



## Landfill vs. Modern Incineration

### Introduction

Landfill is the most common method of disposing waste with the theory 'out of sight and out of mind'. Incineration has been considered dangerous to our health and environment. In reality, the newest generation of incinerators are actually less dangerous and more environmentally friendly than any landfill process. The following compares these two options.

### Land Usage

#### Landfills

The amount of land wasted on landfills is an important consideration for small areas with large populations. They simply run out of room. A good example of this is the Fresh Kill landfill in New York City. It contains 2200 acres of land rising to 225 feet! This landfill is now full, so the garbage is dumped into the ocean.

#### Modern Incineration

Incineration reduces 90 to 95% of the volume waste. The remaining ash is sanitized and can be recycled or used as filler material in construction of roads.

### Disease /Odours

#### Landfills

The rotting garbage in landfills is a home and breeding ground for disease- carrying insects, rodents and animals

#### Modern Incineration

The incineration process converts the garbage to inert ash. The odours are greatly reduced and a disease source is eliminated.

### Explosion Dangers

#### Landfills

If not controlled, methane gas can explode. This has occurred at some landfills around the world.

#### Modern Incineration

The modern incinerator has many safety valves, flame monitors, relief valves and pressure switches to ensure safe operation.



## Water Contamination

### Landfills

Most new landfills are surrounded with plastic liners with clay back up that are designed to prevent any liquids entering the ground water systems. But shifting grounds and cracked liners allow liquids in the landfills to seep into the earth and contaminate ground water. Chemicals present in landfills are benzene, toluene, chloroform, vinyl chloride, carbon tetrachloride, sulphur and mercury. These chemicals are known to be harmful to humans.

### Modern Incineration

Incinerator destruction of waste prevents water contamination. All dangerous chemicals are rendered harmless by the pollution control devices.

## Greenhouse Gases & Global Warming

### Landfills

Global warming is caused by greenhouse gases, which include methane and carbon dioxide. Methane gas emitting from landfill is 21 times more potent than carbon dioxide in terms of its global warming potential. Emissions from Canadian landfills account for 20% of national methane exposure. Carbon dioxide emissions from Canadian landfills are estimated at 27 mega tonnes of which 20 mega tonnes are emitted annually.

### Modern Incineration

Dioxins and Furans are the main public concern of the incineration process. The correct pollution control devices attached to the modern incinerator bring their levels even lower than government regulations. These are carefully monitored in modern Incinerators to guarantee their emissions. No Methane emissions mean less greenhouse gases affecting the atmosphere thereby reducing global warming.

## Flare Stacks

### Landfills

The common method of getting rid of methane gas that has been created in landfills is using flare stacks. These large chimneys use a gas burner located at their base to burn off the methane gas as it enters.

In Ontario, a 2008 regulation was imposed calling for landfills larger than 1.5 million cubic meters to collect and dispose of methane gases through flare stacks.

### Modern Incineration

A modern incinerator will do a better job than a flare stack, because it renders all gases harmless.



## SaniFlame Inc.

Our modern SaniFlame system will combat greenhouse gases, water contamination, disease, wasted land and the danger of explosion.

It can use the methane gas from the landfill to fuel the combustion system.

Reducing the waste by 90 to 95% will allow existing landfills to operate for a much longer period of time, thus saving land and the cost of a new landfill site.

It is possible to use the heat coming from the SaniFlame Inc. to produce hot water or steam.



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### References

1. **Environment Canada** - Municipal Solid Waste and Greenhouse Gases, last reviewed 2010-05-20
2. **Staten Island Landfill: "Fresh Kill"** - Fresh Kill Landfill (1947-2001)
3. **Ontario Ministry of the Environment** - June 2008 #010-3086