



USC University of Southern California

DEPARTMENT OF PREVENTIVE MEDICINE

June 15, 2017

Los Angeles City Council
200 N. Spring St.
Los Angeles, CA 90012

RE: Oil and Gas Extraction in Los Angeles (Council File #17-0447)

Dear Council President Wesson and Los Angeles City Council:

Air surrounding oil and gas production areas is particularly vulnerable to toxic emissions. Increasingly, petroleum extraction is occurring in highly urbanized areas, and yet, little is known about the health consequences for nearby residents.¹⁻⁴ A single drill site typically operates for decades and the extraction process itself produces emissions of multiple health-hazardous air pollutants, including benzene, toluene, ethylbenzene, xylene, formaldehyde, hydrogen sulfide, and methylene chloride.⁵⁻⁸ These chemicals can migrate off-site due to fugitive emissions, spills, leaks, or accidents and have been shown to be higher near drill sites compared to other areas. Air quality is further compromised by truck traffic to and from the drilling site or operation of diesel equipment.

Exposure to these air pollutants have been shown to be higher in areas near drilling sites^{2,9-11} – and are associated with a range of acute health symptoms, including eye, nose, and throat irritation, impaired lung function, dizziness, fatigue and asthma exacerbation.^{2,12} Recent health surveys near petroleum extraction sites have reported symptoms of throat and nasal irritation, eye burning, sinus problems, headaches, skin problems, loss of smell, cough, nosebleeds and stress.¹³⁻¹⁵

The scientific literature demonstrates the human health impacts from exposure to these chemicals. Studies of acute inhalation exposures to petroleum hydrocarbons in occupational settings as well as among residents living near refineries, oil spills or gas stations have found increased risks of eye irritation and headaches,^{16,17} and asthma symptoms.¹⁸⁻²⁰ Furthermore, Inhalation of petroleum VOCs, such as benzene, toluene, ethylbenzene and xylenes (BTEX) is known to adversely affect the nervous system. Reported effects range from dizziness, headaches, and fatigue at lower exposures to numbness in the limbs, incoordination, and tremors, and respiratory system irritation, difficulty breathing, and impaired lung function at higher levels.¹² Recent health surveys

near gas extraction and hydraulic fracturing sites have reported symptoms of throat and nasal irritation, eye burning, sinus problems, headaches, skin problems, loss of smell, cough, nosebleeds and stress.^{13,14,21} These symptoms were more common in individuals living near gas facilities compared to those farther away.

Hydrogen sulfide (H₂S) is an odorant gas associated with oil drilling. Most human organ systems are susceptible to the toxic effects of H₂S, particularly mucus membranes, including the central nervous system, the respiratory system, the cardiovascular system and the gastrointestinal system.²² At ambient levels, odorant chemicals may produce irritation of the eyes, nose, and throat. Such compounds can induce symptoms such as nausea, vomiting, headaches, stress, negative mood, and a stinging sensation.^{23,24} Odors that are viewed as unpleasant, embarrassing, or sickening may interfere with mood, beneficial uses of property, and social activities. There is evidence that chronic exposure to elevated ambient concentrations contribute to harm to the respiratory system in both adults and children in addition to elevated cough, headaches and wheezing.^{25,26}

From a public health perspective, it is important to act to reduce exposures to harmful pollutants at home, in schools and at work places.

Sincerely,

A handwritten signature in black ink, appearing to read "Jill Johnston", with a stylized flourish at the end.

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