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FACT SHEET

No. 2014-02

SEWER GAS ISSUES

JANUARY 2014

The Office of Environmental Health and Safety (OEHS) has responded to several reports of sewer odors at various new schools and has conducted environmental monitoring to determine if harmful levels were present. Using multiple types of equipment, no harmful levels have been detected. The Facilities Services Division (FSD) is working to address the odor issues and OEHS will continue to work with FSD and the schools until resolution. In order to help address possible questions about sewer gas, OEHS is providing this informational fact sheet for your reference.

What is sewer gas?

Sewer gas is a complex mixture of toxic and non-toxic gases that can be present at varying levels depending upon the source. It is formed during the decay of household and industrial waste. Toxic components of sewer gas include hydrogen sulfide and ammonia. Sewer gas also contains methane, carbon dioxide, sulfur dioxide, and nitrous oxides.

How are people exposed to sewer gas?

Sewer gas can enter a building through a floor drain, from a leaking or blocked plumbing roof vent or in rare cases through cracks in foundations. Far removed from a school setting, sanitation and farm workers can be exposed to sewer gas during the cleaning and maintenance of municipal sewers, manure storage tanks, and home septic tanks.

It is important to note that the human nose can detect hydrogen sulfide at levels much lower than those that are regulated or considered harmful. The odor threshold of hydrogen sulfide is also far below the detection limits of monitoring instruments and the permissible exposure level regulated by the California Occupational Health and Safety Administration (Cal/OSHA).

How can hydrogen sulfide affect my health?

Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Exposures to high concentrations of hydrogen sulfide, greater than 500 parts per million (ppm), can cause a loss of consciousness and possibly death. Exposures to high levels may also result in permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of hydrogen sulfide. Again it is

important to note that high levels of hydrogen sulfide are not common and are not associated with the odors found in a school setting.

Has the state or federal government made recommendations to protect human health?

The California Occupational Safety and Health Administration (Cal-OSHA) has set a threshold limit value (TLV) of 10 parts hydrogen sulfide per 1 million parts of air (10 ppm) in the workplace.

The National Institute for Occupational Safety and Health (NIOSH) recommends a 10-minute ceiling limit of 14 ppm in the workplace.

What kind of monitoring was done at schools?

At each of the schools experiencing odor issues, OEHS has conducted multiple indoor air quality investigations which included environmental monitoring. No detectable levels of hydrogen sulfide have been found with standard monitoring equipment.

In one case, specialized monitoring equipment with the capability to detect at ultra-low levels was brought in to help pinpoint potential sources of sewer gas. OEHS staff conducted daily monitoring and found that readings were below 0 ppm.

What are the next steps in resolving this issue?

FSD is reviewing mitigation measures at each school to resolve the odor issues. At some schools, the ventilation and exhaust systems have been identified as possible contributing factors and modifications have been conducted. In addition, various plumbing issues have also been identified and repairs are underway. OEHS will continue to work with M&O and the schools to seek a speedy resolution to this matter.

For information regarding this subject or clarification on any points raised, please contact OEHS at 213-241-3199.