

# Hiland Dairy Sustainability Case Study: Chandler Initiatives

## Overview

Hiland Dairy's Chandler plant has demonstrated sustainable practices since 1980, when it first adopted innovative water recycling. Later, the management team demonstrated a commitment to environmental stewardship through waste recycling strategies for tea bags used in brewing. Two primary initiatives—the wastewater recycling program and the tea bag recycling/soil amendment program—showcase how environmental and economic benefits can align.

## Wastewater Recycling Program

Hiland Dairy's plant in Chandler, Oklahoma, located in Lincoln County near the historic Route 66, plays a key role in the local economy, producing a variety of dairy products. Given the plant's significant water consumption, sustainable water management became a critical focus

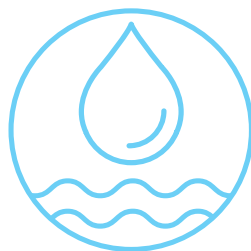
## Approach

The facility acquired 620 acres near the plant, dedicating 280 acres to a wastewater treatment system. The system treats 250,000 gallons of wastewater daily through microbiological processes in lagoons, aeration ponds, and holding ponds, with a total capacity of 28 million gallons.

Four irrigation pivots now irrigate the farmland using treated wastewater, producing feed crops for local cattle. This initiative also eases the burden on the local municipal water treatment plant, although it does not reduce the Chandler facility's overall water usage.

## Results

- **Water Recycling:** 250,000 gallons of wastewater treated daily, equating to 7.5 million gallons monthly.
- **Municipal Impact:** A 70% reduction in the plant's impact on municipal water treatment systems.
- **Agricultural Yield:** 2,033 tons of feed crops produced annually.
- **Economic Returns:** Consistent positive return on investment (ROI), validating the financial sustainability of the initiative.



# Tea Bag Recycling Initiative

Hiland Dairy purchased an additional 340 acres of land in addition to the 620 they had initially purchased after constructing and housing their wastewater treatment system. This land was unused, and the soil was degraded, with abandoned oil wells and dead trees. The team sought a way to rehabilitate the land so that it could grow feed crops.

## Approach

The solution emerged through creative thinking: Why not use the tea bags used in the brewing and bottling of Hiland's Red Diamond Tea to enrich the soil? Laboratory tests confirmed that the tea bags contained high levels of phosphorus, nitrogen, and potassium, making them ideal for this purpose.

After clearing the land of dead trees and abandoned oil wells, and with a \$30,000 investment in equipment, the plant began shredding and spreading the tea bags across the cleared acres. Crabgrass, Bermuda grass, and ryegrass were planted to enhance soil health and provide high-quality forage for livestock. The soil is regularly tested, and crop adjustments are made to maintain optimal nutrient levels.

## Results

- **Landfill Waste Reduction: 150 tons diverted from landfills each month, eliminating 2,300 tons annually.**
- **Cost Savings: \$50,700 annually in landfill fees.**
- **Soil Health: Enhanced soil fertility and reduced reliance on chemical fertilizers.**

## Environmental and Economic Impact

The Chandler plant's initiatives demonstrate the synergy between environmental responsibility and economic success. The wastewater recycling and tea bag programs reduce environmental strain, lower operational costs, and improve community relationships by easing municipal water system demands.

## Results Summary

- **Wastewater Treated: 7.5 million gallons per month.**
- **Municipal Impact Reduction: 70%.**
- **Landfill Waste Diversion: 150 tons per month.**
- **Cost Savings: \$50,700 annually.**
- **Agricultural Production: 2,033 tons of feed crops annually.**

