

Project Details

France, Landfill for Municipal Waste

Client:

Public Company

Project Budget:

Confidential

Key Staff:

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Duration:

23 – 25/04/2012

Provided services

- Calculation of the BLP of the landfill, with the Pollux Consulting Software and with GasSim.
- Measurement of the biogas flow, pressure and composition on all the biogas collecting points and collectors of the landfill
- Regulation of the valves of all the biogas collecting sources in order to optimise the biogas extraction flows and quality
- Establishment of the biogas balance of the landfill in order to evaluate the potential of biogas valorisation

Introduction

The Client operates a landfill for municipal waste and industrial non hazardous waste in France. The operation started in 1996. In 2012, five cells are filled, accumulating about 1.500.000 tons of waste. The landfill is licensed till 2034. The Client installed a biogas extraction and collection system in the closed cells. The collection system is connected with a flare and a biogas valorisation plant. This facility operates two gasmotors with a cumulated power of 1.500 kW. The biogas extraction system is a combination of horizontal gas drains connected with vertical extraction shafts.

Objectives of the project

The Client asked Pollux Consulting to conduct an audit of the biogas extraction, collection and valorisation system of the landfill in order to evaluate the potential of improvement of the valorisation.

Services delivered

Based on the Client's data, Pollux Consulting did the calculation of the BLP (Biochemical landfill gas Potential) of the landfill, using its own software.

In a second phase, Pollux Consulting did a campagne of measurements of the biogas flow, pressure and composition on all biogas sources, collectors and at the blower station of the landfill. The results were compared with the results of the model.

The efficiency of the extraction system was evaluated by comparing the on site measurement results with the outputs of the model.

In a third phase, Pollux Consulting did an optimisation exercise by regulating the valves of the biogas sources in order to improve the flow and the methane content of the biogas.

Pollux Consulting also calculated the potential of an optimisation of the biogas production by re-infiltration of leachate, for a cell with a low biogas production.

Pollux Consulting evaluated the biogas extraction and collection system of the landfill by analysing the state of all the sources (shafts and horizontal draincollection pipes) and clusters, detecting failures in some pipes and local failures in the capping.

