

COMMUNITY IMPACTS OF LANDFILLS

WHAT IS A LANDFILL?

The collection of waste at landfills can produce noxious odors and hazardous gases, which can move through the air and ground, and enter well water, buildings, and homes.

Landfill gas exposure can cause respiratory problems, headaches, nausea, and dizziness. In severe cases, it can lead to asphyxiation.



IMPORTANT THINGS TO KNOW ABOUT LANDFILL GAS

Landfills emit many different gases.

Some of the most concerning are:

- Methane (highly flammable)
- Vinyl Chloride (highly flammable)
- Volatile Organic Compounds (VOCs)
- Hydrogen Sulfide (H₂S)
- Per- & Poly-fluoroalkyl Substances (PFAS)



CASE STUDY: SAMPSON COUNTY LANDFILL

The Sampson County Disposal Landfill, GFL Environmental Inc., is in the Snow Hill community of Roseboro, North Carolina. This area has a high proportion of Black, Latino, and Indigenous people compared to the county and state.

Initially the site of a local dump, the community opposed its expansion into a regional landfill but unfortunately lost the battle. The landfill now encompasses approximately 1,300 acres (that's nearly the size of 1,000 football fields!) and accepts many types of waste, from residential to industrial, from 73 counties in North Carolina. Alarming, information is hard to obtain regarding the types of waste that truly enter the landfill or the associated health risks.

"The discriminatory siting and permitting of landfills gave rise to the environmental justice movement in 1982 in Warren County, North Carolina. Forty years later, landfills are still frequently sited near Black, Latino, and Indigenous communities, and low-income Communities."

- Southern Environmental Law Center

SAMPSON COUNTY LANDFILL FACTS

SIZE



Largest landfill in NC - waste from 73 counties.



From 1992-2024 has grown from ~ 350 acres to ~ 1,300 acres



1.8 million tons of waste is dumped in the landfill annually

HAZARDS



The landfill ranks first in the nation in methane emissions, with over 824,000 metric tons of methane emitted in 2021.



The landfill is North Carolina's second-greatest emitter of the carcinogen vinyl chloride.

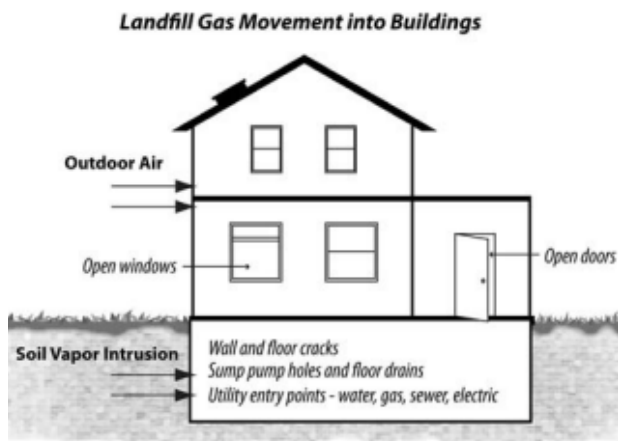


Harmful Forever Chemicals (PFAS) have been found in the landfill as well as nearby streams and drinking water wells. The landfill accepted sludge from the Chemours facility in Fayetteville since as early as 1995. These millions of tons of sludge are the likely cause of widespread water contamination.

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HOW CAN I BE EXPOSED TO LANDFILL GASES?

The unpleasant and potentially harmful gases from a landfill can travel through the soil and reach people in two ways: outdoors in the air, and indoors through cracks and openings in nearby buildings.



https://www.health.ny.gov/environmental/outdoors/air/docs/landfill_gas.pdf

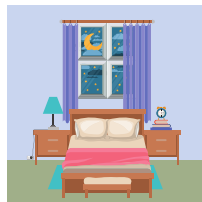


Outdoors

Landfill gas can seep into the air around the landfill and drift towards homes and buildings.

Indoors

Cracks in basement floors and walls, utility lines entering the building, and sump pump openings can act as pathways for landfill gas to enter a building. Even doors, windows, and ventilation systems can allow some gas to enter if not properly sealed.



WHAT IS A LANDFILL GAS TO ENERGY SYSTEM?

As organic materials decompose in landfills, gas emissions are released into the air and water. Landfill Gas to Energy systems capture that gas through a network of wells, pipes, and pumps. The Landfill Gas is piped to a facility where it is converted to methane through combustion – burning off other accompanying gases, moisture, and impurities.

The Landfill Gas to Energy system being constructed at the Sampson County landfill would compress the methane, place it into tanks, and transport it by truck to gas pipelines, where it would ultimately be burned to produce energy.

HAZARDS OF LANDFILL GAS TO ENERGY



Compressed methane is extremely flammable and poses a high risk of explosion during transport.



Methane capture operations have been known to leak, and burning the byproducts of landfill gas emits toxic air pollutants.



Methane is a powerful greenhouse gas that is at least 25x more potent than carbon dioxide at trapping heat in the atmosphere, which exacerbates our changing global climate.



Pollutants from these facilities include sulfur dioxide and two known carcinogens, benzene and vinyl chloride.



There is also a risk of PFAS air emissions from processing LFG at the Sampson County landfill posing various health risks to nearby communities.