other trace chemicals that could lead to other health effects. These include compounds such as benzene, toluene, ethylbenzene, xylene, polycyclic aromatic hydrocarbons, and metals. The chemical of highest concern is benzene, as it is a known human carcinogen associated with leukemia and other bone marrow disorders. Daily air concentrations of benzene in the Porter Ranch community to date have averaged in the range of 0.5 parts per billion. This level is consistent with average benzene concentrations that are routinely recorded in outdoor air in the Los Angeles Air Basin; as such, the concentrations measured to date do not suggest short or long term health risks. Due to the unpredictability of the environmental conditions at the site, DPH is actively monitoring for any increases in benzene. Air concentrations of other

compounds (toluene, ethylbenzene, xylene, polycyclic aromatic hydrocarbons, and metals) have been very low and do not pose a short-term or long-term risk at this time. As more air monitoring data becomes available, DPH will keep the medical community updated.

For more information on air monitoring and other DPH activity around the gas leak, medical providers can visit the website <http://www.publichealth.lacounty.gov/media/gasleak/> which will be updated as new information becomes available.

Are there any relevant medical tests that should be ordered?

There are no recommended toxicological tests of blood, urine, or other tissues for the clinical evaluation of patients exposed to the gas leak. While laboratory tests do exist for monitoring compounds such as benzene in petroleum industry workers, these tests are used only for the purpose of biomonitoring, and not for clinical evaluation.

Are there any specific diagnostic considerations and medical treatments?

Patients should be evaluated clinically for symptoms of mercaptan exposure. There is a wide variation in symptoms in different individuals exposed to mercaptans. For example, in the same household one family member may smell no odors, one may smell odors but have no or minimal symptoms, and another may experience severe symptoms. Children and adults who are otherwise healthy should receive symptomatic treatment. Patients with mild tolerable symptoms can remain in their homes. The only treatment for persistent or unbearable symptoms is removal from the odor. Patients with intolerable symptoms should be encouraged to take advantage of temporary relocation assistance offered by the gas company.

Are there any special considerations for patients with chronic disease?

Patients who have been exposed to the natural gas leak may present with exacerbations of chronic conditions or worsening of medication side effects which may, or may not, be associated with the exposure. Exposure to the gas leak may present a diagnostic dilemma for medical providers. For example, patients with asthma may experience an increased need to use rescue inhalers. This could be due to exposure to the gas leak or due to another etiology. These patients may benefit the most from temporary relocation in order to properly diagnose changes in their chronic conditions. To discuss specific patient concerns, please contact Dr. Cyrus Rangan at the telephone number below.

Relocation Services

If your patients are experiencing odors and symptoms and wish to be temporarily relocated from their homes, Southern California Gas Company is offering free temporary relocation for any individuals, families, and pets. **Relocation is not mandatory.** To learn more about relocation assistance, call **877-238-9555**.

For More Information:

Los Angeles County Department of Public Health

- Environmental Health Program: 888-700-9995
- DPH Aliso Canyon Gas Leak Health Information website: <http://www.publichealth.lacounty.gov/media/gasleak/>
- Questions and concerns regarding patient management: contact Dr. Cyrus Rangan, Medical Toxicologist, Director of the Bureau of Toxicology and Environmental Assessment, Los Angeles County Department of Public Health, at (213) 738-3220.
- To join/view LAHAN (Los Angeles Health Alert Network) visit: <http://publichealth.lacounty.gov/lahan/>

South Coast Air Quality Management District 800-CUT-SMOG

Los Angeles County Fire Department 323-881-2411

Southern California Gas Company 877-238-9555