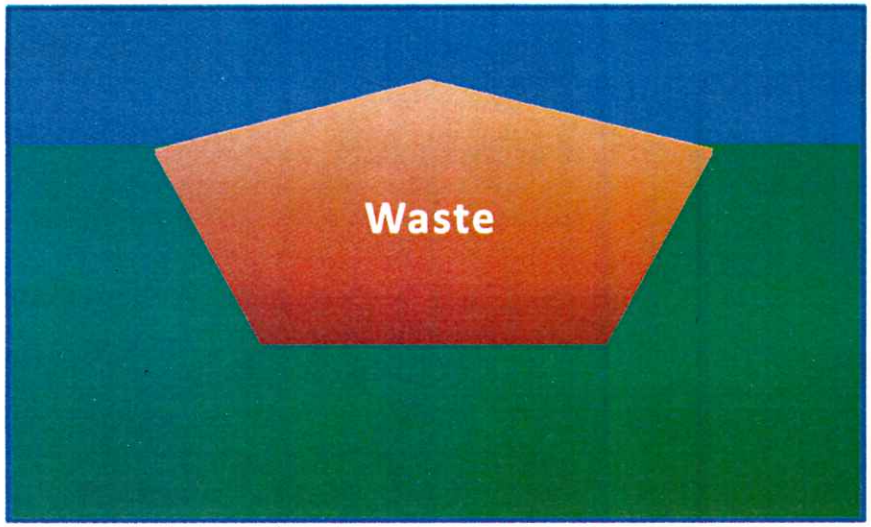
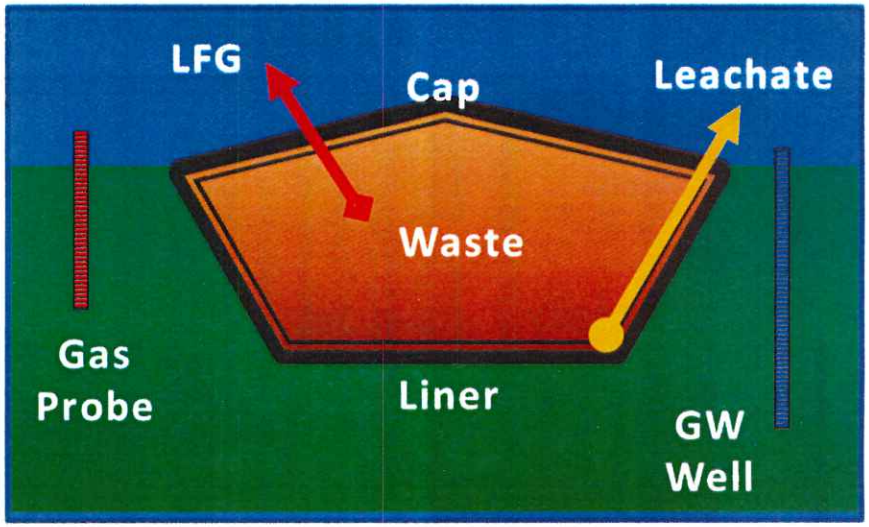
Landfills: History, Design and Post Closure

"Dumps" of the Past



Modern Day Sanitary Landfill



A Brief History of NH Rules Governing Landfills

1960s Federal, state and local governments started making changes to replace "the dump" with sanitary landfills as we became aware of the need to manage solid waste in an environmentally responsible way that would be protective of public health and safety.

1981 NH passes *The Solid Waste Management Act* (Currently RSA 149-M).

1982 Effective date of the first set of Solid Waste Rules.

1991 Major change in Solid Waste Rules to transition from non-specific public health based rules that said, "state of the art" technology for landfills to an engineered system approach using modern technology.

1995 NH becomes a US EPA approved state, allowing the state to independently regulate its own municipal solid waste landfills.

2003 RSA 149-M:9(XIII) added to law stating that NHDES cannot require a town with a population of 5,000 or fewer people to clean up an inactive, municipally-owned, unlined landfill if the town monitors the inactive facility and shows, through monitoring, that the facility is having no adverse impact on the environment. Result of "the Brady Bill".

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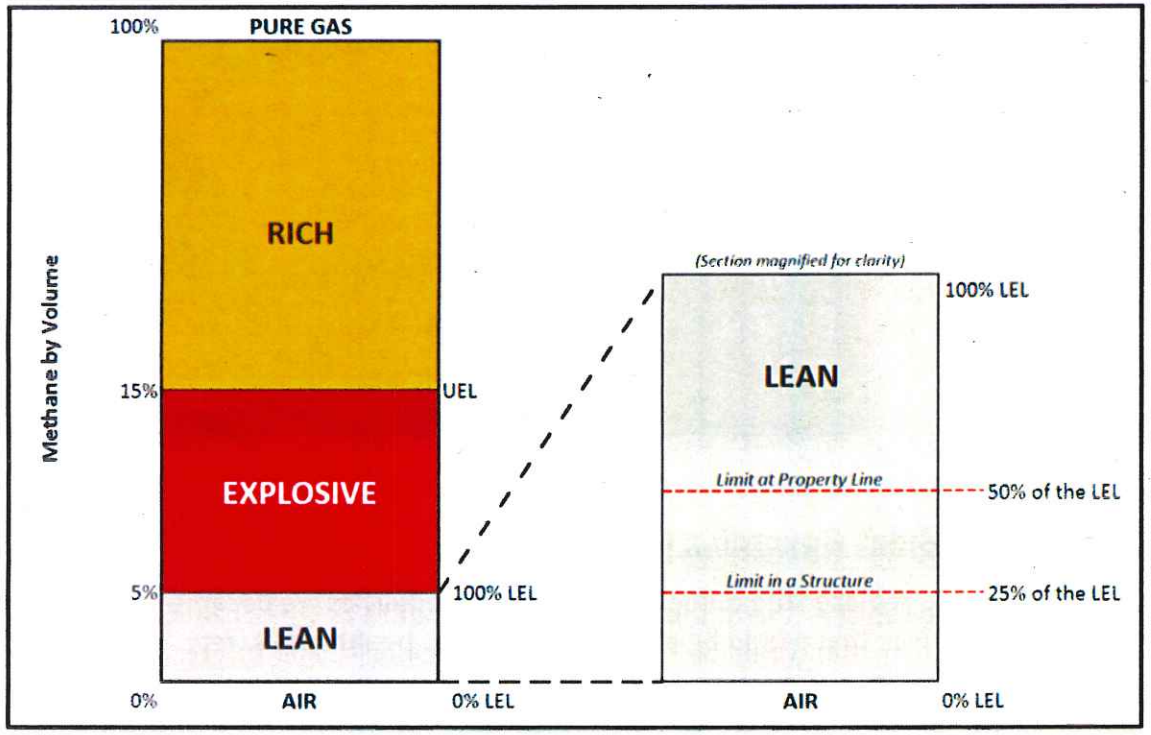
Methane Gas Monitoring as part of Post Closure Requirements at a NH Landfill



*A reading of 100% LEL is about 5% methane in the total volume of air. The grey section (image right) magnifies this 5% volume. On the magnified (grey) section, the two dotted red lines show the two regulatory thresholds that you need to be aware of as part of post-closure monitoring for a solid waste landfill. If the concentration of methane is equal to or greater than 50% LEL at the property line or 25% LEL in structures, you must notify NHDES.

Acronyms and Terminology

- **Concentration (Conc.)**: the amount of a substance in a given volume.
- **Groundwater (GW)**: water below the land/ground surface in soil or rock, including perched water separated from the main body of groundwater (abbreviated from Env-Sw 103.14).
- **Landfill (LF)**: a facility which collects and disposes of waste by landfilling methods including those that collect and stores waste indefinitely (from Env-Sw 103.32).
- **Landfill gas (LFG)**: the gas produced by decomposing or rotting waste in a landfill.
- **Leachate**: a liquid which has contacted or passed through solid waste (abbreviated from Env-Sw 103.34).
- **Lower Explosive Limit (LEL)**: the lowest concentration by percentage in air of a flammable gas or vapor in which an explosion can occur upon ignition at 25°C (78°F) at atmospheric pressure (from Env-Sw 103.41).
- **Municipal solid waste (MSW)**: means solid waste generated at residences, commercial businesses, or industrial establishments, and institutions (abbreviated from Env-Sw 103.47).
- **Volume (Vol.)**: the amount of space that an object or substance occupies.