

# The Dial Corporation

CASE  
SUMMARY

6



## THE DIAL CORPORATION

Fort Madison, Iowa  
Lee County

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### The Company

The Dial Corporation, a subsidiary of the Henkel Group/Germany, is headquartered in Scottsdale, Arizona, and is one of America's leading manufacturers of consumer products. The Fort Madison plant specializes in Armour® Star canned meats and food products. The plant has more than 500 employees to help produce shelf stable goods such as canned meats, microwavable meals, dried beef and consumer sized packages of corn starch.

### Project Background

The Dial Corporation produces its own potable water and treats its own wastewater. Well water is drawn into the plant for cooking and product makeup. The wastewater exits the plant and enters a series of screens for primary treatment. The water then flows into a fine bubble aeration lagoon and clarifier for secondary treatment before being discharged to the Mississippi River.

### Incentives to Change

Wastewater treatment in general is a complicated, dynamic process. Dial would like to identify critical control variables (CCV) for various process wastewater conditions that will optimize treatment results and reduce operating costs, as well as use existing data to prepare tables and graphs to support findings. Currently, operators are without a CCV list and are forced to rely on the "usual" ranges for process control. The operators could use a defined CCV list for help in narrowing down the source of a problem faster and more efficiently.



### Results

#### 1. Nutrient Addition: \$33,285

The microorganisms that break down the Biological Oxygen Demand (BOD) in the wastewater are currently nitrogen deficient. The nitrogen deficiency causes an upset in the clarifier that must be counteracted by the use of polymer. A nitrogen addition trial period indicated that the polymer use can be minimized if the proper nutrients are added. This project would require the purchase of a Total Carbon analyzer for real time data acquisition.

#### 2. Waste Activated Sludge Control: \$17,493

The amount of sludge produced by a wastewater treatment system depends on the type of system. Dial's system was designed for extended aeration and currently has a high sludge production. By

simply lowering the amount of daily wasted sludge, sludge production will be decreased and thus sludge hauling costs will be reduced. This project, however, cannot be recommended without the implementation of the Nutrient Addition project.

**3. Aeration Lagoon Blower Control: \$17,556**

The aeration lagoon, put online in July 2003, is equipped with fine bubble diffusers and multiple blowers, resulting in an efficient oxygen transfer. The Dissolved Oxygen Uptake Rate (DOUR) tests performed on the aeration lagoon indicate a sufficient amount of oxygen in the lagoon. By reducing the number of blowers used, the electricity savings to The Dial Corporation could be as high as \$17,556 annually without compromising water quality.



**Project Summary Table**

Project Description	Environmental Impact	Economic Cost Savings	Status
Nutrient Addition	8,000 lbs solids/year; 19,000 lbs polymer/year	\$33,285/year	Recommended
Waste Activated Sludge Control	823,219 gal/year	\$17,493/year	Recommended
Aeration Lagoon Blower Control	362 MW-h/year	\$17,556/year	Recommended