



TETRAVISION

Fall 2005

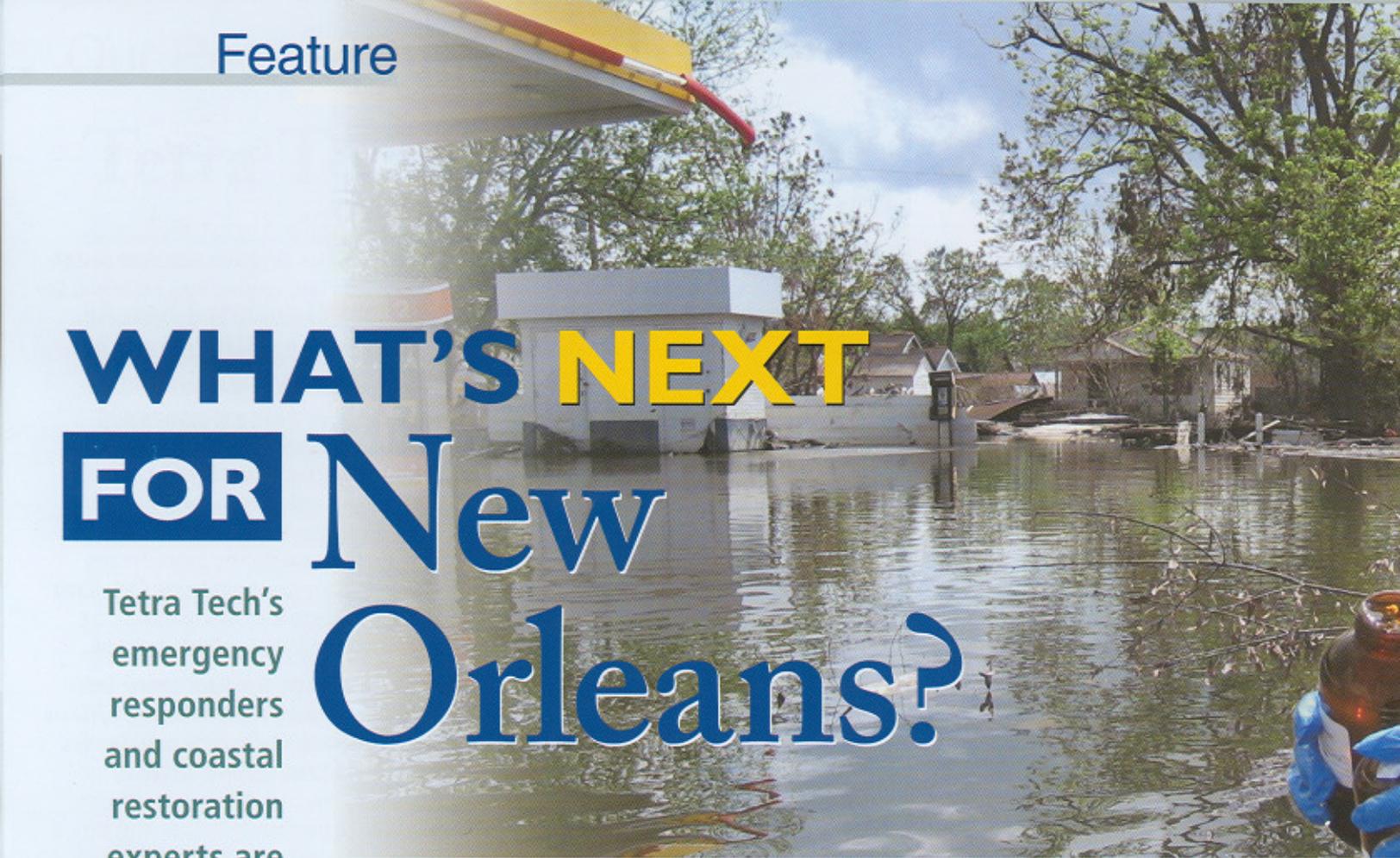


WHAT'S NEXT FOR
NEW
ORLEANS?

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WHAT'S NEXT FOR New Orleans?

Tetra Tech's emergency responders and coastal restoration experts are helping the Gulf Coast recover and rebuild—and prepare for next big storm.

By: HIEU VU &
TALIA STARKEY

Above: Tetra Tech emergency responders performed water sampling for EPA in the aftermath of Hurricane Katrina.

The most destructive hurricane in U.S. history, Hurricane Katrina, made its landfall in Louisiana during the early morning hours of August 29. With peak winds at more than 175 mph, the storm and associated flooding are now believed to have killed more than 1,300 people. Katrina crashed through the coastal regions of Louisiana and nearby Mississippi and Alabama, causing an estimated \$70 to \$130 billion in damage. Subsequently, Hurricane Rita and Hurricane Wilma hit Texas, Louisiana, and Florida compounding infrastructure damage and increasing fatalities.

The recent storms have caused monumental socioeconomic change and environmental havoc. Gulf Coast demographics, economies, ecosystems, and industry remain in flux 3 months after Katrina. The price tag for hurricane damages continues to mount; displaced residents are moving from coast to coast; and Congress is now taking action on bills related to U.S. energy supplies and coastal protection measures.

To date, more than 210 Tetra Tech professionals, including eight Tetra Tech operating units, have worked on hurricane recovery and restoration efforts in the Gulf Coast. Others have volunteered time or money to help those hit hardest by the storms.

Tetra Tech responded on the day Katrina hit and has now performed a full range of services to support the response and recovery effort. In addition, Tetra Tech's coastal resources rehabilitation experts are now working to help protect Gulf Coast residents from next season's storms.

At the Edge of the Storm

During the week of August 21, as media coverage of Hurricane Katrina's impending threat began to build, TtEMI's Hieu Vu (Kansas City, KS) contacted his EPA clients. Tetra Tech was amassing its resources, and a team would be immediately available to support EPA's response needs, Mr. Vu assured his client.

Mr. Vu is the Program Manager for EPA's Region 4 and Region 7 Superfund Technical Assessment and Response Team (START) and Warehouse Operations Support (WOS) contracts. TtEMI had already identified more than 50 people who could quickly respond in the areas most likely to be impacted by the storm. TtEMI also located five recreational vehicles that could be quickly outfitted for the response.

On August 29, shortly after Katrina made its landfall in Louisiana as a Category 4 hurricane with sustained winds of 145 mph, Tetra Tech START received notification from EPA. The EPA requested immediate mobilization

**EPA Contracts Used for
Emergency Response
and Cleanup Support:**

Region 4: START and WOS

**Region 6: START (as a subcontractor) and
Response Action Contract (RAC)**

Region 7: START and WOS

Under the START contract, Tetra Tech has provided critical support to the federal government's emergency response needs, including responses to the



After traveling to the site, emergency responders slept in trailers or on the floor of Tetra Tech's Baton Rouge, LA office because local lodging was unavailable. They did not have shower facilities for days. Weeks later, some moved into local hotels as the situation improved.

Meeting Immediate Needs

Tetra Tech responded at Kiln, MS; Gulfport, MS; Jackson, MS; Mobile, AL; and New Orleans, LA—including staffing and supporting the Unified Incident Management Team, Emergency Operations Center, and Joint Field Office.

Tetra Tech helped with search and rescue efforts as a field observer. Tetra Tech also responded to emergency incidents where releases of chemical and biological agents posed a threat to the public and workers, assisted with community outreach, and performed environmental assessment.

Tetra Tech conducted multi-media sampling to evaluate impacts of the hurricane including air, flood water, outfall water, sediment, and water quality sampling from lakes, bayous, rivers, and drinking water intakes; assisted with establishment of air monitoring stations; and developed sampling QA/QC work plans. Tetra Tech also led household hazardous waste/container recovery efforts and reconnaissance efforts to locate and identify waste sources.

Managing the Need for Information

In the weeks after Katrina hit, Tetra Tech helped EPA with data management and communications efforts. In EPA Region 4, Tetra Tech provided on-site Geographic Information Systems (GIS) assistance to EPA for the entire regional operations.

Tetra Tech applied its cutting-edge Field Assessment and Survey Technology (FAST) tool to gather global positioning system (GPS) data at sampling points and other locations where displaced drums, tanks, and containers were identified. FAST data was uploaded to the EPA Scribe database daily.

"On the ground, there was a sense of hopelessness... That's what really fueled your desire to make a change. You really wanted to kick it up a notch and try to get a sense of order," in the post-Katrina chaos.

— Troy Naquin,
TtEMI Field Team Lead

of Tetra Tech's local resources, including the eight first responders that had already lined up for deployment.

Within 3 weeks, EPA had contracted for the services of more than 150 Tetra Tech personnel under six contracts [see below].

Mobilizing for Response

Tetra Tech's proactive approach to staffing the Katrina response allowed the firm to marshal and mobilize technically competent responders from multiple Tetra Tech offices in many different EPA regions. Tetra Tech enforced a strict vaccination policy to protect its responder employees. While most other companies required only the tetanus vaccination, Tetra Tech required employees to get tetanus, hepatitis A, hepatitis B, and typhoid vaccinations before they entered the field.

"We had about 300 people who were willing and able to assist in the response at some time," said Shanna Damken (Duluth, GA), TtEMI's logistics coordinator for the Katrina response effort. In addition, TtEMI had hired 35 new personnel specifically for the response action.

Responders were asked to bring their hard hats, steel-toed boots, and protective respiratory gear, as well as their own sleeping bags and pillows.

This map shows the home office locations of Tetra Tech's responders for EPA Region 6 (green) and Region 4 (red). Responders came from TtEMI, Maxim, TtNUS, Divisions, GeoTrans, TtEC, and SCM offices. ICD is helping USACE.



September 11, 2001 terrorist attacks in New York City and Washington, DC and anthrax decontamination at the U.S. Senate.

Under the WOS contract, Tetra Tech calibrates, maintains, and inventories millions of dollars worth of government-owned equipment.

Tetra Tech hosted a secure website to disseminate this information and updated GIS maps for responders from multiple federal agencies.

In addition, Tetra Tech processed data collected by the federal government's Airborne Spectral Photographic Environmental Collection Technology (ASPECT) plane.

FL office is leading Tetra Tech's efforts for U.S. Army Corps of Engineers (USACE), New Orleans District's Blue Roof Mission and the Debris Management program.

Under the Blue Roof Mission, USACE installs blue tarps as temporary roof patching for residents whose homes have been damaged in the storms. Tetra Tech obtained right-of-entry forms, provided roof inspections and cost estimating services, and certified satisfactory completion. Hundreds of homeowners in Jefferson Parish, LA alone signed up for this program.

Under the debris management program, Tetra Tech is providing oversight for waste removal including the collection and disposal of vegetative debris, sheet rock, lumber, and other waste strewn throughout residential neighborhoods in Jefferson Parish, Orleans Parish, and Lake Charles, LA by Hurricane Katrina.

Tetra Tech hired 60 new employees from the impacted area to complete this work. The contracts allow Tetra Tech to provide temporary housing for employees in the form of a hotel room or RV. The work provides income to local residents, many of whom lost their jobs and otherwise would not be able to stay in the area.

"It's a win-win situation," Mr. Bomar said. "We're able to serve our clients and serve the Corps, and it's a benefit to the new employees that we are able to offer them a good job and good pay."

Looking Ahead

Louisiana's coastal wetlands, which provide valuable fisheries and wildlife habitat, support commercial and recreational fishing and hunting, and provide storm protection for much of the nation's oil and gas industry infrastructure and commercial ports, took a huge pounding in the recent storms. The need for protecting these resources was dramatically raised in the public consciousness due to the effects of Hurricane Katrina.

Using Tetra Tech's strong record of excellence and customer satisfaction with other USACE districts in the southeast (Mobile, Jacksonville, and Savannah), Eric Dohner (Atlanta, GA), Michael Betteker (Fairfax, VA), and Steven Davie (Atlanta, GA) positioned Tetra Tech for coastal restoration and protection work with

"We had to deal with many issues that weren't really typical for a response effort. The health and safety data was changing on a daily—and even hourly—basis."

— Rick Ecord, TtEMI
H&S Director

ASPECT detects and characterizes hazardous substances released into the air based on differences between the "background" infrared spectrums and the infrared spectrum from ground emissions detected from the plane.

In the Wake of Hurricane Rita

Hurricane Rita made landfall in Texas and Louisiana on September 24 as a Category 3 hurricane with wind speeds of 120 mph and a storm surge of 10 feet. Its storm surge reopened some of the levee breaches caused by Hurricane Katrina a month earlier, and reflooded parts of New Orleans.

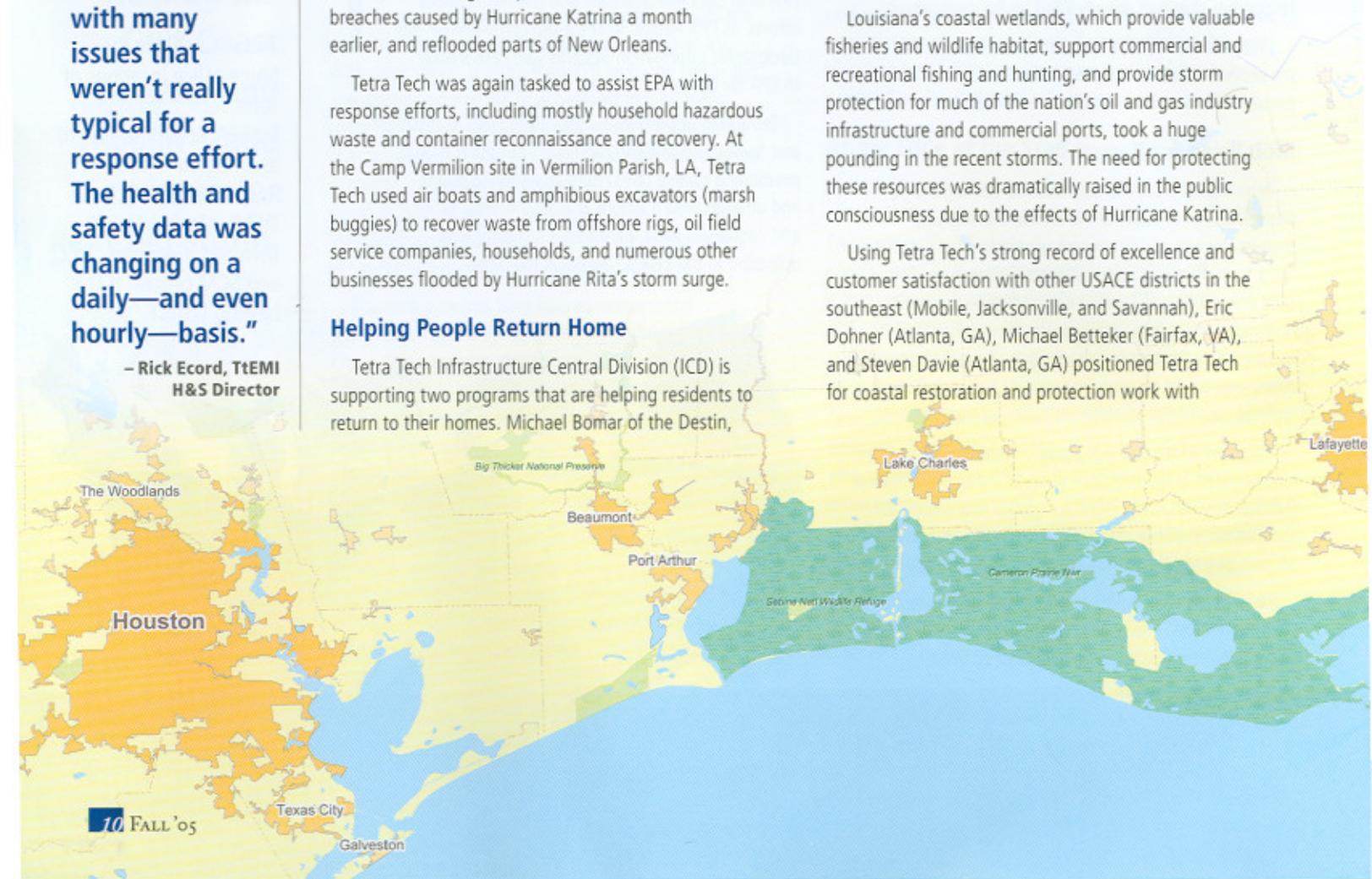
Tetra Tech was again tasked to assist EPA with response efforts, including mostly household hazardous waste and container reconnaissance and recovery. At the Camp Vermilion site in Vermilion Parish, LA, Tetra Tech used air boats and amphibious excavators (marsh buggies) to recover waste from offshore rigs, oil field service companies, households, and numerous other businesses flooded by Hurricane Rita's storm surge.

Helping People Return Home

Tetra Tech Infrastructure Central Division (ICD) is supporting two programs that are helping residents to return to their homes. Michael Bomar of the Destin,



Above: Tetra Tech responders along with federal, state, and local response representatives were photographed with former President George Bush during his visit to hurricane-impacted areas.



the USACE New Orleans District and the Louisiana Department of Natural Resources (DNR). Louisiana's coastal and wetland restoration program may be as big or bigger than the planned Everglades restoration program, and the need for this work has been brought to the forefront in the aftermath of Hurricane Katrina.

The team has leveraged relationships it developed at the New Orleans District to position for other opportunities with USACE. The New Orleans District has executed memorandum of understanding (MOU) that modifies an existing contract with the USAF Air Combat Command to allow Tetra Tech to provide the district with project management support for current and upcoming civil works projects, as well as technical support for projects related to coastal and ecosystem restoration, shoreline protection, flood control, hurricane protection, navigation studies, environmental planning, and other related services. Initially, the MOU could result in as much as \$2 million/year worth of work for the next 5 years.

In addition, Tetra Tech's contacts at the district are interested in expanding their mission beyond civil works to include military installation support. Tetra Tech is using its long relationship with Louisiana installations (Fort Polk and Camp Shelby), as well as teaming with Environmental Research Group, LLC, a woman-owned HUBZone business, to bring military installation support projects to the district.

These efforts are being conducted as part of the Louisiana Coastal Ecosystem Restoration Focus Team's business plan under Tetra Tech's broader Water Initiative. In addition, the focus team is using Tetra Tech's long history of coastal engineering work as a foundation to build a coastal engineering center of excellence

in downtown Baton Rouge, LA to pursue the coastal restoration market in Louisiana, as well as the entire Gulf Coast. These qualifications will be used to target the multitude of coastal restorations projects being conducted under the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) program and the Louisiana Coastal Area (LCA) Restoration program.

The team has worked with multiple Tetra Tech offices and operating units to compile Tetra Tech's best coastal engineering qualifications. DNR and the National Marine Fisheries Service are seeking firms to restore coastal wetlands and repair breaches in barrier islands, wetlands, and tidal inlets in the shoreline formed by the storms; reinforce existing shorelines; and increase the widths of the barrier islands located at the edge of the Gulf of Mexico. Tetra Tech's coastal engineering qualifications are being used to capture this work. The goal is make Tetra Tech the pre-eminent coastal engineering firm in Louisiana and the Gulf Coast.

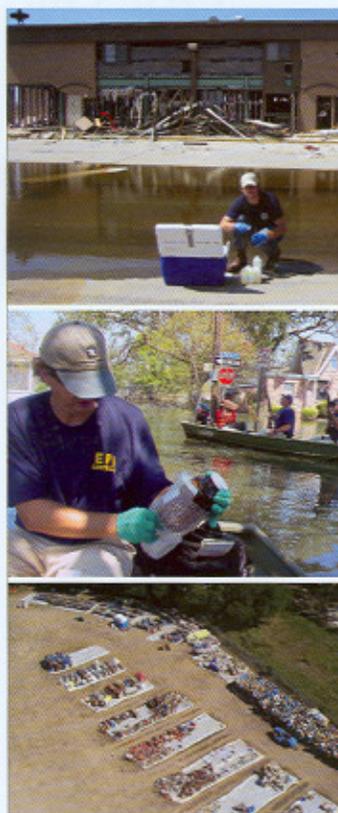
"These houses are just sitting there, with water lines up to the eaves...You don't appreciate the magnitude of the destruction until you're there."

— Michael Bomar,
Project Manager, ICD

What's Next for New Orleans?

Rebuilding New Orleans and the other Gulf Coast areas that were devastated by the recent hurricanes will take many years. Louisiana and the neighboring states face unprecedented economic, environmental, and social challenges as they begin reconstruction and restoration. Tetra Tech supported EPA with its emergency response in the first days after Hurricane Katrina and Hurricane Rita and is now poised to help USACE and other local and federal agencies as they execute their recovery plans.

— WITH EDITORIAL SUPPORT FROM
ERIC DOHNER AND MICHAEL BOMAR



Photos above: Tetra Tech responders conducted multi-media sampling to assess contamination and assisted with collection and segregation of hazardous waste.

