Case Study: Campbell Soup Company

| Location:  | Maxton, NC (Robinson County) |
| Industry:  | Canned Food (SIC 2033) |
| Pollution Prevention Application: | Hazardous and Solid Waste Reduction/Water Conservation |
| Annual Savings: | $1.2 million |
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Background

The Campbell Soup Company’s Maxton plant manufactures heat-processed canned soups and other canned food products. The preparation of these foods involves combining various ingredients in pre-processed and fresh forms. The principle ingredients include vegetables, meat, poultry, dairy products, flour, starches, seasonings, fats, and tomato paste. Some vegetables are processed from their raw form, which involves cleaning, peeling, dicing, and sizing before final washing. Other vegetables are delivered to the plant pre-processed and in bulk. The canned food manufacturing process includes blending, preheating, filling, heat processing, cooling, and packaging. Container manufacture also takes place at the Maxton plant. Currently, the plant produces about 33 million cases of product each year.

Waste Reduction Activities

Campbell Soup Company developed a corporate-wide pollution prevention program that emphasized water conservation, waste minimization, and solid waste recycling. Three main projects have been instituted as part of the program.

- The first project involved the recycling of solid waste and scrap material from the canned food and container manufacturing operation. Recycled items include vegetable waste, cardboard, metal drums, scrap metal, wooden pallets, and fiber drums.
  - Vegetable waste from the soup manufacturing operation is recycled as hog feed. The vegetable waste is transferred from a collection hopper into the hog farmer’s truck, which is equipped with steam spargers to sterilize and cook the material on-site.
  - Recyclable cardboard is baled and then hauled by the plant’s solid waste hauler to a local recycling facility.
  - Wooden pallets and ingredient drums are returned to their suppliers.
  - Scrap stainless steel, 55-gallon drums, and various other scrap metals are sold to a salvage company. In addition, copper and tin plate scrap from the can manufacturing operation are reused in process.

- The second project involved a can enamel waste reduction program. Several steps were taken to reduce the amount of enamel waste in the can manufacturing process.
  - An inspection program was instituted to detect leaks and spills.
  - Scrapers which were installed to dry-clean enamelling equipment eliminated the need for solvent baths.
  - Enamel was filtered and reused where possible. Bulk delivery of enamels and thinners in returnable containers was arranged with vendors.
• The third project involved an improved water use program which focused on dry cleaning floors and equipment.
  – Process modifications included installation of a flow meter and elimination of scrap fluming.
  – Operation policy changes to reduce water use included a common sense program of turning water off when it was not needed as well as continuous maintenance/housekeeping instead of once a day.

**Waste Reduction**

The recycling program has resulted in recycling 70 percent of the solid waste and scrap material produced. For the period 1989 to 1992, the can enamel waste reduction program has reduced the amount of enamel burned in the boiler by 80 percent. Of particular note is that the water conservation program has resulted in a 50-percent reduction in water use per production unit between 1985 and 1992, a period where plant production more than doubled.

**Annual Savings**

The Maxton facility’s solid waste recycling effort saves the plant over $600,000 per year in landfilling costs. The sale of scrap stainless steel, 55-gallon drums, and various other scrap metals generates approximately $18,000 annually. Reuse of the copper and tin plate scrap from the can manufacturing operation saves approximately $375,000 annually. The reduction of enamel and the bulk delivery of thinner and enamel waste have resulted in an annual savings of approximately $50,000. The water conservation program has saved $125,000 annually in operating costs.