



Beckman Coulter



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Company Background

Beckman Coulter was founded in 1935 in Pasadena, California. It is headquartered in Brea, California with facilities all over the globe. Beckman Coulter Diagnostics in Chaska, Minnesota, has around 1,000 employees. They manufacture diagnostic systems consisting of chemical test kits and equipment for biomedical testing in various settings such as hospitals, physician offices and reference laboratories.



"This summer, my internship provided me with the opportunity to pull knowledge from all of my different skill sets and put them together to really make a difference. I have learned so much about what it means to be in a professional setting, but more than that, this internship has confirmed that I am on the right career path. I am forever grateful." ~ NT

Project Background

Beckman Coulter Diagnostics wanted to improve their resource use in relation to other Beckman Coulter facilities. Initial data indicated they were generating around 400 tons of solid waste per year and consuming almost 6 million gallons of water and 3 million kWh of electricity. With this in mind, Beckman Coulter reached out to MnTAP for assistance to make the company more environmentally friendly through water conservation, energy efficiency, and waste reduction.

Incentives To Change

Beckman Coulter Diagnostics has a goal to become a zero waste to landfill facility. They are committed to minimizing their waste streams and diverting any remaining waste from the landfill to compost or recycling. In 2021, Beckman Coulter Diagnostics formed a sustainability team with an initial goal of reducing the waste sent to landfill by 15% by the year 2024.

recycled into decking. Expanded polystyrene foam (EPS or styrofoam), used for lightweight coolers and protection of items during shipping, is difficult to recycle because of its low density and high volume. Beckman Coulter purchased a shipping container to collect the estimated 10,000 lbs per year of EPS generated, and arranged for monthly collection by [Healthy People Healthy Planet Limited Alliance](#), a local non-profit startup that densifies it so it can be recycled into new products.

Switch to Reusables

Bottles of substrate solution for use with diagnostic machines are currently packaged and shipped to the distribution center using conventional disposable pallet packaging. Switching to returnable, reusable plastic pallet packaging will eliminate 59,000 lbs of wood pallets, cardboard, and plastic wrap annually. Working with the bottle supplier to provide empty bottles directly in the reusable plastic totes used on the filling line may be able to reduce an additional 5,600 lbs, while providing labor savings and avoiding ergonomic risks from unpacking the boxes and loading the totes.

Additional reuse opportunities are to upgrade tableware and culture bottles from disposable to reusable, and to reuse ice packs received with incoming shipments. Many of these waste reduction opportunities, as well as some recycling and composting projects, are eligible for grants from Carver County through their partnership with Waste Wise, which will make the payback times even faster.

SOLUTIONS

Increase Recycling

The medical industry uses plastic extensively for packaging, bubble wrap, and to preserve sterility. Surveys of waste bins identified twenty two distinct items, accounting for 65,000 lbs/yr of plastic that can be diverted from the landfill and sent to Trex, where it will be

Solutions

Composting Organics

Paper towels, napkins, food waste, and BPI certified compostable items generated in cafeterias and bathrooms adds up to 125,000 lbs of compostable waste per year. By eliminating individual trash cans and implementing a 3-bin system including recycling, compost, and trash, Beckman Coulter will be able to compost these materials and divert around 18% of their annual waste from the landfill.

Optimize Lawn Irrigation

With five buildings on the campus, Beckman Coulter uses 6 million gallons of water a year, about half from lawn irrigation. By adjusting watering schedules and installing a moisture sensor into the soil at a cost of around \$1,100, the use of the sprinklers can be diminished by at least 30%, saving 1.1 million gallons of water and \$11,000 annually.

“In her supporting role, Nicole readily acted on challenges, identified and seized new opportunities, and always displayed a can-do attitude. She asked the right questions to accurately analyze solutions, acquired data from multiple sources when solving problems, and weighed the risks and benefits of different solution options. We were thrilled with Nicole’s contributions to help us accomplish our program goals.”

*~ Bryndon Lembke
Senior Manager, Environmental Health & Safety*

Install Strip Door

A chilled room in the warehouse has a large well insulated door, but during the loading and unloading process, the door must remain open, allowing cooled air to escape. A PVC strip curtain installed behind the existing door would reduce heat exchange by 80–90%, while still allowing forklifts to pass. This would save 6,300 therms, and \$6,000 per year.



Recommendation	Annual Reduction	Annual Savings	Status
Increase Recycling	75,000 lbs	\$7,400	Partially implemented
Switch to Reusables	146,000 lbs	\$170,000	Recommended
Compost	125,000 lbs	\$1,850	Implementing
Optimize Irrigation	1.1 million gal water	\$11,000	Implementing
Install Strip Curtain	6,300 therms	\$6,000	Implementing

MnTAP Advisor: Jane Paulson, Senior Engineer