Office of Environmental Health Hazard Assessment

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M E M O R A N D U M

SUBJECT: SUMMARY OF EXPERT ADVISOR INPUT REGARDING PUBLIC HEALTH MEASURES TAKEN FOR THE ALISO CANYON GAS LEAK

DATE: February 12, 2016

On January 6, 2016, the Governor issued an Emergency Proclamation that among other actions, requested the Office of Environmental Health Hazard Assessment (OEHHA) to "…convene an independent panel of scientific and medical experts to review public health concerns stemming from the gas leak and evaluate whether additional measures are needed to protect public health beyond those already put in place."

OEHHA requested experts in toxicology, epidemiology, exposure science and medicine, to review the available data on exposures, symptoms and toxicity of constituents in the natural gas, and to provide their opinions on whether additional measures are needed to protect public health. OEHHA asked the expert advisors to answer the following charge question, taken from the Governor's emergency proclamation:

> Based on your expertise and your review of the information we have provided you on the exposures of residents to constituents of the gas leak, are there additional measures needed to protect public health beyond those already put into place?

The expert advisors provided responses individually to OEHHA and discussed them on a conference call hosted by OEHHA.

- The expert advisors indicated that the measurements of exposures in the Porter Ranch area to volatile organic compounds such as benzene, toluene, ethyl benzene, xylenes, and hexane, to date have been largely below Reference Exposure Levels set by OEHHA, which are protective of the general public including sensitive individuals. The advisors noted that the measured exposures were not different than routine human exposures to these compounds which are found in ambient air both indoors and outdoors. Although there were a few instances where benzene levels were mildly elevated for brief periods of time, the expert advisors expressed little concern for current levels of exposure to these air contaminants from the gas leak.

- The expert advisors indicated that the symptoms reported to the Los Angeles County Health Department were largely consistent with known responses to the noxious odors of the mercaptan odorants added to the natural gas.

- The expert advisors overall found the measures taken offering relocation and providing air filters was effective, but encouraged all reasonable actions to reduce exposure to the odorants (in order to reduce the symptoms).

Additional recommendations provided to enhance already taken measures include the following:

1. The exposure experts were pleased to see the Air Resources Board's recommendations on the type of air filters that would help remove the odorants. These experts indicated that, while the filters are effective, people may not run the filters properly unless they are given good instructions. The experts recommended that community resources be made available to instruct people in the proper use of the filters, including teachers in the schools.

2. Several advisors suggested that while the leak continues, people who are very affected by the smells should be encouraged to relocate until the leak is stopped. Further, a few advisors thought that individuals with existing chronic health conditions should be encouraged to relocate. Finally, one advisor felt that women who are pregnant should also be encouraged to relocate. These last two recommendations were made in an abundance of caution due to potential for unknown effects of exposures to the mercaptans and the potential ability of the mercaptans to aggravate existing conditions such as asthma.

Finally, although not related to immediate actions to protect public health, many of the expert advisors thought some type of health surveillance or study may provide additional information regarding the potential health effects of low level exposure to the mercaptan odorants.