

Thermaco[®] **SUPERCEPTOR**[®]



SuperCeptor[®] S-2750

Correctional Facility Controls Kitchen Effluent

Calhoun State Prison is a 1,240 inmate medium security men's prison located 30 miles west of Albany, Georgia. Although the facility has only been in operation for five years, effluent compliance problems plagued the facility. The prison was serviced by a 2,500 gallon grease trap; however, a large quantity fats, oils and grease as well as heavy loads of solids were being dispatched into the sewer system. This was causing frequent back-ups in the system as well as clogging of a city-owned lift station located across the street from the prison.

According to a spokesman for the Georgia Department of Corrections, "I'd say 75% of our problems were caused by effluent grease from the kitchen. The effluent emptied into the lift station and completely stopped it up with grease & oils around once a month. Grease-laden solids from the kitchen & prison were wrapping themselves around the pumps, impeding pump operation. The back-ups were also causing occasional grease overflows in nearby ponds."

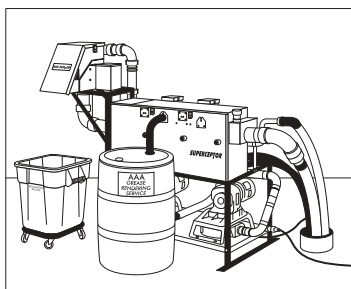


*SuperCeptor® S-2750 Installed In
Calhoun State Prison, Morgan, GA*

After enduring heavy fines from the City (around \$30,000 a year) and rising costs associated with pumping out their existing grease trap every 6-8 weeks, it was decided take action in order to alleviate the problem. It was decided that the prison could take charge of the situation by installing both a bar screen to handle solids in the prison's gray water and a SuperCeptor S-2750 system to handle kitchen waste flows. Not only would the SuperCeptor remove and collect the fats, oils, and grease from kitchen flows, but would also remove the coarse solids found in the kitchen effluent. The bar screen would remove solids coming from the prison waste flows.

Since these measures were installed in late 1998, the SuperCeptor is removing between 55 and 82 gallons of grease & oils from the kitchen effluent each week. In addition, the Big Flipper® Coarse Solids Removal System is removing up to three 55-gallon drums of dewatered coarse solids from the kitchen each week. The lift station adjacent to the prison has not stopped up once since the installation, either.

"The City seems to be very happy with what we have done to control our prison trash and kitchen effluent. The fines have stopped, we've only pumped out the grease trap once (ed. note: this was to see if any solids had accumulated, which they hadn't), and we are glad our relations with the city have improved. Our BOD (Bio-Chemical Oxygen Demand) dropped from an average of 375 to 250 mg/l, and we are consistently below the FOG (fats, oils and grease) limit of 15 mg/l imposed by the City of Morgan. It's good to be back on speaking terms with the city officials."



SuperCeptor Model S-2750



Prison Clears Up Security Clearance Issues

High Desert State Prison in Indian Springs, NV is a brand new, state of the art correctional facility. Opened in 2000, the medium security facility currently has an inmate population of 1,800. The maximum population is 2,100.

Servicing these 1,800 guests of the State is a kitchen that generates roughly 6,000 meals per day. The prodigious amount of grease produced by the kitchen and how to deal with it became an issue early on during the planning & design stage of the prison.

Firstly, the remote location of the prison meant that sewer flows had to be treated on-site using an aerated lagoon and three standing facultative ponds. To prevent grease & oils from reaching the lagoon and fouling up these treatment works was one problem that needed to be dealt with.

One issue standing in the way of pretreatment using conventional methods was that of security. Every time a vehicle enters the prison walls, it must be thoroughly inspected as a security measure. If a standard 2,500 gallon grease trap was installed, each time the pump truck needed to pump the trap out it would have to be thoroughly inspected. This time consuming process (and admittedly unattractive job) was deemed important enough to try alternate methods of pretreatment. A Big Dipper® SuperCeptor® S-2750 automatic grease, oils & coarse solids removal system was specified into the plans, and during construction was installed.

The SuperCeptor system is like having an on-site pump truck servicing an existing in-ground interceptor. Using diaphragm lift pumps, coarse solids and greasy effluent is lifted to the SuperCeptor system. The Big Flipper® component, a rotating drum screen removes coarse solids, and the Big Dipper component traps and removes grease & oils. Cleaned water passes out of the SuperCeptor and back into the grease trap, whence it travels on to the on-site treatment system.

How well is the system working? According to Patrick Carey, the wastewater treatment operator for the facility, it is working quite well. "The system removes, on average, 40 gallons of grease a week. It also removes roughly one 55-gallon drum full of food solids per day. We'll spend about one hour each day taking care of the system. From my standpoint as the guy who gets water to the prison and cleans it up again when it comes back out, it works great." And the prison guards do not have to inspect any pleasant smelling pump trucks going in or out of the prison.



Correctional Facilities Solve Wastewater Problems

This article reprinted from Correctional Foodservice® magazine. A Big Dipper® SuperCeptor® proved to be the answer that the Puerto Rico Correctional Administration was looking for.

Imagine twin prisons, each with 400 inmates plagued with persistently clogged sewer lines, offensive odors, and overburdened grease traps from an approximate 35,000 gallon-per-day grease flow. Lift stations at both locations were always full of grease, causing frequent freezing of the pump level controls.

And, if that wasn't enough, vast amounts of fats, grease, and solids in the kitchen wastewater was threatening a disastrous malfunction of the facility's entire private sewage treatment system.

That was the situation in mid-1995 at the Sabana Penal Camp and the Sabana Hoyos Correctional Institution located at Arecibo, Puerto Rico. Something needed to be done-and fast.

The Puerto Rico Correctional Administration's engineering department, headed by Vicente Ortiz, recognized the urgency of the problem and undertook to evaluate a carefully engineered solution offered by Sani-Plant Company, Inc. of Trujillo Alto, Puerto Rico.

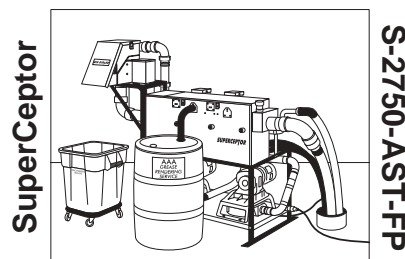
The plan specified the installation of a Big Dipper SuperCeptor® pretreatment system at each facility. From past experience, the installing company knew their recommendation was sound because the heart of the SuperCeptor consists of a unique automatic water and grease separator with tremendous capability. The highly efficient separation system removes nearly 100% of the free-floating grease in the kitchen flow and automatically places it in a container for proper disposal. Solids are handled in a like manner.

The authorities sanctioned the recommendations and Sani-Plant installed the systems without delay. An immediate benefit was experienced through a dramatic downward shift in treated effluent discharge levels, and both systems are now operating well within the strict requirements of local sanitary codes and federal EPA regulations.

Today, each SuperCeptor is recovering approximately one 55-gallon drum of grease each week for disposal by private rendering companies. Most importantly, however, is that grease-clogged sewer lines are gone, along with the unpleasant odors. The pump level controls at the lift station no longer freeze as well.



Pictured is one of two Big Dipper® SuperCeptor® grease/water separator systems located at the Sabana Hoyos Correction Institution and Sabana Penal Camp in Puerto Rico. The units are in an outdoor location for pretreatment of kitchen water.



"Just give me the facts, ma'am." Joe Friday

Why?

The Federal Clean Water Act, as amended, provides for the imposition of effluent limitations that requires treatment for wastewater discharge. Under this act, compliance with applicable limitations is achieved under



a national permit program (NPDES, National Discharge Elimination System). NPDES discharge permits have to be obtained and renewed. Concurrent with renewal of these NPDES permits, the permitting agency implements more rigorous control. Sampling and monitoring of treated effluent discharge require monthly NPDES reports which establish a record of performance within the discharge permit limitation. Permit holders must implement a compliance program.

With increasing frequency NPDES permit holders like Governmental or Private Wastewater plants or On-site sewer treatment plants initiate compliance programs which include surcharging restaurants for excessive FOG and BOD discharge. To limit or minimize these expensive surcharges, restaurant owners are using source pretreatment for recovery of kitchen grease. Automatic Grease/Oil Recovery Systems are the viable means of assisting in the achievement of these applicable regulated effluent limitations and the reduction of surcharging.

Automatic pretreatment point source Grease/Oils Recovery Systems offer other benefits, such as efficient dependable service, daily recovery of nearly 100% of renderable grease, oils, and fat. Course food solids, too, are removed from high volume kitchen wastewater. These Recovery Systems prevent drain line clogging and helps users comply with local sanitary district codes and EPA requirements.

Source pretreatment using BIG DIPPER® Kitchen Grease/Oils Recovery units is a proven cost effective effluent control system which reduces excessive FOG and BOD discharge.

(Joe, these are the facts! Get it? Got it!)

Institutional and Large Commercial Kitchens

These large, multi-purpose kitchens utilize a wide range of warewashing and food preparation equipment. The increased number of grease bearing point sources generally mandates use of central-type automatic grease removal systems such as the Big Dipper AST or Superceptor® systems. For example, a Big Dipper W-1000-AST (100 gpm) system servicing a 300 bed hospital kitchen typically removes a barrel of grease every 10 to 14 days.

Tip: Rarely seen in full service kitchens, tilt kettles which are used to cook large volumes of cooked meats, soups, sauces and

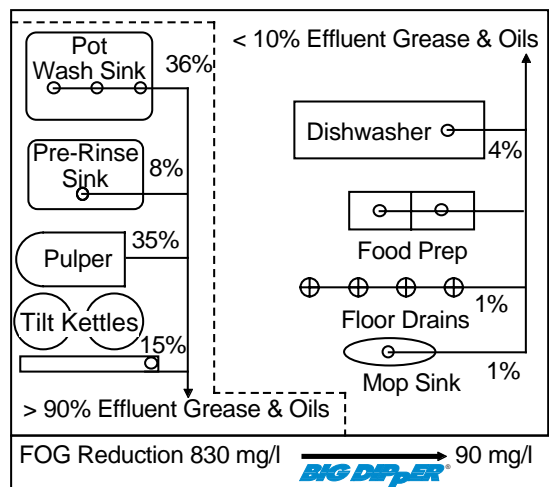
other foods are installed in more than 70% of institutional kitchens. Tilt kettles can put large volumes of greases and foodstuffs into the drainage system. Large institutional kitchens such as prisons, hospitals, and college cafeterias also frequently incorporate potato peelers, pulpers, bakery sinks, wet hoods and other equipment that can discharge high volumes of greases and other foodstuffs into the drainage system. When specifying central removal systems for institutional kitchens, determine the maximum drainage flow value and provide at least 100 pounds (45 kg) of grease removal capacity per day.

Special Food Preparation Sites

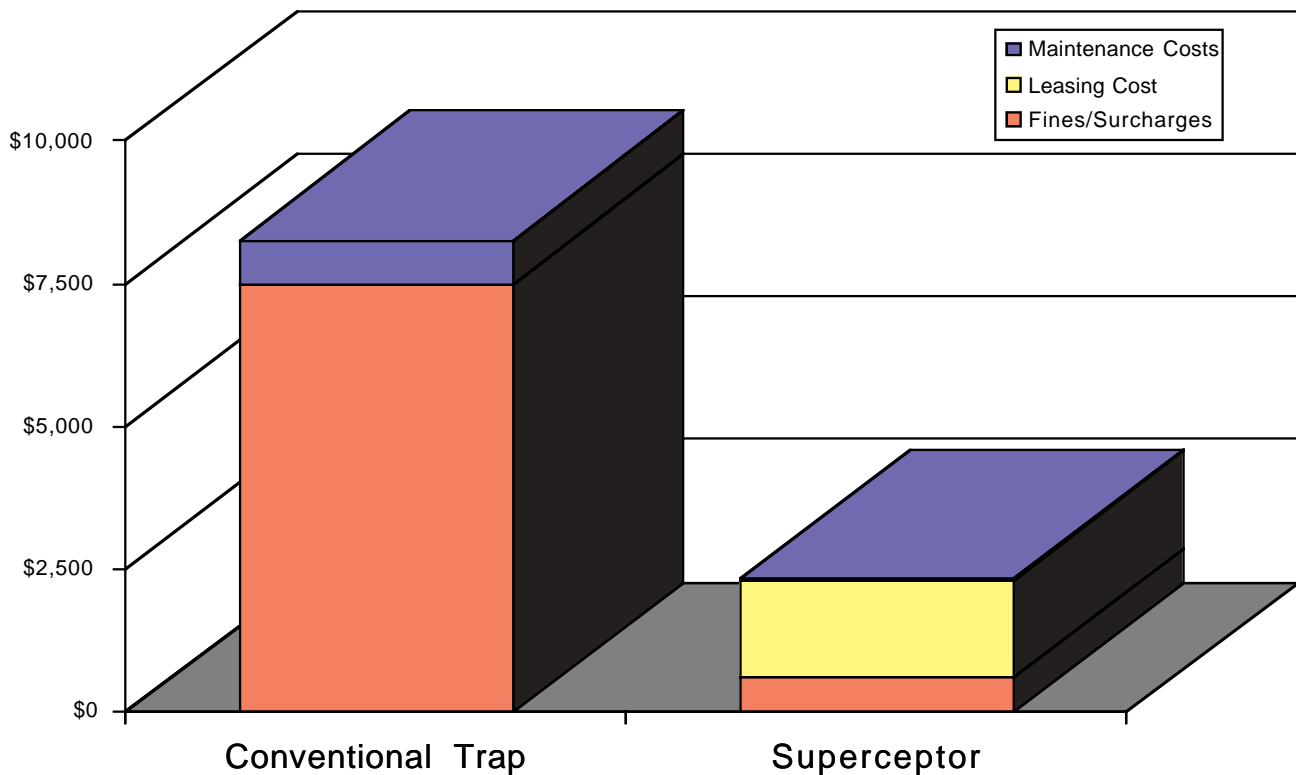
Casinos, military mess halls, large correctional institutions and food processing plants often have a negative effect on a sewer systems. For example, casinos serve high volumes of food 24 hours per day. The casino is often in a location such as a waterfront which requires the sewage to be pumped through one or more lift stations. This leads to high sewer maintenance costs and high effluent FOG numbers. Automatic grease removal systems are steadily gaining favor with casino operators because of their round the clock operation. More than 40% of all U.S. casinos are equipped with automatic grease removal systems ranging from the smallest Big Dipper units to the largest Superceptor systems.

Tip: When selecting an automatic removal systems, determine the peak flow volume. The gallons per day figure is not as important as determining the peak flow value.

In large hotel or cafeteria kitchens the addition of tilt kettles can lead to large inputs of greases and foodstuffs into the drainage system. Large institutional kitchens such as prisons, hospitals and college cafeterias can incorporate potato peelers, pulpers, bakery sinks, wet hoods and other production equipment that can discharge greases and other foodstuffs into the drainage system.



Monthly Cost Comparison



Cost estimates are based on a 750 bed correctional facility serving 3 meals per day. Lease rate and performance data are based on SuperCeptor® Model S-2750.

Conventional Trap

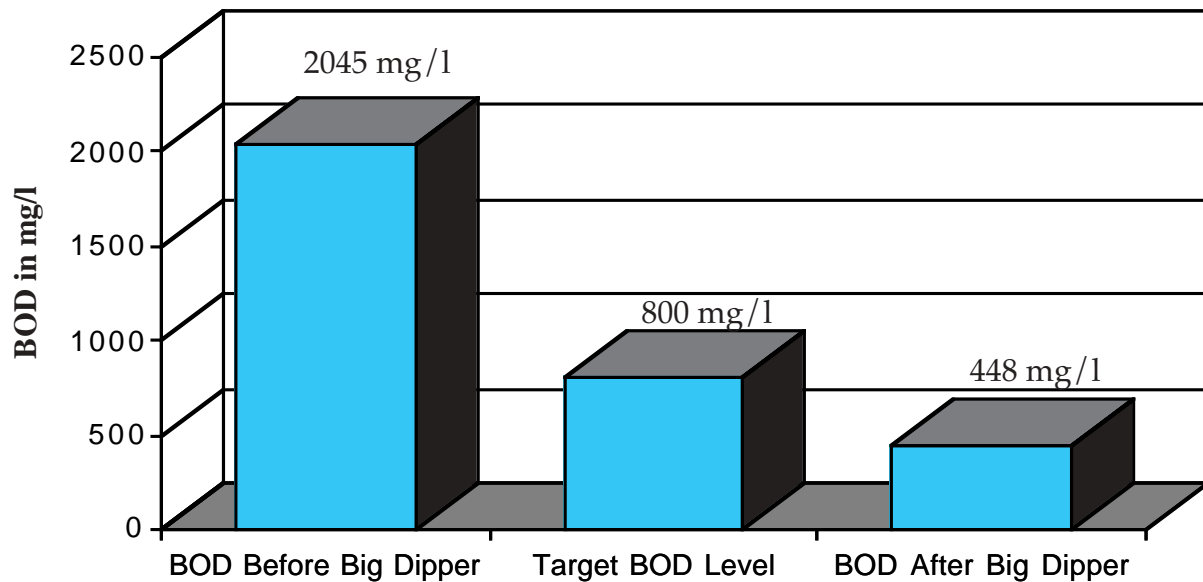
Grease Trap Pumping Charges	=	\$ 750 per month
Sewer Surcharges/Fines	=	\$7500 per month

Superceptor

48 Month Lease Cost	=	\$ 1704 per month
Sewer Surcharge (92% Reduction)	=	\$ 600 per month
Maintenance Cost	=	\$ 25 per month

Performance

SuperCeptor® BOD Reduction Capabilities



Grease Trap Effluent

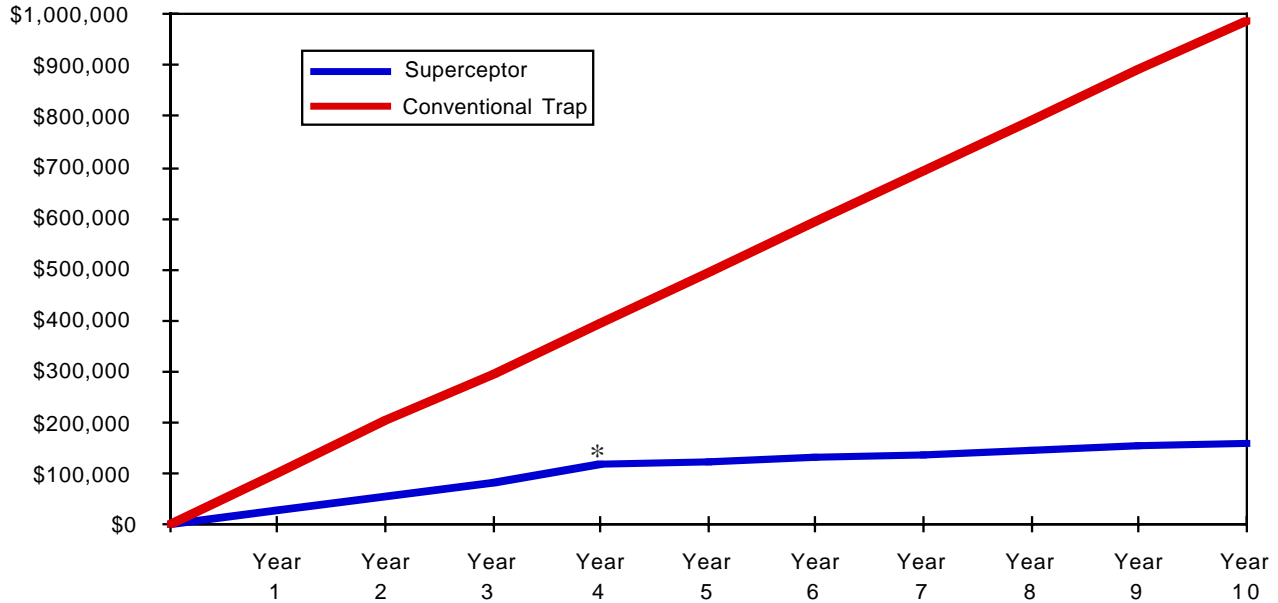
When the on-site sewage pretreatment facility at Cypress Bayou Casino in Charenton, LA became significantly overloaded, the building superintendent look to solve the problem quickly and permanently. The solution was found with a **SuperCeptor S-2750**.

BOD Level Before Superceptor.	.	.	2045 mg/l
Target BOD Level.	.	.	800 mg/l
BOD Level After Superceptor.	.	.	448 mg/l

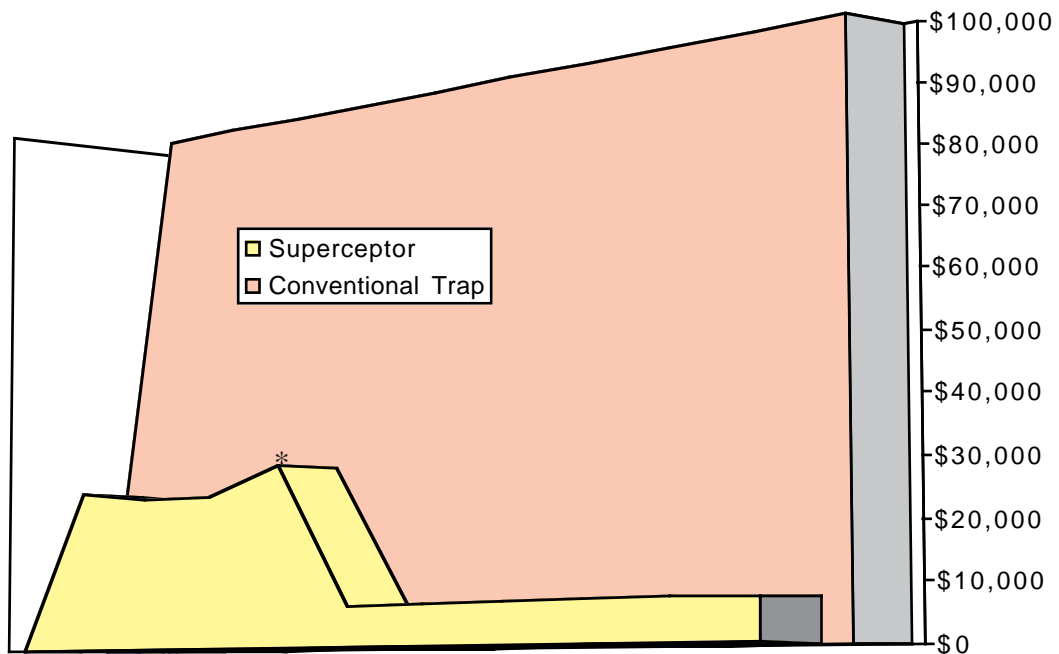


10 Year Cost Comparisons

Total Cost Comparison



Year by Year Cost Comparison



*Lease ends and facility takes ownership of SuperCeptor®