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GULF COAST WASTE DISPOSAL AUTHORITY

1993 ANNUAL REPORT

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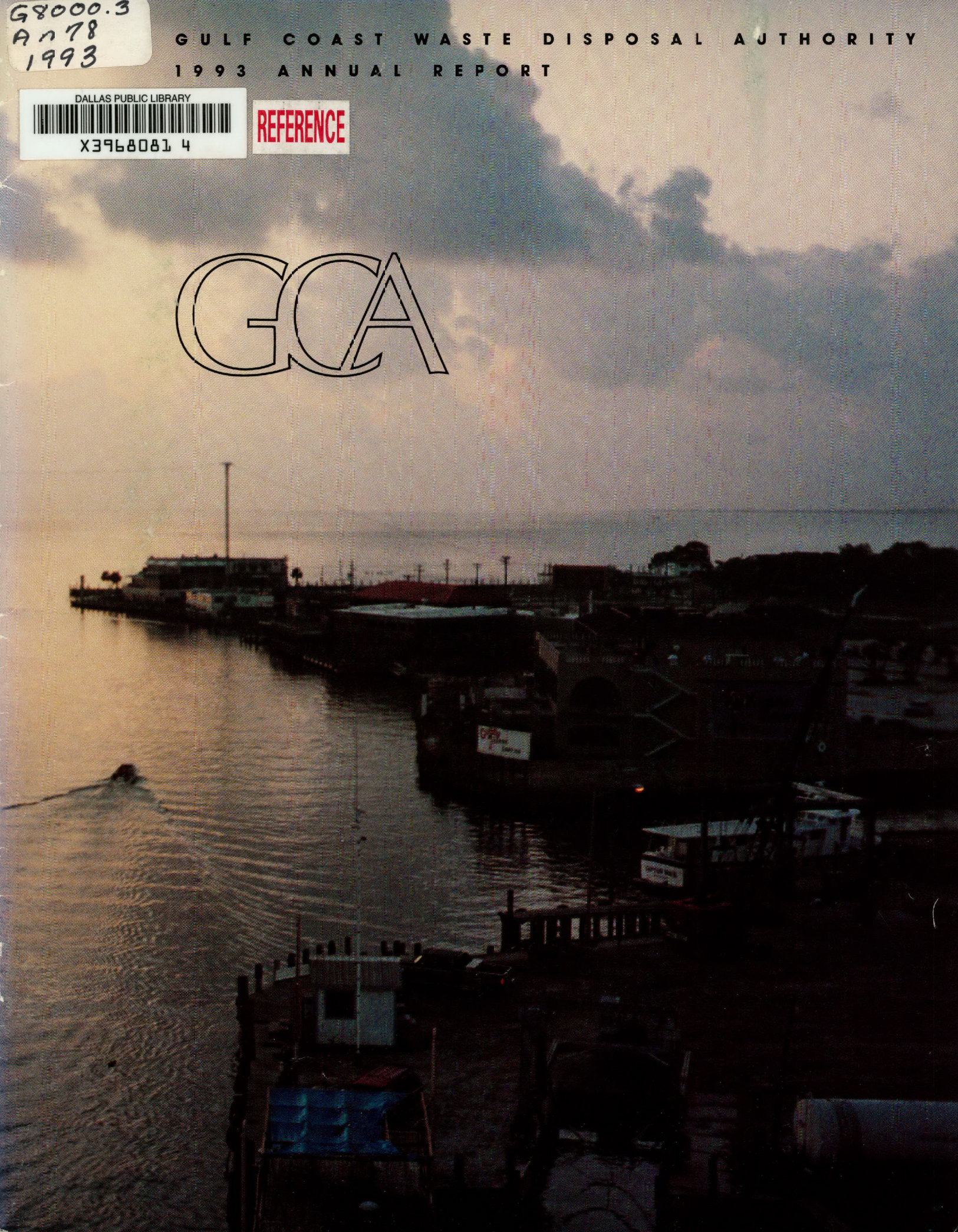


J. M. "Mark" Schultz
Chairman of the Board
Gulf Coast
Waste Disposal
Authority

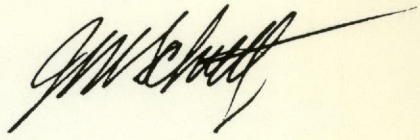
It's a little hard for me to accept that Gulf Coast Authority has almost reached the quarter century mark–a satisfying reality made even more meaningful when you review the depth of this organization's past achievements.

When the Texas Legislature established GCWDA in 1969, the Houston Ship Channel was in pretty bad shape. People made grim jokes about walking across the Ship Channel. It was too thick to drink and too thin to plow, or it was the world's biggest chemical lab, and so on.

It was feared that Galveston Bay itself would face decline. One of the Gulf Coast's biggest assets, the Houston Ship Channel, was becoming an embarrassing ecological "dead zone." Wastewater discharge presented not only an environmental problem, but also raised economic, political, and public relations issues as well.

Gulf Coast Waste Disposal Authority was created by the Texas Legislature to help reverse this trend. Our mission: help resolve waste management problems which impact Galveston Bay. We have discovered over the years, as have other agencies, just how difficult that mission is. And yet . . . while there is still much to do, I believe we have succeeded where a less determined, less competent and less resourceful group might have failed. I thank each of you who has played a part over the years in creating this kind of success–and the pride we all feel in it.

GCA will continue to encourage as well as to provide effective, sustainable waste management practices. I know I speak for the Board in expressing our pride in past accomplishments. And I offer our continued support to staff as we face the challenges of the future.



Cover and inside cover photography by Sheri and Jim Brigance.

BOARD MEMBERS

J. M. "Mark" Schultz
Chairman of the Board
Mr. Schultz was reappointed to the GCA Board by Chambers County Commissioners in 1992. He graduated from North Texas State Teacher's College in 1968 (now North Texas State University) and entered the banking field in Dallas. But a few years later, Schultz satisfied his yen for business by joining his family's long-time rice farming operation near Anahuac. He is a private pilot and outdoorsman. He was first appointed to the GCA Board in 1979.

Gail G. Bradley
Vice Chairman of the Board
Mr. Bradley was reappointed by the Mayors in Galveston County in 1993. He is a former longtime City Commissioner in Texas City and retired from Southwestern Bell Telephone in 1981 after 41 years of service to that company. Bradley served as Texas City's Mayor Pro Tem from 1962 to 1972.

Richard Y. Ferguson
Treasurer of the Board
Mr. Ferguson was reappointed by the Mayors in Chambers County in 1992. He was admitted to the State Bar of Texas in 1974 after obtaining his law degree from the University of Houston. He also holds a B.B.A. degree from Texas A&M. Ferguson is an attorney in a Harris County law firm and has been admitted to practice before the U.S. Supreme Court. He was first appointed to the GCA Board in 1985 by then Gov. Mark White.

James A. Matthews, Jr.
Secretary of the Board
Mr. Matthews was reappointed to the Board by Galveston County Commissioners in 1991. Matthews holds a degree in business administration from the University of Houston and owns his own tire dealership. Additionally, he operates an oil and gas distributorship in Texas City. He lives with his family at Tiki Island.

Roy Byerly
Member of the Board
Mr. Byerly was appointed by Governor Ann Richards in 1993 to be her Galveston County representative on the Board. He holds a B.S. degree from Lamar University and serves as an engineer with Monsanto Chemical Company where he has worked since 1974. The League City resident is a member of the Monsanto Scholarship Committee and is an active church member in Texas City. He is a member of the American Society of Mechanical Engineers.

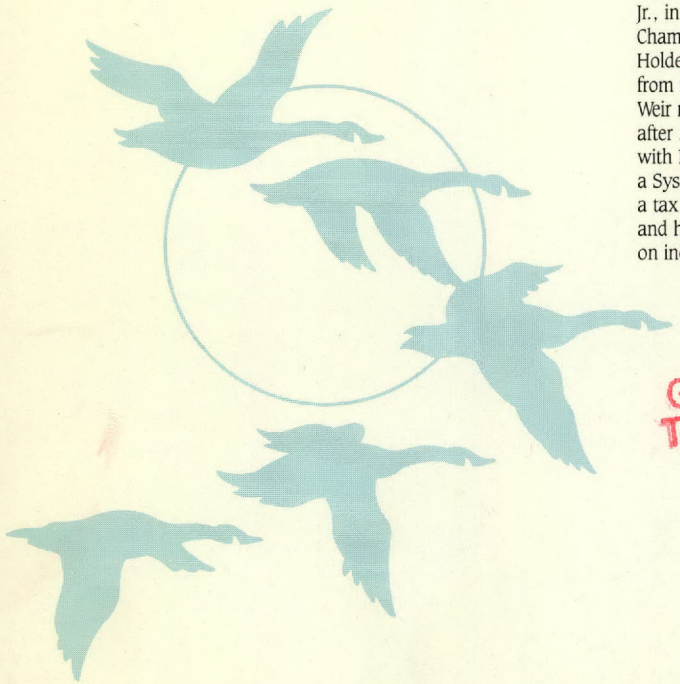
Jerome J. "Jerry" Pennington
Member of the Board
Mr. Pennington was reappointed by Governor Ann Richards in 1992 as her Harris County representative on the Board. He holds a degree in business administration from the University of Texas and is a real estate developer with Pennington-Chen Interests. An industrious realtor and Clear Lake area developer, Pennington has been involved over the years in many civic groups in the Clear Lake area where he lives with his family.

Frank M. Fisher, Jr., PhD
Member of the Board
Dr. Fisher was reappointed to the GCA Board by Harris County Commissioners in 1993. He is a Professor of biology at Rice University and has distinguished himself through publication of some 75 technical papers of scholarly research. Fisher has held consulting posts with the government and such large companies as Exxon and Brown & Root. He is an avid conservationist and served the GCA Board previously as its chairman. The Association of Metropolitan Sewerage Agencies named Fisher in 1993 winner of its Individual Achievement Environment Award.

Fisher joined the GCA Board of Directors in 1979 and was elected Chairman of the Board in 1984.

Hon. John Wildenthal
Member of the Board
Judge Wildenthal, a Houston municipal judge since 1977, was reappointed to the Board by the Mayors in Harris County in 1993. Judge Wildenthal practiced law in South Texas and Houston before serving as an Assistant State Attorney General. Previously, he had been La Salle County Attorney, an attorney with the Senate Armed Services Committee, and on the U.S. Senate staff of Lyndon B. Johnson from 1950 to 1952. The longest-serving member still on the Board, Wildenthal was among the original members appointed in 1969.

Oscar G. Weir
Member of the Board
Mr. Weir was appointed to the Board by Governor Bill Clements, Jr., in 1990 as the governor's Chambers County representative. Holder of a B.S. degree in Math from the University of Houston, Weir retired from Exxon Research after 26 years, and has worked with Edwards Rocket Laboratory as a Systems Analyst. Presently, he is a tax consultant for H&R Block Co. and has taught advanced courses on income tax.



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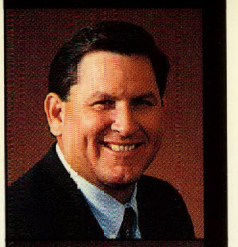
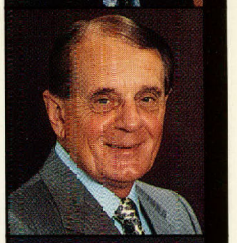


J. M. "Mark" Schultz
Chairman of the Board
Gulf Coast Waste Disposal Authority



Gail G. Bradley
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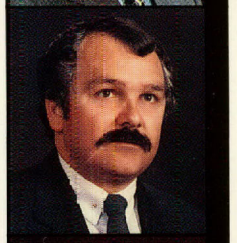
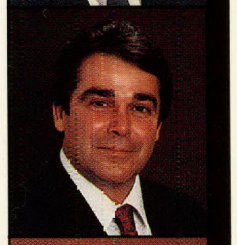
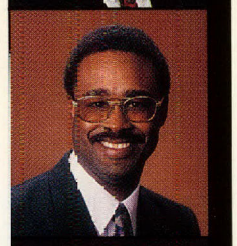


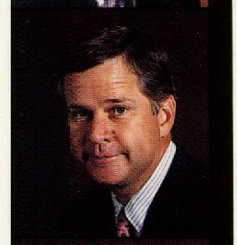
Richard Y. Ferguson
Treasurer of the Board



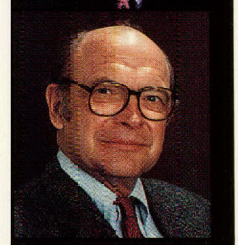
James A. Matthews, Jr.
Secretary of the Board



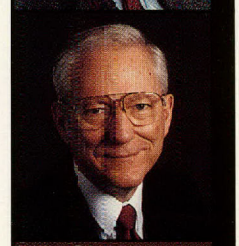
Roy E. Byerly
Member of the Board



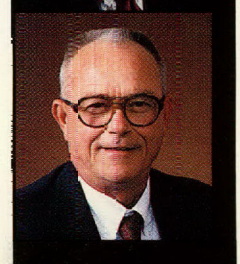
Jerome J. Pennington
Member of the Board



Dr. Frank M. Fisher, Jr.
Member of the Board

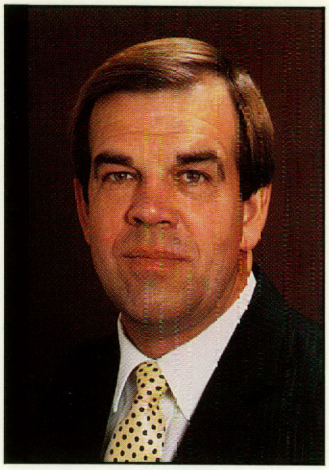


Hon. John Wildenthal
Member of the Board



Oscar G. Weir
Member of the Board

Dick Brown
General Manager
Gulf Coast
Waste Disposal
Authority



Gulf Coast Waste Disposal Authority is well known world wide to professionals in the environmental management profession. Our visitors from abroad have represented Brazil, Mexico, South Africa, Russia, Mainland China, Venice, Italy, and the list goes on. As we approach our 25th year, GCWDA can look back on trails blazed and challenges met. We can take satisfaction in the perfection of regional treatment of industrial wastewater and in the highly specialized and expert staff that has made that possible.

And, as one staff member expressed recently, it seems that "mountain climbing" is a specialty of ours. When the Texas prison system needed a resource, GCA was uniquely positioned to lend a hand; when a local city needed a solution to proper handling of biosolids, GCA had an answer; when a well-meaning regulatory effort nearly stopped the regional treatment of industrial wastewater, GCA obtained the support of far-sighted, elected officials to correct the problem. I agree with that staffer . . . we've climbed a few mountains.

As this organization has done since the beginning, I give credit to those who drafted the statute creating GCA. That statute provides broad responsibility for what could be called waste management activism. While it is the job of other agencies to search out and expose problems, it is the job of GCA to solve those problems, either through technical assistance or hands-on operation of facilities. We are, indeed, a mix of local government strength and businesslike flexibility.

Of course, it would not be possible to make positive use of that legislatively-provided flexibility if it were not for the support of our Board of Directors. Both the current Board and those who served in the past have consistently supported the staff in trying new solutions, seeking better technology and, yes, taking a few chances. It hasn't all worked, but the successes are the reason those visitors continue to come from all over the world.

It remains our goal to build bridges between business and government, between this very special district and other municipal governments.

REGIONAL LEADERSHIP . . .
THE IMPOSSIBLE MISSION MADE POSSIBLE

We who live along the Texas Gulf Coast face several natural hazards, among them shore depletion, beach erosion, hurricanes, and lowland flooding. But, add to these threats one created in some part by all of us, one equally as menacing to health and as economically destructive—pollution.

Of major concern in this region is protection of Galveston Bay into which pulses the Houston Ship Channel—a multibillion dollar artery of nautical commerce.

Houston's world class port is America's third largest cargo handler. Foreign flag vessels from virtually every maritime nation call on Houston, Texas City, and the Port of Galveston every year. The country's third largest armada of pleasure boats is anchored in the Clear Lake area. Add to this that it is the world's largest petrochemical complex—a 50-mile corridor of refineries and chemical plants producing fuels, lubricants and petrochemical products exported to nations everywhere.

Yet, in seeming incongruity there exists among all of it the highly productive waters of Galveston Bay, one of the most significant marine nurseries, fishing and recreation areas in America.

The delicate labyrinth of bays, estuaries, and coastal wetlands along the Texas Coast provides protected habitat for waterfowl such as the endangered whooping crane and the brown pelican as well as the millions of ducks and geese that use the Central Flyway of North America each year.

But bays and estuaries along the coast are not only environmentally valuable—they are also important contributors to the coastal economy. Commercial and sport fishing and other recreational pursuits along the Texas Coast generate some $3 billion each year. Here, truly, is a laboratory of coexistence—a vibrant industrial economy in the heart of a sensitive marine environment.

The Texas Legislature created Gulf Coast Waste Disposal Authority in 1969 in response to claims that the Houston Ship Channel was one of the country's most polluted waterways. Arguably, there may have been more polluted areas. But a problem did exist. Unquestionably, mismanaged—even uncontrolled—wastewater discharges were threatening the character and viability of the Bay. Fish and other marine species had vanished from upper reaches of the Ship Channel. Any visionary could predict longterm effects on the Bay. But it would take more than a visionary to reverse the trend.

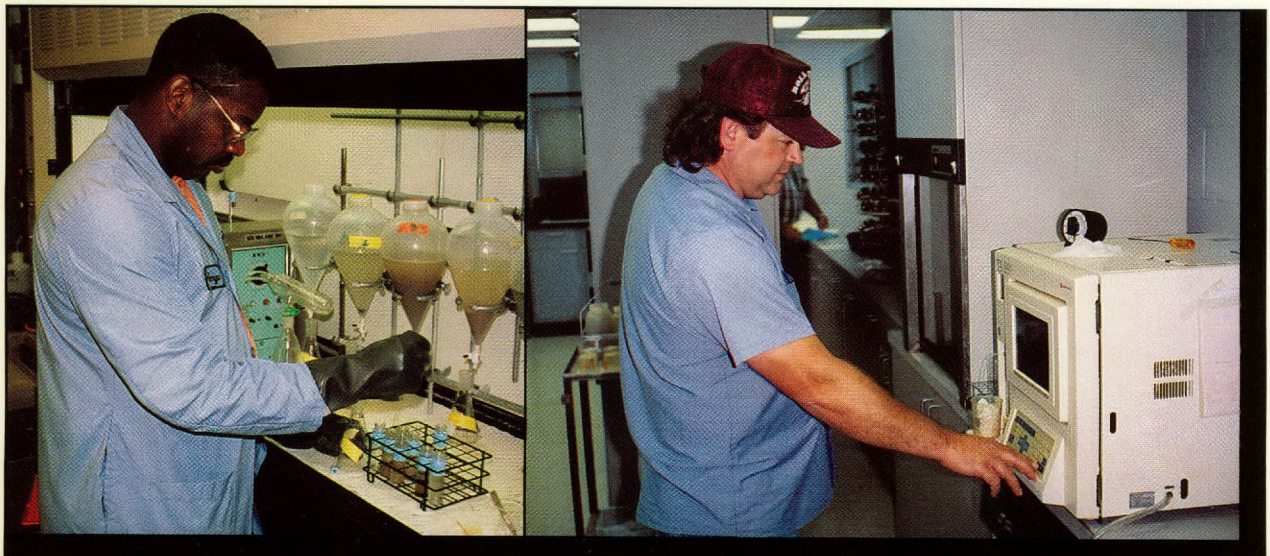
The Texas Legislature created GCWDA to coordinate the treatment of wastewater over a large, three-county region surrounding the Bay. GCA signed the nation's first regional wastewater treatment contract in 1973. Other contracts followed and six years later GCA opened a Class 1 industrial solid waste disposal facility near Texas City.

The Authority operates six municipal treatment plants serving 13 municipal areas.

Additionally, GCA owns and operates three industrial wastewater treatment facilities serving the needs of nearly 70 industrial clients near and along Galveston Bay and the Houston Ship Channel.

Although GCA is a local government, it receives no tax support. Its operations are financed largely through management fees and capacity use charges paid by industries, municipalities, and utility districts participating in GCA's waste treatment programs. Its Board of Directors is appointed by Mayors, County Commissioners, and the Governor to represent the three counties which comprise GCA's primary operating area.

How we treat our water supplies is of critical importance for many reasons. The human body is mostly water. We understand its importance. As you read through this report, you will realize how much GCA has accomplished, especially in the area of sophisticated wastewater treatment.



Far Left: Central Laboratory Chemist George Blue isolates properties taken from industrial wastewater sample sent to the Bayport Facility. Left: Operator Lynn Nash uses special microwave unit to conduct total suspended solids test at Texas City's 40 Acre Facility.

At the beginning of 1993, GCA's 12 wastewater treatment and solid waste disposal centers served a total of 69 industrial customers and 13 municipal areas from Humble to Galveston. They represent manufacturing, chemicals production, petroleum refining, and municipal government–the largest and most diverse client base since the Authority was created in 1969.

Our customers and the facilities which serve them are:

INDUSTRIAL SERVICES

WASHBURN TUNNEL FACILITY
1002 North Richey
Pasadena, Texas 77506

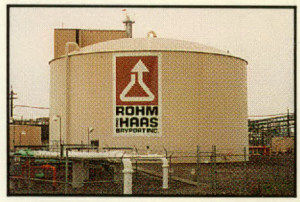
AES Deepwater, Inc.–Pasadena
Air Products Manufacturing Corp.–Pasadena
City of Pasadena
Crown Central Petroleum Corp.–Houston
GATX–Galena Park
GATX–Pasadena
Goodyear Tire & Rubber Co.–Houston
Lyondell Petrochemical Co.–Houston
Miles, Inc.–Houston
Simpson Pasadena Paper Co.–Pasadena

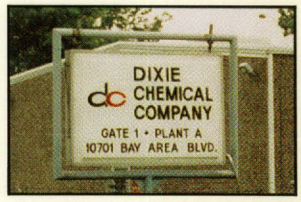
BAYPORT FACILITY
10800 Bay Area Boulevard
Pasadena, Texas 77507

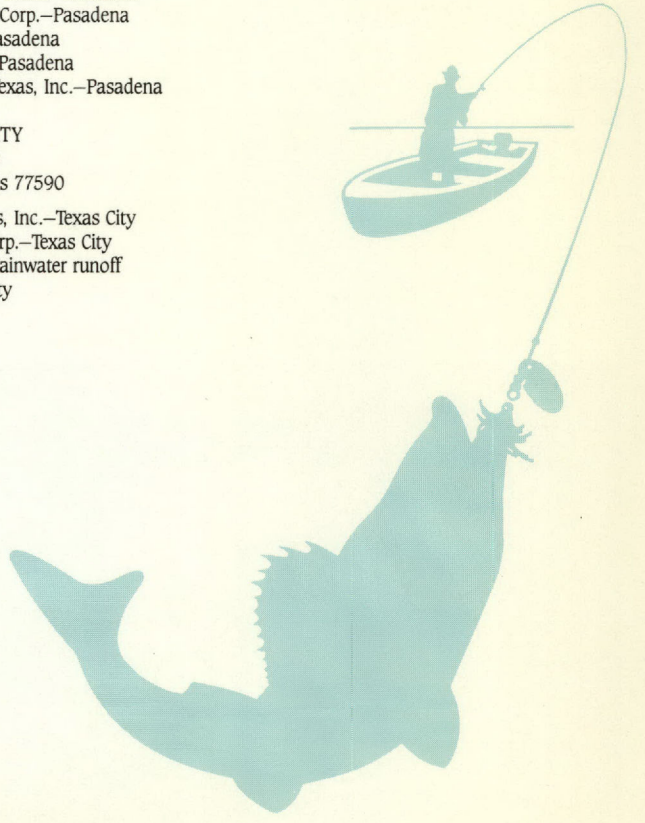
A. C. Liquidating Corp.–Houston
Akzo Chemicals, Inc.–Pasadena
ARCO Chemical Co.–Pasadena
Atascocita Development Corp.–Humble
Bayou Cogeneration Plant–Pasadena
Baytank (Houston), Inc.–Seabrook
Bealine Service Co., Inc.–Pasadena
Big Three Industries, Inc., Bayport–Pasadena
Big Three Industries, Inc., La Porte–La Porte
Calgon Corp.–Pasadena
Carpenter Chemical Co.–Houston
Catalyst Resources, Inc.–Pasadena
Chemical Research & Licensing, Inc.–Pasadena
Chusei (USA), Inc.–Pasadena
Clear Lake Cogeneration Co.–Pasadena
The Dallas Group of America–Texas City
Dianal America, Inc.–Pasadena
Dixie Chemical Co., Inc.–Pasadena
E. I. DuPont de Nemours & Co., Inc.–Pasadena
Eval Company of America–Pasadena
FMC Corp.–Pasadena
Fina Oil and Chemical–Pasadena
The Goodyear Tire & Rubber Co.–Pasadena
Graver Tank & Manufacturing Co.–Houston
Haldor Topsoe, Inc.–Pasadena
Himont USA, Inc.–Pasadena
Hoechst Celanese Bayport Works–Pasadena
Hoechst Celanese Chemical Group, Inc.–Pasadena
Huntsman Chemical Corp.–Pasadena
Hydro Remediation, Inc.–Houston
Kaneka Texas Corp.–Pasadena
City of La Porte
Liquid Carbonic Specialty Gas Corp.–Pasadena
Lonza, Inc.–Pasadena
Lubrizol Petroleum Chemicals Co.–Deer Park
Lyondell Polymers Corp.–Pasadena
Montgomery Tank Lines, Inc.–Pasadena
Nova Molecular Technologies, Inc.–Pasadena
OxyChem Petrochemicals–Pasadena
Petrolite Corp.–Pasadena
PetroUnited Terminals, Inc.–Seabrook
PPG Industries, Inc.–La Porte
Revak Enterprises, Inc.–La Porte
Rohm & Haas Bayport, Inc.–La Porte
City of Shoreacres
Southern Ionics, Inc.–Pasadena
Tri-Gas Industrial Gases–Pasadena
Velsicol Chemical Corp.–Pasadena
Welchem, Inc.–Pasadena
Zeneca Ag, Inc.–Pasadena
Zeon Chemicals Texas, Inc.–Pasadena

40 ACRE FACILITY
Loop 197 South
Texas City, Texas 77590

Sterling Chemicals, Inc.–Texas City
Union Carbide Corp.–Texas City
Campbell Bayou rainwater runoff
MOTCO–Texas City







1. *Alief Regional*
   Wastewater Treatment Plant
   12950 Skymeadow Drive
   Houston, Texas 77070
   A modern urban treatment center in far West Houston which serves municipal customers with a plant capacity of 4 million gallons per day.

2. *Blackhawk Regional*
   Wastewater Treatment Plant
   3902 West Bay Area Boulevard
   Friendswood, Texas 77546
   Serves City of Friendswood, Municipal Utility District 55, City of Houston, with a 9.25 million gallon per day treatment facility.

3. *Washburn Tunnel Facility*
   1002 North Richey
   Pasadena, Texas 77506
   Serves the Pasadena industrial area with a 55 million gallon per day capacity treatment facility which in 1993 added a highly-sophisticated belt press dewatering system.

4. *Bayport Facility*
   10800 Bay Area Boulevard
   Pasadena, Texas 77507
   This showcase facility serves numerous major companies in a long industrial corridor in Southeast Harris County. The Bayport Facility also hosts GCA's Central Laboratory.

5. *40 Acre Facility*
   Loop 197 South
   Texas City, Texas 77590
   Provides wastewater treatment services to major chemical companies from a 15 million gallon per day capacity treatment center between Texas City and Galveston.

6. *Campbell Bayou Facility*
   1600 Campbell Bayou Road
   Texas City, Texas 77590
   This 200-acre site was constructed in 1979 to serve the needs of industrial customers like Marathon Company, Monsanto Company, Union Carbide, and others.

7. *Galveston Transfer Station*
   5515 Port Industrial Boulevard
   Galveston, Texas 77554
   Recently expanded, this terminal serves as a collection station for City of Galveston solid wastes which are transported by GCA to landfills on the mainland.

The past year has been a progressive and productive one for GCA Industrial Operations. Installation of a $6 million belt press dewatering system at the Washburn Tunnel Facility moved closer to reality while improvements programs at other GCA Industrial sites were either in serious planning stages or were nearing completion.

Construction of two above-grade aeration tanks, part of Bayport's first stage treatment system, permitted elimination of a shallow, ground-level aeration pond. Above ground tanks make it far easier to detect and correct leaks than did the clay-lined pond, and the new steel tanks add slightly more capacity to Bayport's overall daily wastewater treatment capability. Additionally, aeration in deep tanks is much more power efficient.

Installation of the aeration tanks and a new lift station at Bayport were but two of the long-range, multi-million dollar improvements planned for the facility over the next ten years. Next in line is an enclosed collection system to replace an open cement channel through which all incoming wastewater requiring biological treatment is presently moved over a 2.5 mile course. The bulk of the incoming wastewater is from industrial users, although it is co-mingled with wastewater from two municipal clients.

The $7.5 million enclosed system will employ a 40-inch line suspended directly above the existing channel. The cement channel now in use will serve as a backup collection system in case of leaks in the enclosed line, or other problems. The tightly enclosed piping system will eliminate odors and organic buildups to which open channels are susceptible.

Detailed engineering work on the project has begun and completion is targeted for mid to late 1995.

In addition to improved vehicle access at the Washburn Tunnel Facility, a new belt press dewatering system to produce biosolids has been installed. The $6 million system gives GCA the kind of flexible transportation and disposal alternatives it always seeks.

BAYPORT

As 1992 drew to a close, GCA essentially completed two of nine long-range capital improvement programs at the Bayport Industrial Wastewater Treatment Facility. These projects, costing some $7.2 million, included upgrading of the facility's first stage treatment system and a new lift station.

GCA authorized an engineering study in 1991 to evaluate the Authority's 10-year capital improvements program at Bayport—our regional treatment plant designed to provide a high level of wastewater treatment for some 44 industrial clients in Southeast Harris County. Additionally, the plant provides treatment of municipal sewage for Shoreacres and La Porte.

Of the nine capital projects proposed by the final evaluation, five were deemed to be needed by the end of 1994. These improvements were considered necessary to meet requirements of the growing number of Bayport District clients and to ensure Bayport's admirable record of compliance with permit requirements. One added benefit is expected to be an increase in energy efficiency.

By the end of 1992, part of Bayport's first stage treatment system was upgraded by replacing the existing shallow aerated basin with two above ground treatment tanks.

The two tanks, each with a capacity of 1.7 million gallons, effectively replace the volume of the shallow aeration pond which was prone to odorous air emissions. The new lift station was added to pump water into the 30-foot-tall tanks.

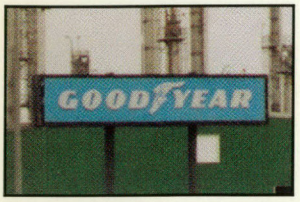
Financing for these capital projects was provided through issuance of $6 million in bonds and, partially, from the retained earnings of the fund.

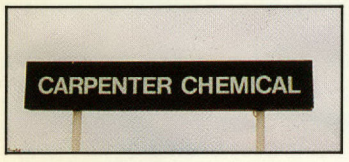
GCA's Bayport plant was one of the four GCA facilities honored with a 1992 Gold Award from the Association of Metropolitan Sewerage Agencies for permit compliance during the year.

WASHBURN TUNNEL

By mid-1993, finishing touches were being placed on a $6 million project to install a belt press dewatering system at the Washburn Tunnel Facility, along with related buildings and vehicle access improvements at the site. The Washburn Tunnel Wastewater Treatment Facility is a regional collection and treatment plant which processes the wastes from one municipal source and nine industrial locations.

The upgrade program began in mid-1992 and will provide much greater flexibility in long range management of biosolids. Currently, waste sludges are moved by barge from the Washburn Tunnel plant in Pasadena along the Houston Ship Channel to disposal facilities outside of





SOLID WASTE FACILITIES

CAMPBELL BAYOU LANDFILL
1600 Campbell Bayou Road
Texas City, Texas 77590

Marathon Oil–Texas City
Monsanto Chemical Co.–Chocolate Bayou
Sterling Chemicals, Inc.–Texas City
Union Carbide Corp.–Texas City

GALVESTON TRANSFER STATION
5515 Port Industrial Boulevard
Galveston, Texas 77550

City of Galveston

MUNICIPAL SERVICES

ALIEF REGIONAL WWTP
12950 Skymeadow Drive
Houston, Texas 77070

Braes Utility District–City of Houston
Candlewood MUD–City of Houston
Rosewood MUD–City of Houston

BLACKHAWK REGIONAL WWTP
3902 Bay Area Boulevard
Friendswood, Texas 77546

Baybrook MUD No. 1
City of Friendswood
City of Houston
MUD No. 55

CANDLELIGHT HILLS WWTP
3401 Hide Way Lane
Spring, Texas 77373

CEDAR BAYOU PARK STP
6400 Bayou Boulevard
Baytown, Texas 77521

Lift Station–6305 Bayou Blvd.

EL DORADO UTILITY DISTRICT
Humble, Texas 77338

El Dorado STP–Greens Rd.
El Dorado WTP No. 1–7931 Bender
El Dorado WTP No. 2–16226 Mesa Rd.
Mesa Road Lift Station–15715 Mesa Rd.

LUCE BAYOU PUD
Huffman, Texas 77336

Afton Way Lift Station
Doverbrook Lift Station–28450 Ideloch
Luce Bayou STP–FM 2100
Luce Bayou WTP–FM 2100

GULF COAST WASTE DISPOSAL AUTHORITY CENTRAL OFFICE

910 Bay Area Boulevard
Houston, Texas 77058
(713) 488-4115

Harris County. From the liquid waste, the belt presses can produce biosolids which are 35 to 45 percent dry and which may then be transported to a variety of permitted disposal sites.

The improvements are being financed partially by the Washburn Tunnel II Capital Projects Fund and, partially, by the Washburn Tunnel Wastewater Treatment Special Revenue Fund.

40 ACRE FACILITY

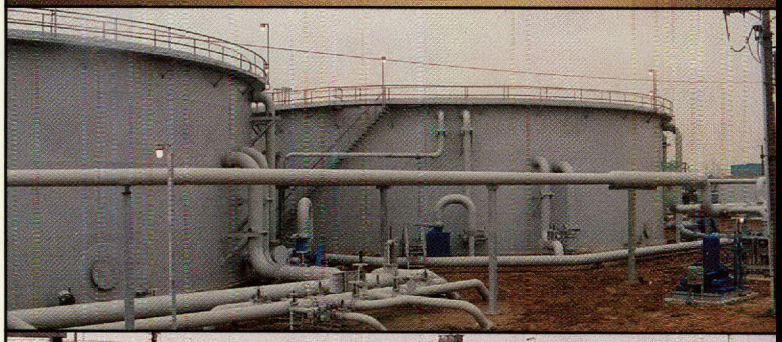
In 1993, GCA's 40 Acre Facility in Texas City continued to provide joint treatment for the waste streams from two major chemical companies at the rate of millions of gallons per day. The plant provides intermediate and secondary treatment for waterborne wastes. The raw waste load received for treatment at the 40 Acre Facility is equivalent to that generated by a typical city with a population of more than 500,000.

The treatment system at the 40 Acre site is a modification of the activated sludge system which utilizes microorganisms to render wastewater safe for eventual discharge into Galveston Bay.

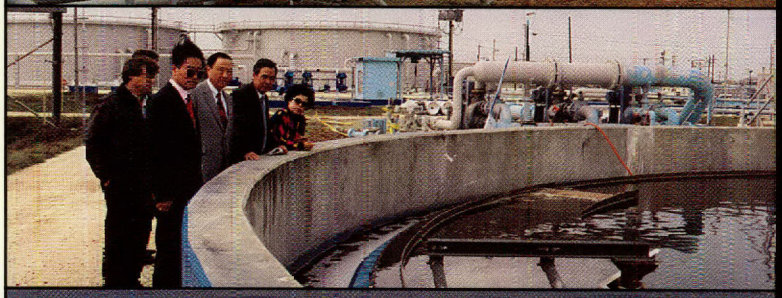
VINCE BAYOU FACILITY

The Vince Bayou Facility, which began operations in 1985, continued its important role last year of receiving portable toilet wastes collected by 10 Houston area service companies. Waste is trucked to the Vince Bayou station where it is stored briefly and sampled to ensure acceptability for treatment. It is then pumped to the Washburn Tunnel Facility for treatment. Last year, Vince Bayou received an average 500,000 gallons of portable toilet wastes per month for treatment.

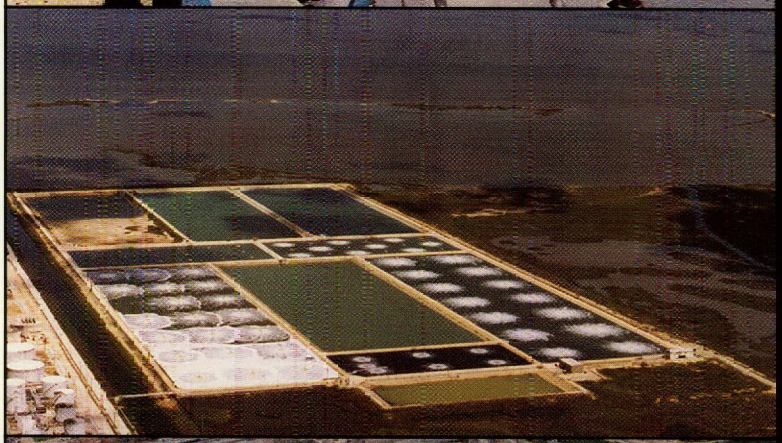
Night quickens over the Blackhawk Facility, GCA's premiere municipal wastewater treatment plant located in Friendswood.



Bayport's first stage treatment system was upgraded with the addition of two aboveground treatment tanks that replaced a shallow aerated basin.

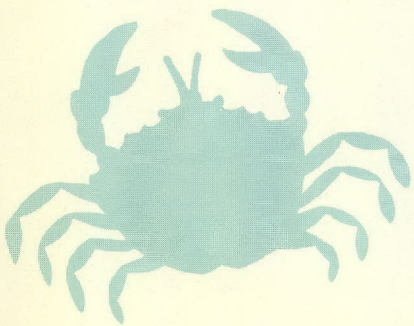


Visitors from the Republic of China toured the Bayport plant where they sought solutions to their own environment management problems. Among the group was James Chiang, Chairman of the Asian Council of America.



Strategically located in the Texas City area, Gulf Coast Waste Disposal Authority's 40 Acre Facility provides wastewater treatment services to nearby chemical companies.

The Authority's Washburn Tunnel Facility provides a clear example of how GCA provides cost efficient services to industry by treating its wastewater to acceptable environmental standards. Nearly a dozen industrial plants send millions of gallons of wastewater through this facility daily. The co-mingling of waste streams is effective for balancing pH values and for a number of other applications.



Two of GCA's largest municipal operations are taking steps to eliminate or significantly reduce the chlorine content of water discharged after treatment. At the Alief Sewage Treatment Facility, a system will neutralize, or dechlorinate, the treated effluent before it enters the receiving stream. Tertiary (secondary) treatment which includes final filters produce a very clear effluent at the Blackhawk Facility. This clarity allows the use of a relatively new technology instead of dechlorination. Based on the recommendation of consulting engineers, an ultraviolet (UV) system of disinfection will be installed. Treated and filtered wastewater flows between banks of UV lights which eradicates any remaining bacteria which could pose a problem. Initial bid proposals have been received for the UV system. Review and approval by the Texas Natural Resource Conservation Commission must be completed before any purchases or installation begin.

Alief serves approximately 4,000 residential customers in the west part of Greater Houston. Blackhawk serves the City of Friendswood, Municipal Utility District 55 and portions of the southern part of Houston.

Blackhawk is also providing sludge treatment for the City of Friendswood, Cedar Bayou Park U.D. and Luce Bayou P.U.D. With permission of the TNRCC, liquid sludge is transported to Blackhawk for further treatment before it is dewatered through belt presses and taken to an approved landfill.

The Municipal Section is studying the possibility of adding a lime stabilization system at Blackhawk to achieve the highest current treatment category sludge. Such treated biosolids are approved for land application such as soil amendment for roadside grasses and wildflowers.

Although seen often by the general public as a threat or a nuisance, properly treated sludges or biosolids are a valuable resource used to return nutrients to the soil. Sludge is not simply dried sewage. It is the final product after microorganisms have taken our waste products and reduced or digested those products through their own systems. When these microorganisms or "bugs" have completed their life cycle or when they have produced more of themselves than are needed in the treatment system, some of the oversupply is discharged from the active part of the plant. It is the bug bodies and sand and silt not biodegraded in the treatment plant which constitute what we commonly refer to as sludge.

Visitors from other countries tour the Blackhawk Facility fairly often. When they get to the sludge dewatering belt presses, they ask if the dried sludge cake is going to landspreading. They are surprised and often saddened to hear that the cake is going to a landfill. "What a waste" they say with a sad shake of the head. GCA hopes at Blackhawk . . . in the near future . . . reclamation of sludges for return of nutrients to the soil will be a normal part of our operation.

Clean, thoroughly treated water—our finished product— leaves the Blackhawk Facility's discharge flume from where it flows directly into Clear Creek.

Added roof area at Galveston's Transfer Station Facility expedites garbage transfer processing from municipal trucks to GCA transports.

GCA's Special Projects section comes by its title honestly for the issues and programs it manages really are of special importance to the Authority and its clients. Special Projects crosses the line between Municipal and Industrial Operations to assist those areas with trouble-shooting, problem-solving, technical assistance, and a host of other cross-boundary issues which are of high priority with the GCA Board and management.

Anticipating conditions and circumstances before they develop—rather than reacting hastily after they occur—is merely part of the dynamics which make Special Projects "special."

Waste sludges from the Washburn Tunnel Facility are currently moved by barge to treatment lagoons in West Galveston County. Special Projects anticipated some time ago that an optional disposal plan should be implemented once sufficient resources become available. Needed capital resources were obtained in mid-1992 and a plan built around purchase of a belt press dewatering system for Washburn Tunnel was set in motion. Recent installation of the new belt press system will provide the Facility with greater flexibility in management of biosolids. Wastes may be transported to a variety of other permitted disposal sites if it becomes necessary or simply desirable.

Another important role of the special projects group is to coordinate projects utilizing the full scope of resources within the authority and incorporating the expertise of the outside consultants as necessary. A good example of this is the recent sulfide study at the Washburn Tunnel Facility. The measured levels of sulfides at the facility increased without explanation.

The special projects group utilized the expertise of outside treatability experts, and the in-house expertise of the Central Lab, operations, and engineering groups to solve the problem. The result of this research project (which is published in the proceedings of the 66th Annual Water Environment Federation Conference) was to discover two unreported interferences in the established test method. This marks the second time that research performed in association with the Washburn Tunnel Facility has made significant discoveries in the area of wastewater analysis.

GCA assumed operation of the Galveston Transfer Station August 5, 1985 to transport municipal solid wastes from Galveston to landfill areas on the mainland. Last year, the Galveston Transfer Station moved 65,000 tons of refuse through the facility.

This refuse was hauled by GCA vehicles to BFI landfills in Galveston County for final disposal.

The Galveston site was enlarged earlier this year to provide additional all–weather shelter area for truck loading and unloading operations.

Other potential new programs being explored include:

- Development of a formalized relationship between GCA, the University of Houston-Clear Lake, state air and water control agencies,
- Creation of a stronger quality assurance program through tougher site inspections with centralized compliance enforcement authority.

CENTRAL LABORATORY

Central Laboratory was conceived as the most cost-effective and wholly professional way to reduce the Authority's reliance on outside laboratories for wastewater analysis. And its full service operation today represents achievement of goals which not only better serve our clients, but which also enhance their confidence in the thoroughness and accuracy of GCA laboratory work.

Central Laboratory began generating net income in the first quarter of 1993 after experiencing some expected sluggishness common to most new operations during initial startup periods.

Opened in April 1991 as a co-tenant at GCA's Bayport Industrial Wastewater Treatment Facility, Central Laboratory now employs some 29 chemists and technicians who provide all of GCA's industrial and municipal wastewater treatment plants with in-house analysis required by government and permit rules. Consolidation of most of the Authority's analytical work has now materially reduced the volume of testing sent to outside laboratories which provides GCA with closer control over analytical work we perform for our customers. It is neither feasible nor cost efficient to perform every conceivable laboratory analysis at Central Laboratory, but significant reduction in our dependence on outside labs is an added comfort factor for the Authority and its users.

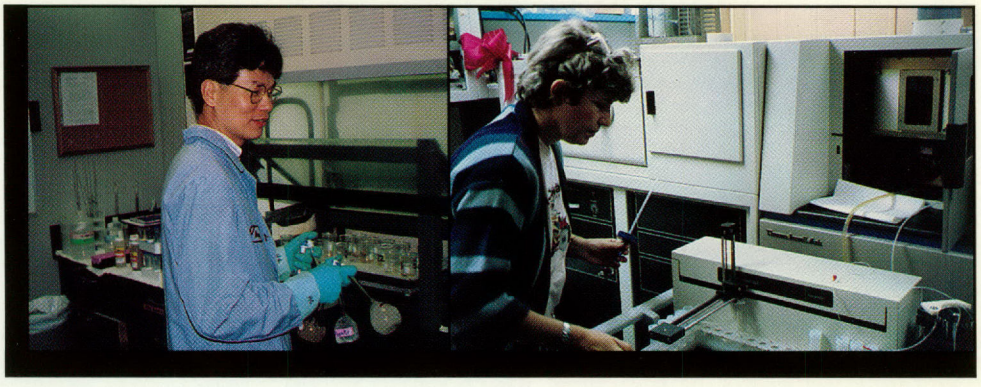
One of the first major projects undertaken in the new facility was the development of a sophisticated Quality Assurance/Quality Control program.

While the Authority has always maintained a high level of quality control, analytical procedures are now even more rigorous with this new program.

By the end of 1993, the Central Laboratory should be fully capable of performing most of the analytical procedures necessary to satisfy the Authority's requirements. Meanwhile, the Central Laboratory has continued to offer its limited excess analytical capacity to its industrial users and non-GCA clients.

A University of Houston-Clear Lake student co-op program involving Central Laboratory advanced another step in Spring 1993 with temporary employment of a UHCL intern who is studying for her master's degree in environmental science. Employed earlier at the laboratory was a Sam Houston State University student. GCA General Manager Dick Brown is a member of the UHCL Development and Advisory Council which initiated the student co-op program.

Capital funds for the laboratory's 10,000 square foot physical plant, equipment, furnishings, and initial startup expenses were provided by a $1.5 million advance from the Bayport Area System Revenue Fund.



Right: Henry Chiu, Central Laboratory's Chief Chemist, provides expert counsel for laboratory staff while conducting his own chemical analysis work. Far Right: Barbara Erwin, a 16-year technician at GCA, operates a plasma-spectrometer at Central Laboratory.

AWARDS

Four Gulf Coast Authority wastewater treatment facilities—Alief, Bayport, 40 Acre, and Blackhawk—have been honored with the Association of Metropolitan Sewerage Agencies Gold Award.

The award recognized the treatment sites for full permit compliance during 1992. It is presented to facilities which meet all requirements of the National Pollution Discharge Elimination System Permits.

The association is composed of the nation's largest publicly owned wastewater treatment agencies. Its purpose is to assist its member agencies to achieve sound public health and environmental goals in the most efficient and cost-effective way possible. This honor continues a series of such awards to the Authority which began in 1985.

Additionally, AMSA selected Dr. Frank Fisher, Jr., former Chairman and Vice Chairman of GCA's Board of Directors, to receive its Individual Achievement Environment Award.

The Government Finance Officers Association awarded a Certificate of Achievement for Excellence in Financial Reporting to the GCA for its annual financial report for the year ended December 31, 1991. This is the fifth consecutive year the Authority has received this prestigious recognition.

GULF COAST AUTHORITY
THE REGIONAL FACILITATOR

Gulf Coast Authority was born an anomaly, a one-of-a-kind organization which has intrigued hundreds of American and foreign visitors over the years to investigate what we do and how we do it.

Why? Because in 1969 there were no other waste treatment facilities in America established by legislative act on a regional basis to help industries and cities—not obstruct and confound their waste remediation efforts.

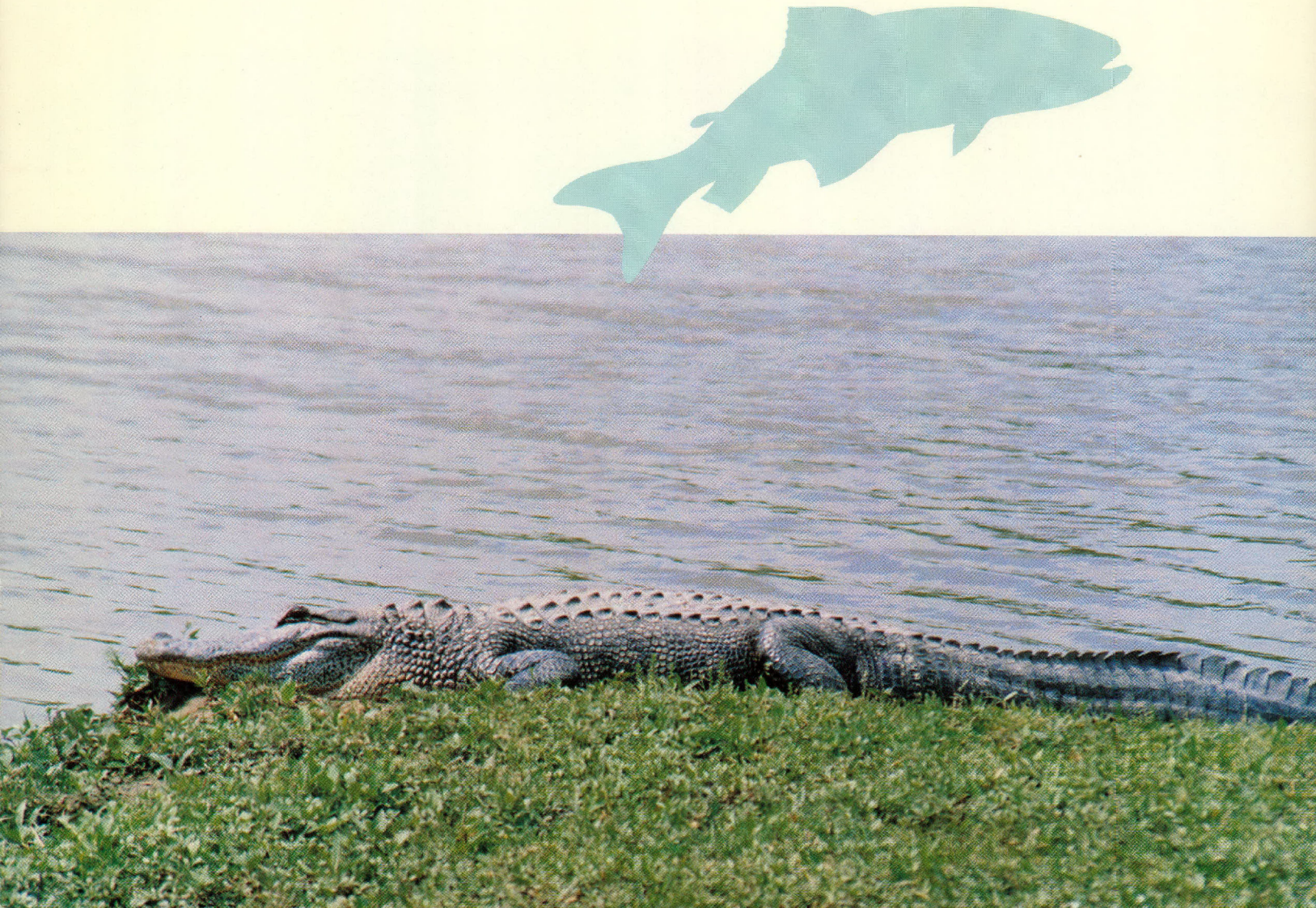
Some critics have characterized GCA's relationship with industry as being "cozy" or accommodating. These few misunderstand the role outlined for GCA by the Texas Legislature. Clearly, the critics have confused GCA with government regulators.

GCA functions to clean up—not regulate—industrial and municipal wastes with primary focus on the Houston Ship Channel and Galveston Bay. GCA receives no tax dollars. And GCA must conform to federal and state environmental regulations the same as any other waste management organization.

The Texas Gulf Coast is the petroleum refining capital of the world. In the three-county area we serve are one-fourth of the nation's oil and gas transmission companies. Of course, the ultimate answer to restoring this region to its pristine state of 200 years ago is for industry to fold up, for every resident to leave—to surrender all of it to vegetation and wildlife.

But it is in no one's interests on the Gulf Coast to drive away the many thousands of jobs and billions of dollars generated by this remarkable industrial complex. Rather, it is in everyone's interest that we apply superior technology and superior understanding to the task of safeguarding our environmental resources. This we have done as capably and with as much personal dedication to environmentalism as any group of rational individuals can.

This annual report has highlighted some of the recent accomplishments of which GCA's employees and its Board of Directors are justifiably proud. We hope you share in that pride with us.



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