Green Building

Green City Action Plan for Yerevan "Waste"(Nubarashen landfill)
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History of Nubarashen landfill

Was created about 50 years ago.

Area is about 60ha.

Located near Yerevan.

Receives 340 tons per day(102000 t/y).

Now landfill contains about 7.5 million tons of domestic waste.

Have three blocks A,B,C(A is already filled).

Disadvantages of Nubarashen landfill

Air pollution(waste smells bad).

Greenhouse gases(Nubarashen landfill uses flaring but they are not able to capture all the methane so part of it goes to the atmosphere and creates greenhouse effect).

Sanitary problems(good conditions for microbes to multiply).

Actions of Yerevan Municipality

Municipality of Yerevan signed a contract on 10 March 2009 with the Japanese Shimizu Corporation on Nubarashen Landfill Gas Capture and Power Generation project which will contribute to reduction of greenhouse gas emissions from the landfill and improvement of environmental and sanitary conditions.

International experience in the sphere of waste treatment

Composting

Incineration

Vermicomposting

Gas power generators

Ways to develop Nubarashen landfill

1.Sorting organic and inorganic waste.
2.Building a gas power generators.
3.Building a gas pressure station.

Methane formation

1. Aerobic.
2. Anaerobic.

What do we need for anaerobic methane formation?

1. No air.
2. Temperature range between 20-45 C(Mesophilic) or 49-70(Thermophilic).
3. Organic waste(most important).

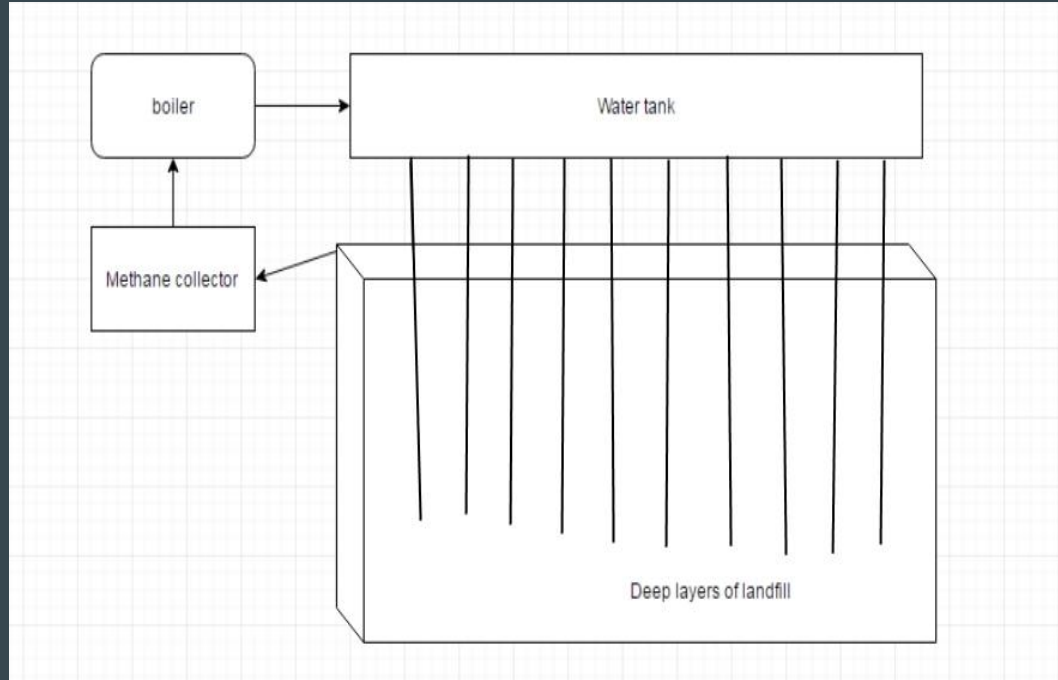These three factors exist at deep layers of Nubarashen landfill.

Solution

1. Install a GAG(gas engine generator).

2. Change mesophilic digestion to thermophilic.

HOW?

Heating system for Nubarashen landfill

Using the methane created by waste we can increase the temperature of deep layers. This will help us to.
1. Get more methane from the same volume of organic waste(get more electricity).
2. Accelerate decompostion process.

That's all.

Thank you for listening