

Case Study

RAINBOW DISPOSAL COMPANY

Industry: Municipal Solid Waste (MSW)
Problem: Odor Control

Multiple Odor Problems - One Solution

Business Overview

Rainbow Disposal Company is an employee-owned solid waste company located in Huntington Beach, California. The company employs more than 300 people and provides residential collections for about 70,000 homes in the vicinity, as well as collections for commercial entities such as apartments, businesses and industrial customers. The 20-acre Rainbow facility also provides for public dumping and household hazardous waste disposal. Within the facility, it also operates a Material Recovery Facility (MRF) and Transfer Station. (See Figure 1).

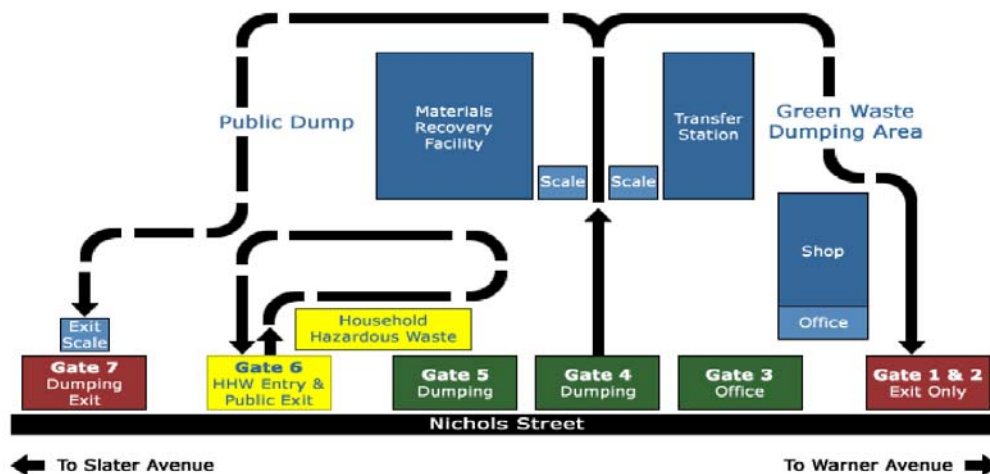


Figure 1: Rainbow Disposal Facility Map

Typically, waste is collected at residences, restaurants and other commercial sites and transported to the Rainbow facility. Waste is first dumped into a transfer station, where it is conveyed to the MRF where the recyclables are recovered. The green waste is transferred to the green waste dumping area and transported later to off-site facilities.

The Rainbow facility is in a close urban environment. A constant on-shore breeze from the nearby Pacific Ocean could send odors generated inside the facility directly to nearby neighbors. And the warm Southern California climate exacerbates the odor problem. Besides the understandable desire to be a good neighbor to local residents and businesses, Rainbow also wanted to ensure a comfortable work environment for its employees.

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Challenge

Odors at the Rainbow facility were being generated in several areas: the transfer station buildings where waste makes its first stop; the green waste area; and inside the MRF where recyclables are recovered. Odors could affect nearby residents and businesses, but also employees working inside the facility.

Traditional methods of odor control in such environments usually involve misting the area with some form of chemical that either reacts with or masks the odors. But the addition of water to waste adds huge weight to the material that will eventually be transferred to landfills—adding millions of dollars of cost annually to the operating budget.

Rainbow has tried as many as 20 different products to solve its odor problems. Then it tried BioMagic.

BioMagic Solution

BioMagic's M5 MicroVapor was tested on a recently emptied waste container from a restaurant. Such containers represent a worst-case scenario in the MSW industry as the combination of materials discarded by restaurants is usually quite foul. M5 MicroVapor was sprayed on the walls and floor of the container using a standard garden sprayer. Witnesses confirmed the immediate elimination of the odors in the waste container. On the strength of this result, Rainbow decided to test M5 MicroVapor in other applications around the transfer station and MRF.

Green Waste Area

The green waste area is outside and fully-exposed, so it is a significant source of odors. M5 MicroVapor was diluted with 100-400 parts water and distributed over the green waste area using a modified, portable snow blower. The ultra-fine mist allowed the M5 MicroVapor to interact with the airborne odor-producing molecules, eliminating odors that might otherwise have been carried outside the boundaries of the facility to the local neighbors.

Transfer Station

The transfer station is a semi-enclosed building, so the prevailing winds can take the odors from this facility into the surrounding neighborhood. To mitigate these odors, Rainbow staff used a high-pressure (1000 psi) misting system around the transfer station using a highly-diluted M5 MicroVapor and water mixture. The 400:1 dilution ratio is typical for this type of application.

Municipal Recovery Facility (MRF)

The MRF is a 50,000 square foot, semi-enclosed building where several dozen people separate the recyclable materials from what is destined for the landfill. Obviously, odor control for the benefit of personnel was important. While M5 MicroVapor was clearly a viable odor control solution, the challenge was how to apply it without adding water weight. First, an certified industrial hygienist certified that M5 MicroVapor applied in this environment posed no environmental or personal safety issues. So, the Rainbow engineering staff developed a system using a blower with a venturi nozzle to deliver the BioMagic M5 MicroVapor in an ultra-fine mist inside the buildings, virtually eliminating any added moisture to the waste.

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Results

Rainbow's willingness to test a new odor control solution proved to be a wide - ranging problem solver for ending odor complaints within this dense urban environment. The creativity and innovation of Rainbow staff in devising an effective and efficient ultra-fine misting solution was also key to Rainbow's overall success.

Rainbow achieved its impressive results while also lowering odor control costs, reducing cost of waste transport to landfills and providing a better work environment for employees. Rainbow's active community relations program has even more impact now that odor control problems are a thing of the past.

About BioMagic

We develop and manufacture engineered solutions for the control and elimination of organic waste odor and the reduction of solid waste. Our products are primarily used to control odor and infrastructure damage caused by hydrogen sulfide gas and other odor-causing compounds.

Simple, effective and environmentally friendly, our solutions oxygenate the setting—accelerating the natural cycles of waste elimination. Our bio-stimulants are equally effective in liquid or solid waste conditions.

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