Landfill Gas (LFG)

The composition of LFG depends on the type of biological activity that is occurring in your landfill (aerobic vs. anaerobic). The primary gasses produced during the aerobic process are carbon dioxide and water vapor, while the anaerobic process results in methane and carbon dioxide.

There are several concerns you should look out for when it comes to LFG:

1. Methane explosive characteristics - methane alone is odorless, but when mixed with the right combination of oxygen, a potentially deadly explosion can occur when ignited. The 5% LEL and 15% UEL refers to the percentage of methane in the air; the gas mixture becomes flammable when it falls within this range.

2. Trace chemicals found in LFG - trace amounts of toxic chemicals are usually low and diluted when the gas reaches the atmosphere and are not considered a hazard to landfill operators and nearby residents. However, it is important to know that these chemicals are present in low amounts.

3. Methane migration - methane can migrate into neighboring structures and result in an explosion. Some structures are leachate manhole pump stations and extraction piping is a significant safety concern. You should monitor basements, crawl spaces, and cracks in the flooring, conduits, trenches and areas that indicate vegetative stress.

We will continue this topic in our next issue and discuss other safety concerns such as confined spaces, the monitoring of LFG, and drilling within waste mass. We hope that you will use this basic information to do more research on your own to protect your landfill, and most importantly your employees.