



New Jersey Department of Environmental Protection **FACT SHEET**

Keegan Landfill, Kearny, NJ

Updated: July 25, 2019

SUMMARY

The Department of Environmental Protection (DEP) has received complaints concerning intermittent hydrogen sulfide odors emanating from Keegan Landfill since December 2018, at which time DEP staff mobilized to the area to investigate. Between February and early May 2019, DEP staff conducted regular inspections and air monitoring at and around the landfill. As of May 8, 2019, the New Jersey Sports and Exposition Authority (NJSEA) installed and began operating a monitoring system that continuously tests the air and has detected hydrogen sulfide odor emissions from the landfill. Although some of these odor emissions have exceeded regulatory standards set by DEP, the emissions have been recorded at levels below those known to cause adverse health effects. To resolve these odors, DEP has approved NJSEA's design of a gas collection and control system, to be installed by September 17, 2019. While hydrogen sulfide odors are likely to increase during the construction of this system, it is anticipated that, when complete, the system will assist in eliminating hydrogen sulfide odors from Keegan Landfill.

FREQUENTLY ASKED QUESTIONS

What is hydrogen sulfide?

Hydrogen sulfide (H₂S) is a colorless gas with the odor of rotten eggs. It is often generated as a by-product of industrial and natural processes, including during the breakdown of waste contained within a landfill. Hydrogen sulfide has a low odor threshold, which means that it can be detected by humans at very low concentrations before it could pose a health risk.

What are the regulatory standards for hydrogen sulfide?

To ensure conditions that remain protective of human health and the environment, the DEP has set a conservative regulatory standard of 30 parts of hydrogen sulfide in one billion parts of air (ppb) averaged over any 30-minute period at or beyond the property line of the landfill.

What have DEP inspections found at Keegan Landfill?

Upon identifying Keegan as a source of hydrogen sulfide odors, DEP immediately notified NJSEA of its compliance obligations and commenced regular odor inspections and hydrogen sulfide monitoring at and around the landfill, and NJSEA installed eight continuous monitors on May 8, 2019. Between May 15 and July 22, 2019, the *average* of hydrogen sulfide emissions across the eight continuous monitors were between 0.96 ppb and 3.30 ppb, below the regulatory standard of 30 ppb over 30 minutes and below the Minimal Risk Levels observed by the New Jersey Department of Health (discussed below). However, exceedances of the 30-minute, 30 ppb regulatory standard were detected on multiple occasions between 30.3 ppb and 828 ppb. DEP is taking enforcement action with respect to these exceedances.

What is being done to address odors at Keegan Landfill?

NJSEA has worked cooperatively with DEP investigators and entered a voluntary Administrative Consent Order with DEP on March 22, 2019, the immediate goal of which was for NJSEA to design and install the continuous monitoring system now present at the landfill. This system of eight monitors functions

continuously, 24 hours a day, to provide data necessary to assist NJSEA in ensuring that conditions at the landfill are protective of human health and the environment. These monitors have measured exceedances of the regulatory standard for hydrogen sulfide emissions at Keegan, which NJSEA is addressing through the installation of a temporary gas collection and control system.

NJSEA submitted permit applications and received approval from DEP to design and install a temporary gas collection and control system that will assist in resolving odor emissions from Keegan Landfill, until such a time a permanent system can be installed. DEP will enforce the conditions of the approved permits if monitoring indicates verifiable odor violations or exceedances of the 30-minute, 30 ppb standard for hydrogen sulfide emissions. Installation of the gas collection and control system began on June 24, 2019 and is planned to be completed by September 17, 2019.

What can my community expect during construction of the gas collection system?

During installation of a gas collection and control system it is common for odors to be present. At Keegan Landfill, odors are likely to increase during installation of vertical wells that are drilled down through the landfill mass in order to collect the gas. Vertical well installation is anticipated to commence at Keegan Landfill on July 30, 2019. While the community is likely to experience an increase in odors during construction, NJSEA and its contractors will observe best management practices required by DEP permits and approvals and mitigate any increase in odors. DEP will be present to monitor compliance as NJSEA works to address all odors for the benefit of the community.

How could hydrogen sulfide odors from Keegan Landfill affect my health?

Exposure to low concentrations of hydrogen sulfide within the range of 30 ppb over 30 minutes has the potential to cause eye, nose, or throat irritation, headaches and nausea. It may also cause difficulty breathing for some individuals with respiratory problems, such as asthmatics. There are some people who may be more sensitive to hydrogen sulfide and can smell it at even lower levels (as low as 0.5 ppb) due to the odor itself.

When evaluating health impacts for hydrogen sulfide exposure, the New Jersey Department of Health (NJDOH) uses the Minimal Risk Levels (MRLs) developed by the federal Agency for Toxic Substances and Disease Registry (ATSDR) to assess the possibility of adverse health effects. An MRL is an estimate of the daily human exposure to a hazardous substance at or below which that substance is unlikely to pose a measurable risk of adverse health effects. These MRLs have many safety factors built in and the actual levels where health effects would be observed are much higher.

Based on the monitoring data collected to date, hydrogen sulfide odors from Keegan Landfill are below the MRL for acute or intermediate effects, which means that the levels of hydrogen sulfide recorded to date are not known to cause adverse health effects. More details on the MRL and how hydrogen sulfide odors from landfills may affect your health are available from NJDOH at:

https://www.nj.gov/health/ceohs/documents/Hydrogen_sulfide_fact_sheet.pdf

What should I do if I experience hydrogen sulfide odors in my neighborhood?

The DEP encourages residents to report odors to the DEP Hotline, or through the new WARN NJDEP app, available on both Apple and Android devices.

