



EXETER HEALTH DEPARTMENT

20 COURT STREET, EXETER, NH 03833-2716

Phone: (603)773-6132

FAX: (603)773-6128

www.exeternh.gov

STATEMENT FROM THE HEALTH DEPARTMENT

Recently, there has been concern about a nuisance smell coming from the wastewater treatment plant. Many people have been concerned about possible health implications linked to the smell, what the smell is, and when it will go away. The Exeter Health Department has been working in conjunction with the Department of Public Works to address the issue including the possible health risks and abate the nuisance. This statement is to serve as an update to what our findings have been so far.

The smell in question is linked to hydrogen sulfide, a common compound found in the sludge in wastewater. Hydrogen sulfide is very odorous, and in high concentrations can be dangerous. While there are other compounds present in the process of treating wastewater, hydrogen sulfide is the most prevalent and of the most concern. One of the lagoons at the treatment plant has been identified as having a lot of sludge that is producing the hydrogen sulfide.

What is interesting about hydrogen sulfide is just how little it takes for the human nose to detect it. As little as **one part per billion** is detectable. Meaning of a billion particles of air in a given space, one hydrogen sulfide particle can be detected by smell. Testing is ongoing at the plant, but today, June 7, 2018, an expert was brought to the site to assess the air quality. Some areas immediately around the lagoon in question registered at up to 30 parts per **billion**, making the smell easily detectable.

So how much is safe to breathe and when is a person's health at risk? To understand what we're smelling and what the limits of exposure are, we'll have to look at some numbers. Hydrogen sulfide is not regarded as a hazardous air pollutant by the EPA and NH does not have an ambient air standard for it. Federal OSHA regulations do not have an 8 hour exposure limit for working, but do have ceiling an peak levels after 20ppm (parts per **million**). Some states have an 8 hour exposure limit of 10ppm. Between 10 and 20 parts per million is where eye irritation can occur. According to the U.S. Department of Health and Human Services, studies have shown there is no risk of birth defects associated with low levels of hydrogen sulfide. People with respiratory issues may experience problems after 2ppm. Right now, we are well below 1ppm at the source, so as this is dissipated into the air, there are less parts per million of hydrogen sulfide present.

What does all this mean? Well, in summary, there is enough hydrogen sulfide to be detectable, but not nearly enough to be dangerous, even right at the source above the lagoons at the treatment plant. Even to highly susceptible populations, such as pregnant women and those with respiratory health issues, there is no imminent health risk. That

being said, it is a pungent smell, and an individual's reaction to an adverse smell may turn your stomach.

What is being done to correct the issue? Aerators are already in the lagoon that is presenting the issue, but more are being added. Some of the aerators are also being converted to act as an "odor cover," by circulating the water at the very top of the lagoon to prevent odor from escaping. Water from other lagoons has also been added to help with the oxygen content in the water. The Department of Public Works is currently working with Wright-Pierce engineering and the NH Department of Environmental Services to correct the issue. We are all working very hard to abate the nuisance and maintain the health and safety of the community. We are continuing to work with professionals to test the air quality and we will continue to update the community as we work to solve the issue.

James Murray
Health Officer