GCA

GULF COAST WASTE DISPOSAL AUTHORITY HOUSTON, TEXAS

ANNUAL REPORT 2009

It is the mission of Gulf Coast Waste Disposal Authority to protect the waters of the State of Texas through regional waste management practices which are environmentally sound and economically feasible.

Gulf Coast Waste Disposal Authority (GCA) spent 2009 celebrating its 40th Anniversary. One of the highlights of the year was a reception held for what Chairman Mark Schultz referred to as "the important people who contributed to the creation and success of this unique organization."

Charles "Charlie" Ganze, General Manager, pointed out that Schultz himself has been on the Board for more than 30 years, most of that time as Chairman. Schultz responded that he "never thought when I was first asked to represent Chambers County on this Board that I would still be serving in 2009."

CHARLES GANZE
GENERAL MANAGER

The Chairman drew special attention to the early leaders of GCA. The late Maj. Royal Hatch, first Board Chairman, and the late Jack Davis, first General Manager, worked to make sure that this new and unique organization survived and served a useful function in protecting the environment.

"Jack and those early Board Members built a brand new organization which has become a lasting legacy," Schultz said.

Schultz described Charlie Ganze as the longest serving staff member and a leader, a source of inspiration, and as a friend.

Schultz summarized for those at the reception that each of them had served in a leadership or consultant position to make GCA a major resource for waste management. “We could not have accomplished our goals without you,” he said.

“I believe that GCA and its employees have made a positive contribution to improving the environment,” Schultz concluded.

Just a few of the milestones touched on by the Chairman were:

1969 The Texas Legislature creates Gulf Coast Waste Disposal Authority.

1971 Planning begins on the 40-Acre Industrial Wastewater Treatment Facility.

- Approval is received on what will become the Washburn Tunnel Industrial Wastewater Treatment Facility.

1974 The U.S. Environmental Protection Agency grants GCA a permit to operate the Bayport Industrial Wastewater Facility.

1978 Contracts are awarded for construction of the Blackhawk Regional Sewage Treatment Facility.

1979 The first loads of waste are received at the new Campbell Bayou Industrial Solid Waste Disposal Facility.

1997 The Odessa South Regional Treatment Facility in Odessa, Texas, receives its first wastewater flow.

2001 Blackhawk Facility receives one of the first Platinum Awards in the nation from the Association of Metropolitan Sewerage Agencies (AMSA). The next year Blackhawk was joined by the 40-Acre Facility which also earned a Platinum Award. These awards are for perfect compliance with state and federal operating permits for a period of five years. AMSA is now known as the National Association of Clean Water Agencies.

J.M. MARK SCHULTZ
CHAIRMAN OF THE BOARD

BLACKHAWK FACILITY

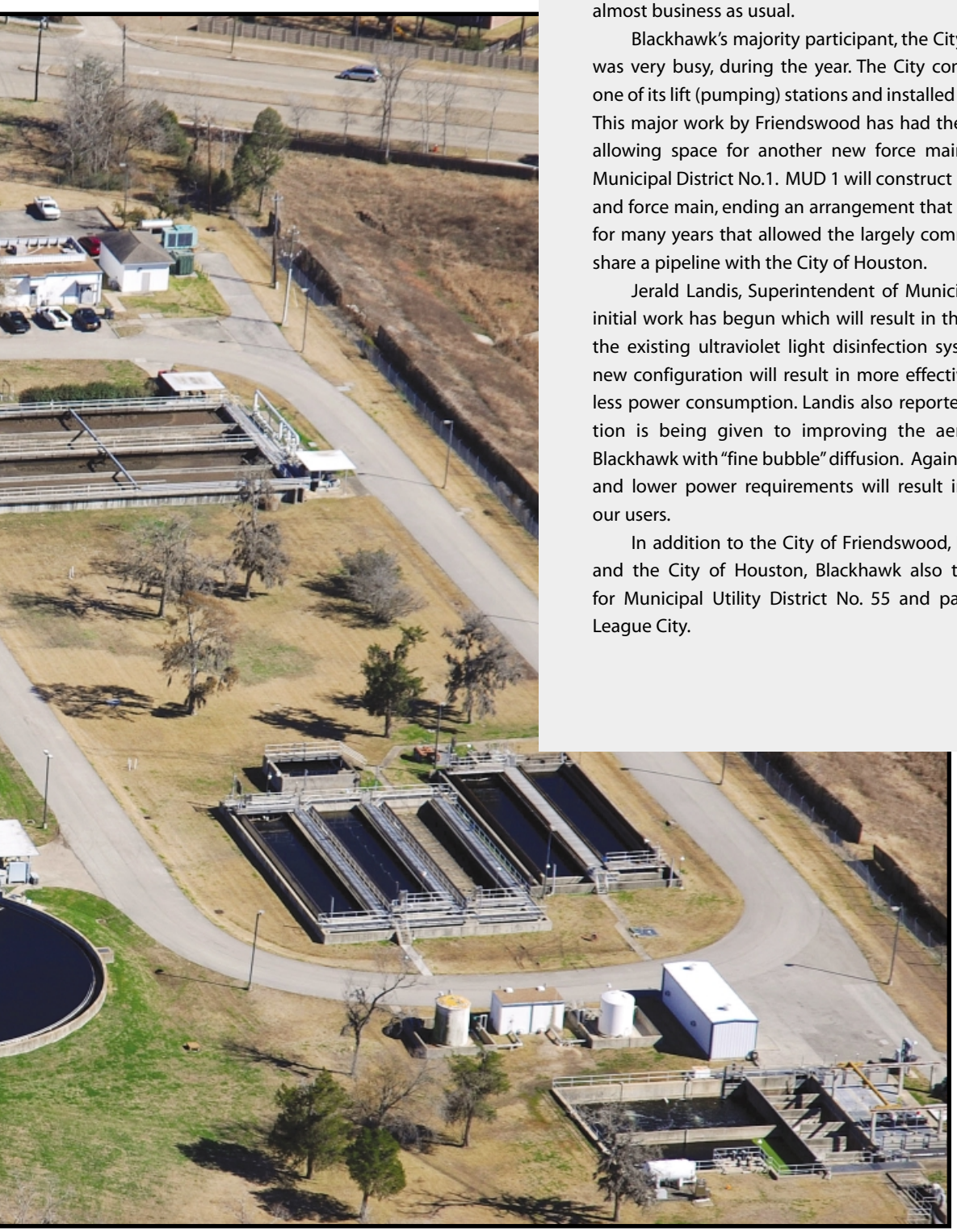
JERALD LANDIS
SUPERINTENDENT OF
MUNICIPAL SERVICES
BLACKHAWK FACILITY

It was a quiet year for the Blackhawk Regional Wastewater Treatment Facility in Friendswood, Texas, and the staff is glad of it. Of all the Gulf Coast Authority operations located in Harris and Galveston counties, Blackhawk was the least affected by Hurricane Ike. Once power was restored, it was almost business as usual.

Blackhawk's majority participant, the City of Friendswood, was very busy, during the year. The City completely replaced one of its lift (pumping) stations and installed a new force main. This major work by Friendswood has had the added bonus of allowing space for another new force main from Baybrook Municipal District No.1. MUD 1 will construct its own lift station and force main, ending an arrangement that has been in place for many years that allowed the largely commercial district to share a pipeline with the City of Houston.

Jerald Landis, Superintendent of Municipal Services, said initial work has begun which will result in the modification of the existing ultraviolet light disinfection system. He said the new configuration will result in more effective treatment and less power consumption. Landis also reported that consideration is being given to improving the aeration system at Blackhawk with "fine bubble" diffusion. Again, better treatment and lower power requirements will result in lower costs for our users.

In addition to the City of Friendswood, Baybrook MUD 1, and the City of Houston, Blackhawk also treats wastewater for Municipal Utility District No. 55 and part of the City of League City.



40-ACRE FACILITY

TERRI STRACHAN
FACILITY MANAGER

40-ACRE AND CAMPBELL
BAYOU FACILITIES

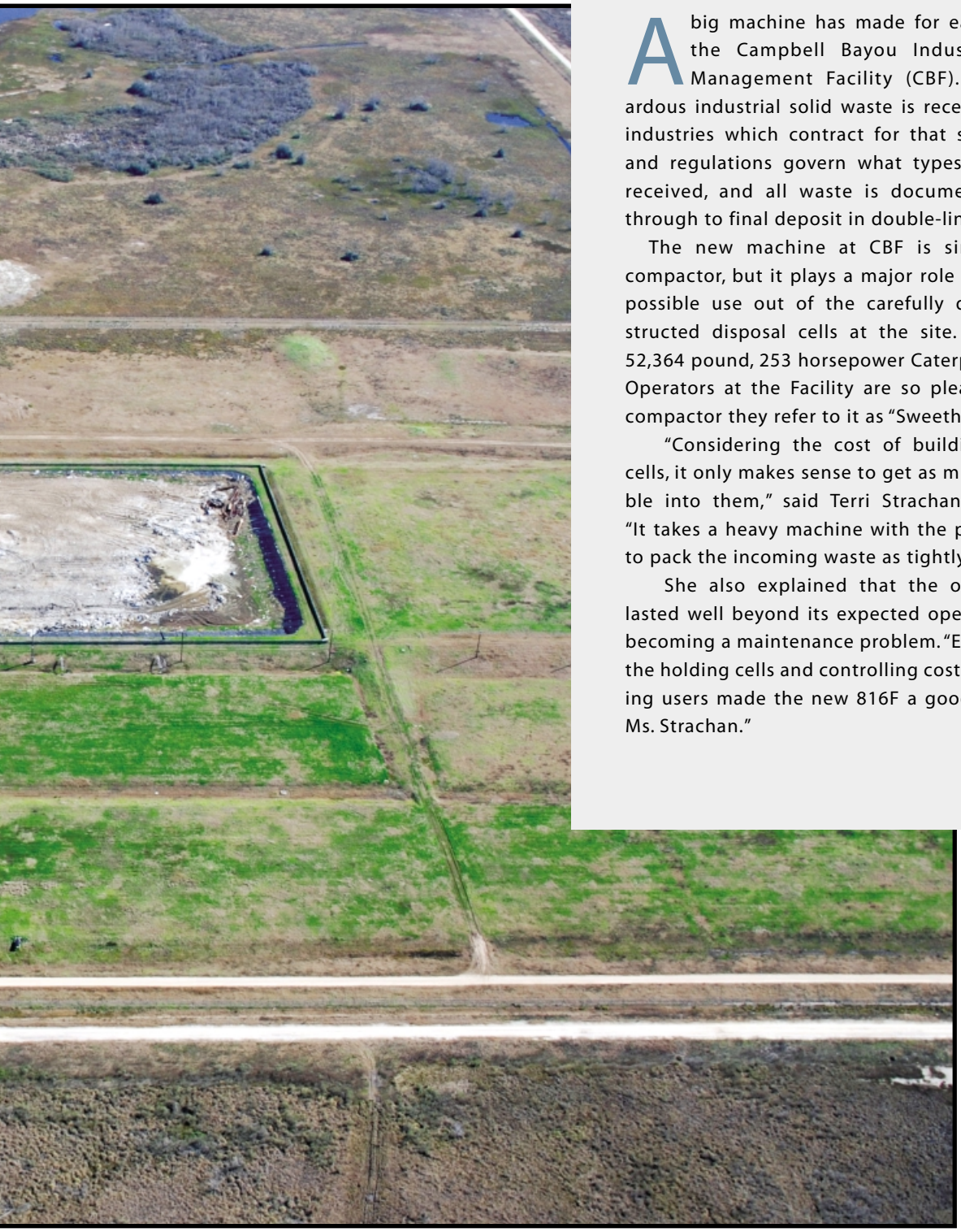
The 40-Acre Industrial Wastewater Treatment Facility in Texas City, Texas, has been in operation since the mid 70's. During most of that time it operated very efficiently with an aerated lagoon system which treated trace organic compounds from our customers used in the production of petrochemicals. The facility has seen many changes since then but the newest section of the treatment system is known as the Oxygen Activated Sludge Plant (OAS).

While the older system worked very well to treat organics from our users' incoming water, new treatment units were necessary to meet air permitting requirements. This new construction cost approximately $25 million.

The OAS is comprised of 12 oxygenating units, three mixers and two clarifiers. An average of three million gallons of influent (water requiring treatment) flows through the OAS daily. The plant can treat a maximum flow of some 15 million gallons per day. In a new basin, pure oxygen is injected into the water. Here mixing occurs, allowing microorganisms in the basin to do a very effective job of consuming hydrocarbons and other materials. The result is a significant reduction in the release of unwanted emissions into the air.

"The older part of the plant is now serving mostly as a polishing system for the already treated water," according to Terri Strachan, Facility Manager for both 40-Acre Facility and the Campbell Bayou Industrial Solid Waste Management Facility, also located in Texas City. Another plus is that less horsepower, thus less electricity, is required in the older part of the treatment system to maintain the quality of the treated water.

CAMPBELL BAYOU FACILITY



A big machine has made for easier operations at the Campbell Bayou Industrial Solid Waste Management Facility (CBF). At CBF non-hazardous industrial solid waste is received by truck from industries which contract for that service. Strict rules and regulations govern what types of waste may be received, and all waste is documented and tracked through to final deposit in double-lined disposal cells.

The new machine at CBF is simply known as a compactor, but it plays a major role in getting the best possible use out of the carefully designed and constructed disposal cells at the site. The machine is a 52,364 pound, 253 horsepower Caterpillar 816F Series 2. Operators at the Facility are so pleased with the new compactor they refer to it as "Sweetheart."

"Considering the cost of building these disposal cells, it only makes sense to get as much waste as possible into them," said Terri Strachan, Facility Manager. "It takes a heavy machine with the proper attachments to pack the incoming waste as tightly as possible."

She also explained that the old compactor had lasted well beyond its expected operating life and was becoming a maintenance problem. "Extending the life of the holding cells and controlling costs for our participating users made the new 816F a good investment," said Ms. Strachan."

WASHBURN TUNNEL FACILITY

Washburn Tunnel Regional Industrial Wastewater Treatment Facility (WTF) accepts wastewater from participating industries in the Pasadena, Texas area along the Houston Ship Channel. It also accepts wastewater by barge and from the GCA-owned and operated Vince Bayou Receiving Station. The receiving station provides a disposal site for trucked in wastewater and then pumps that pre-tested wastewater to WTF for treatment.

The year 2009 was one of fine tuning for WTF. As the cost of certain chemicals used in the treatment process skyrocketed (in one case from $300 per ton to $1,000 per ton), GCA's Operations Services technical staff worked with the management group at WTF to put new instrumentation in place to provide operators more precise information which allowed them to make smaller adjustments to optimize the treatment system. The new procedures allowed the use of smaller amounts of chemicals, sometimes at multiple locations along the treatment system. The result: significantly lower use of chemicals and a resultant cost savings for participating industries.

Leonard Levine, Director of Technical Services, and Gordon Pederson, WTF Manager, explained that spending capital up front for better measurement and controls resulted in an operating cost savings for the plant.

In an unrelated project, pumps used to recycle sludge within the plant were replaced with more efficient units. The old pumps had been in place so long that parts were sometimes not available to make repairs and new parts had to be custom machined. Sludge is recycled to maintain a sufficient concentration of the naturally occurring micro-organisms which consume organic materials in the wastewater.

GORDON PEDERSON

FACILITY MANAGER

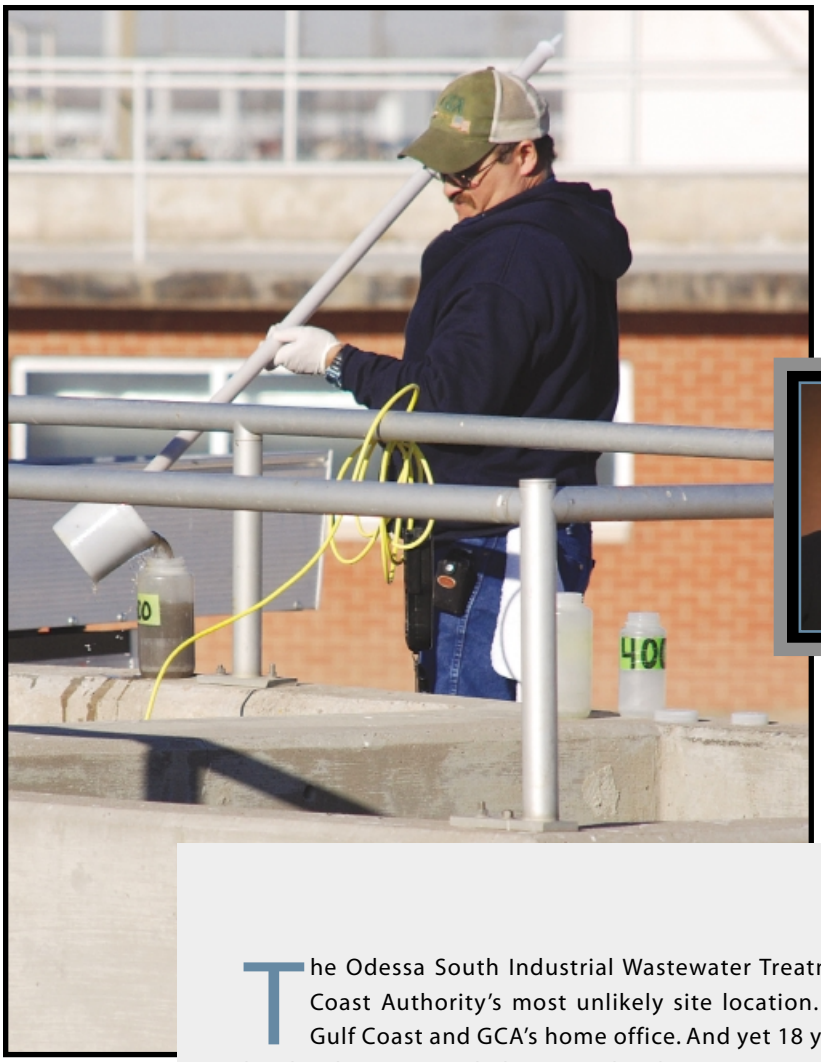
WASHBURN TUNNEL
FACILITY AND VINCE BAYOU
RECEIVING STATION

VINCE BAYOU RECEIVING STATION

After recovering from devastating damage from Hurricane Ike in 2008, Vince Bayou Receiving Station (VBRS) rebuilt and rebounded to record a successful year of operation in 2009. By the end of the year, volumes of liquid wastes received were rising from an average of 1.2 million gallons per month to some 1.6 million gallons per month.

Wastewater received at VBRS is first held in on-site tanks, is then tested and is transferred by pipeline to the WTF for treatment. All waste at VBRS is received via tank trucks. The Station currently has about 35 septic & portable toilet waste customers, six industrial customers and six non-industrial customers. All users of the facility deliver non-hazardous wastewater for treatment.

ODESSA SOUTH FACILITY



LAVERNE PEDERSEN
FACILITY MANAGER
ODESSA SOUTH
REGIONAL FACILITY

The Odessa South Industrial Wastewater Treatment Facility in Odessa, Texas, is Gulf Coast Authority's most unlikely site location. It's almost 600 miles from the Texas Gulf Coast and GCA's home office. And yet 18 years ago when both city interests and local industries needed a centralized wastewater treatment plant, Gulf Coast Authority was able to reach an agreement with all parties to acquire and modify an existing City of Odessa treatment plant and to provide the wastewater treatment required by all parties.

In the interim years some of the names have changed, but Odessa South continues to do a quality job of treating combined streams of municipal sewage from the City and industrial flows from users in the industrial district.

One of the exciting developments during 2009 was the move made by REXtac, LLC, and Orion Pacific to purchase a major operating unit of the Flint Hills Plant. Flint Hills had been a major contributor of wastewater to the Odessa Facility before closing down its operations in Odessa. The purchase occurred during August and provided more than 100 jobs to the local economy and a continuing wastewater flow to GCA's Facility. The purchased unit produces amorphous polyalphaofelin and flexible polyolefin. Among other uses, these compounds are used in manufacturing adhesives.

The Facility Manager at Odessa South is Laverne Pedersen. He commented that the treatment plant also receives wastewater from two power plants and from trucked-in septic tank wastes.

BAYPORT FACILITY

. . . presented to an industrial wastewater treatm
outstanding performance of daily acti

JACK WAHLSTROM
FACILITY MANAGER
BAYPORT FACILITY

ent plant in Texas that has consistently exhibited
vities beyond the normal call of duty."

The Bayport Industrial Wastewater Treatment Facility earned those words of praise, which describe the 2009 Industrial Wastewater Treatment Plant of the Year Award, from the Water Environment Association of Texas (WEAT). The facility serves more than 60 industrial customers which are largely petrochemical producers. It also treats flows from two municipal sources. Bayport has a treatment capacity of 30 million gallons per day and utilizes an activated sludge process with the infusion of pure oxygen.

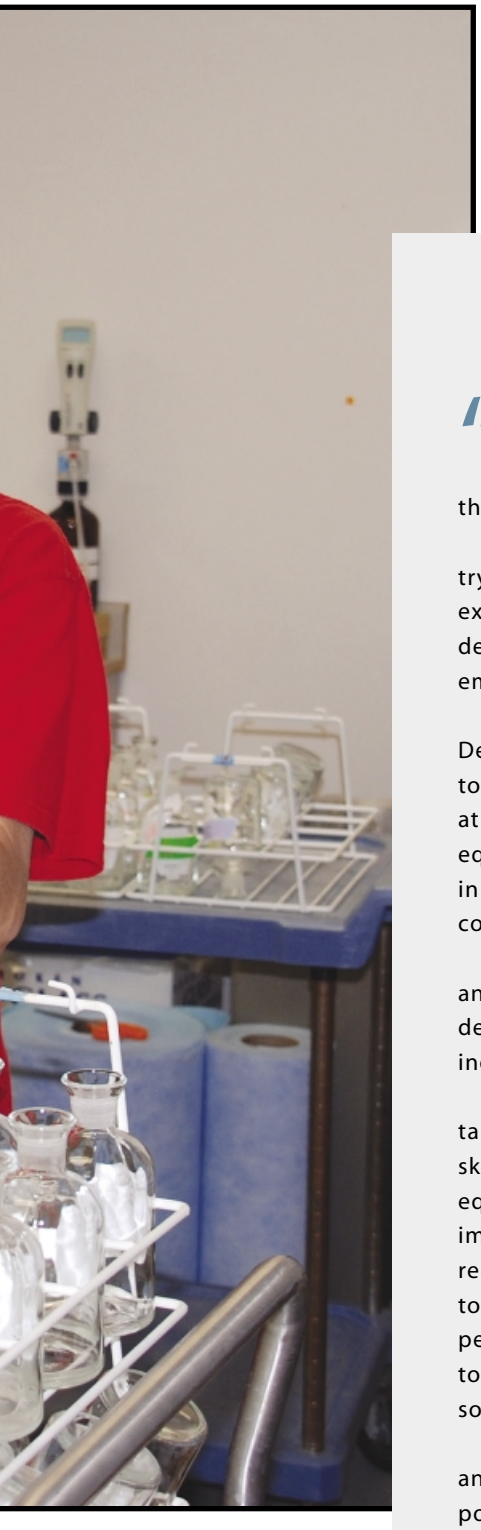
WEAT also noted Bayport's excellent safety record and the quick return of the facility to full operations within four days of sustaining significant damage during Hurricane Ike.

Facility Manager Jack Wahlstrom also reported the completion of a major project during February of 2009 with final touches placed on an improved sludge dewatering system. The new complex includes a new and expanded building and two new belt filter presses to join the two existing presses. The new facilities include several items to improve cost efficiencies.

Sludge is largely made up of the naturally occurring bacteria which are key to making the activated sludge process work. These bacteria consume organics in the incoming wastewater and then complete their life cycle and become sludge, along with a certain amount of sand and other inorganic materials which do not degrade in the process. Belt filter presses somewhat resemble printing presses and act to remove excess water from the wet sludge. Removal of the water makes the sludge lighter so that it is easier and cheaper to transport to permitted landfills for disposal. The sludge is non-hazardous.

Wahlstrom reports that, along with the addition of a new dredge to clean out existing ponds, Bayport is now making headway toward removing years of sludge build-up in the facility's ponds.

CENTRAL LABORATORY



DIANE MALOY
LAB MANAGER

CENTRAL LAB

"The business of the Central Laboratory at GCA is generating quality data in a timely manner for our customers." That's Lab Manager Diane Maloy's succinct definition and also a challenge that Maloy and her lab staff achieve seven days per week.

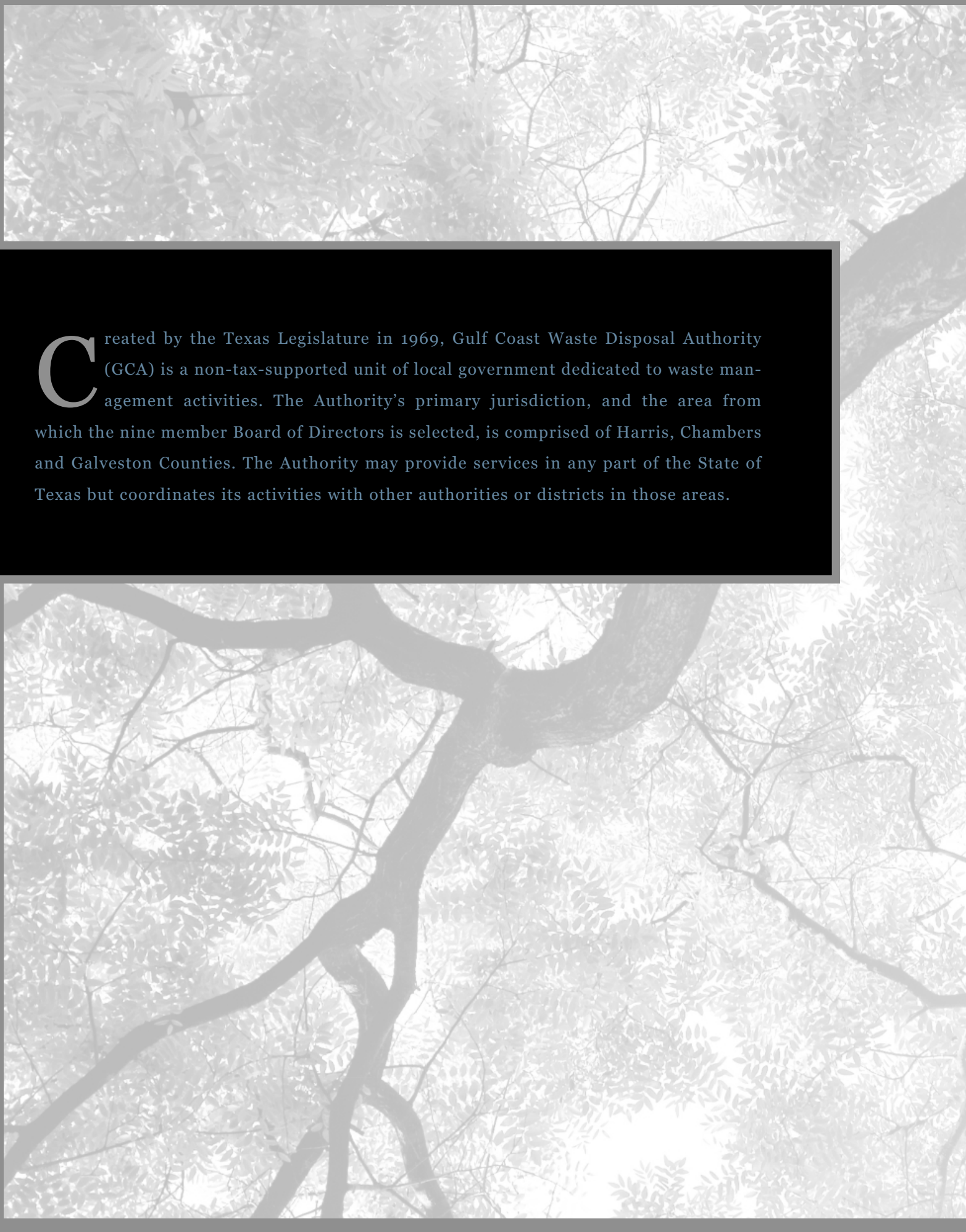
As all facets of the Gulf Coast Authority join the private sector in trying to do more with less and still maintain efficiency, the Lab is not exempt. Maloy lists her priorities as improving work flow processes, dealing with equipment obsolescence over time and cross training for employees. "Business as usual is not an option," said Maloy.

Central Lab has fine-tuned work rotations in the Conventional Department to schedule more analysts at the Lab on more days. They also took a look at bottlenecks in that department, which included a close look at equipment reliability and work flow processes. In some cases new equipment was installed, replacing older, less efficient machines. Changes in the Organics Department reduced the amount of acetonitrile being consumed and bulk ordering was instituted where it was practical.

In the Metals Department a major instrument was set up to perform its analyses overnight without supervision by Lab Technicians. Maloy said dealing with equipment obsolescence is on-going and the Lab is eliminating outdated methods and adopting the latest time-saving technologies.

Cross training is being given high priority. Training sessions are videotaped and technicians are scheduled to view those tapes to keep their skills up-to-date. Maloy concluded with a list of goals: improved scheduled equipment maintenance, streamlining work flow, constant training and improving labor effectiveness. Results from these goals are eliminating redundant testing, and also reducing the use of consumable products in total organic carbon analyses by 74 percent and ammonia analyses by 50 percent. Additionally, the Lab has reduced its own emissions to the air and to treatment at the Bayport Industrial Wastewater Treatment Facility by some 83 percent.

Central Lab's customers are both internal, the various GCA facilities, and external, industrial plants which discharge for treatment or other disposal by the Authority's waste management operations. Test results are used to properly report compliance with regulatory agency requirements and to analyze what is happening within the treatment processes so that plant operators and management in the field can work more effectively.



Created by the Texas Legislature in 1969, Gulf Coast Waste Disposal Authority (GCA) is a non-tax-supported unit of local government dedicated to waste management activities. The Authority's primary jurisdiction, and the area from which the nine member Board of Directors is selected, is comprised of Harris, Chambers and Galveston Counties. The Authority may provide services in any part of the State of Texas but coordinates its activities with other authorities or districts in those areas.

BOARD OF DIRECTORS

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Chambers County

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Vice Chair,
Chambers County

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Secretary,
Galveston County

Dr. Irvin Osborne-Lee
Treasurer,
Harris County

Franklin D.R. Jones, Jr.
Member,
Harris County

Ron Crowder
Member,
Galveston County

Zoe Barinaga
Member,
Harris County

Lamont Meaux
Member,
Chambers County

Randy Jarrell
Member,
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General Manager

Ricky Clifton
Assistant General Manager

Lori Traweek
Manager of Operations

Jim Cooksey
Financial Services Manager

George Mollere
Manager General Administration

GULF COAST WASTE
DISPOSAL AUTHORITY
910 BAY AREA BLVD.
HOUSTON, TEXAS 77058
WWW.GCWDA.COM