



Project Overview

Industrial Placement Intern: Meghan Ray

Major: Chemical Engineering with a Biological Emphasis

School: Missouri University of Science & Technology



Company Background

Procter & Gamble (P&G) Pet Care produces both Iams and Eukanuba dog and cat food. The plant in Aurora, Nebraska is responsible for producing enough of both brands to supply the western United States and Canada with 47 varieties of dry dog food and 31 varieties of dry cat food. The plant operates 24 hours a day, 7 days a week, 355 days a year and employs 160 workers to accomplish this job.

Project Description

The objective of this project was to help the plant reduce its waste. The intern's projects included alternate disposal of waste water sludge; investigating parts washers; evaluating water consumption; recycling scrap electronics, hard hats, and stretch wrap; and installing a baler to allow the plant to recycle waste bags. The intern also conducted a reassessment of previous work conducted in 2009.

Pollution Prevention Benefits

The intern identified several opportunities for the plant to divert waste streams from the landfill, including composting waste water sludge and recycling stretch wrap and used bags. The intern also identified source reduction of the hazardous chemical potassium hydroxide used in the parts washer by finding a suitable replacement and helped the plant recycle electronic scrap and hard hats. The potential pollution prevention benefits from the intern's summer projects are summarized in Table 1 below.

Table 1. Potential Pollution Prevention Benefits

P2 Opportunity	Annual Cost Savings	Annual Waste Reduction	Type of Waste
Recycle old hard hats	Negligible	80 pounds	Solid
Utilize electronic scrap recycler	\$2,200	1,000 pounds	Hazardous
Compost waste water sludge	\$25,000	1,144,000 pounds	Solid
Install Bio-Circle parts washer	\$930	240 gallons (2,000 pounds)	Hazardous
Install water meters and fix fire leak	\$13,600	4,824,000 gallons	Water
Utilize bag baler	\$40,000	290,000 pounds	Solid
Recycle stretch wrap	6,900	432,000 pounds	Solid
Total	\$88,630	1,866,000 pounds 3,000 pounds 4,824,000 gallons	Solid Hazardous Water

Additional indirect or intangible benefits include:

- Reduced employee exposure to hazardous waste
- Improved employee involvement in sustainability efforts
- Eliminating approximately 900 metric tons of CO₂ equivalents
- Improved company image through reduced landfilling