



The Poisoned Gulf

When the **Deepwater Horizon** blew five years ago, a desperate BP flooded the Gulf with oil-dispersing chemicals. Did the cleanup do more harm than the spill?

BY LINDA MARSA

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David Hill never imagined that just doing his job would destroy his life. A fourth-generation fisherman raised in Bayou La Batre, a village on Alabama's Gulf Coast, he also worked as a captain on 500-ton utility ships that service offshore-drilling platforms in the Gulf. The 55-year-old would routinely work from dawn to dusk during four-week-long stints on the water, earning himself and his wife a comfortable lifestyle, with a sprawling house on a 20-acre plot of land. "I had a thriving career and plenty of money in my pocket," he says. "We could do whatever we wanted—eat out, go on vacations."

Then the Deepwater Horizon offshore oil rig exploded, killing 11 people and spewing millions of gallons of oil into the Gulf. Hill joined the armada hastily hired by BP, the British oil giant that owned the rig, to help contain the damage. Hill spent six months on the water, mopping up oil as lead captain on a 210-foot vessel. The acrid smell of petroleum mixed with the chemical dispersants used to break up the oil permeated the air. Hill and his crew were hammered with excruciating headaches, coughing and nausea. "There was no way to escape," he recalls. "The

fumes were so overwhelming they would drop you to your knees."

The well was finally sealed, after 87 torturous days, on July 15, 2010. But Hill's health continued to deteriorate. That November he was hospitalized with pneumonia-like symptoms, and doctors removed an infected lymph node from his left armpit. He was hospitalized again in January 2011 with pneumonia and quarantined in a glassed-in isolation room. He had an infection in his neck the size of a softball and his white-blood-cell count plummeted so low doctors thought he had leukemia. "They told me I had no immune system, and if my wife hadn't brought me in when she did, I would have been dead," he says.

In the years since, Hill has had nine surgeries, including removal of his gallbladder and thyroid. He suffers from severe bouts of diarrhea, stabbing pains that make it impossible to sleep and chronic itching that has left blisters and scars all over his body. He has no energy,

his eyesight is failing, and his short-term memory is shot. No longer able to work, he has had to sell off his possessions and now lives in a mobile home on disability payments of \$1,200 a month while the unpaid medical bills pile up. "I've lost everything," he says, barely choking back tears. "It makes me angry. I just wanted to help clean up the Gulf, and this is what I get for trying."

Hill is not alone. Hundreds, perhaps thousands, of other Gulf residents are stricken with the same constellation of crippling symptoms.

On the surface, the Gulf region appears to

(continued on page 135)

SCENES FROM THE CLEANUP (BELOW). FISHERMAN DAVID HILL (RIGHT) WAS HIRED TO HELP WITH THE CLEANUP; LIKE MANY OTHERS, HE'S BEEN PLAGUED BY HEALTH ISSUES EVER SINCE.





THE POISONED GULF

Continued from page 86

have recovered from the worst environmental disaster in U.S. history. Gone are the glistening slicks of crude that spread over thousands of acres, the brown sludge that inundated marshlands, the dead birds saturated in oil. Vacationers and sport fishermen are flocking to the sandy beaches and blue waters. And the oil business has bounced back, with about 60 deepwater drilling rigs sucking nearly 1.2 million barrels a day from beneath the Gulf.

But look a little deeper, and all across southern Mississippi, Alabama and Louisiana, in the funky tourist meccas that hug the jagged shoreline, in the fishing villages perched along the placid bayous and even in the prosperous towns that are home to petrochemical honchos, you hear the same stories: about once active and energetic boat captains and deckhands, oystermen and crabbers, shrimp fishermen and others who were among the tens of thousands who worked on BP's cleanup operation and whose health has since deteriorated so much they can barely function. Even some of their family members and neighbors, who inhaled the aerosolized chemicals in the air carried ashore by high winds, are sick. They are stricken with migraines, skin rashes, bloody diarrhea, bouts of pneumonia, nausea, seizures, muscle cramps, profound depression and anxiety, and a mental fuzziness so severe they can't drive anymore, much less hold down a job.

The horrific irony is that these illnesses do not seem to have been caused directly by exposure to the oil. Many scientists believe it was the unprecedented use of 1.8 million gallons of dispersants, combined with the crude, that unleashed a toxic brew that has sickened locals with chemically induced illnesses doctors are unable to treat. The very stuff that was supposed to protect the Gulf and its people may have done more damage than the spill itself.

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After the well blew, BP and federal regulators were faced with hard choices, none of them good. The safest methods to prevent all that oil from reaching the shore and destroying fragile coastal ecosystems, such as skimmers that soak up surface oil like giant sponges, just weren't available on the scale needed. The decision was made to carpet bomb the spill with dispersants, especially one called Corexit, a chemical compound used to break crude oil into tiny droplets

that are heavier than water so they can sink to the ocean floor or be eaten by tiny oil-chomping organisms.

Within a week after the spill, tens of thousands of gallons of Corexit were being dumped into the Gulf from C-130 airplanes and blasted into the gushing wellhead by subsea robots. Everyone knew there would be consequences, but officials judged it a risk worth taking. “It’s a trade-off decision to lessen the overall environmental impact,” Jane Lubchenco, director of the National Oceanic and Atmospheric Administration, told reporters at a news conference in May 2010, a few weeks after the accident. “When an oil spill occurs, there are no good outcomes.”

Both BP and the Environmental Protection Agency insist Corexit is safe. “The same ingredients contained in Corexit are also found in common consumer products such as household cleaners, food packaging, hand lotion and cosmetics,” says BP spokesperson Jason Ryan.

But in 2013, investigators from the Government Accountability Project, a whistleblower group, obtained a safety manual issued by NALCO, the maker of Corexit, spelling out the chemical’s health hazards. It warns that Corexit 9527 (which was used until supplies ran out and BP switched to Corexit 9500, considered less toxic) is an “eye and skin irritant. Repeated or excessive exposure...may cause injury to red blood cells (hemolysis), kidney or the liver.” The manual adds that “excessive exposure may cause central nervous system effects, nausea, vomiting, anesthetic or narcotic effects” and advises users to “wear standard protective clothing.” The compound also contains 2-butoxyethanol, a toxin linked to cancer, respiratory and nervous system damage and neurological problems found in many workers exposed to Corexit during the *Exxon Valdez* cleanup.

In combination with oil, Corexit becomes even more dangerous. Crude oil itself contains dangerous chemicals—heavy metals, benzene, hexane, toluene—which can cause leukemia and lymphomas and destroy parts of the brain that regulate memory and motor skills. Corexit and oil together are synergistic, with the dispersant acting as an oil-delivery system, breaking down the crude so the toxins can seep through our skin. “The smell of crude is bad, but when it was mixed with dispersants, I had to clear my crew off the decks, it was so strong,” says Hill. “All of a sudden I’d have a severe headache and blurred vision. I noticed that we all had stronger headaches, sickness and nausea when we were around the dispersed oil.”

Worse, as water on the ocean surface evaporates, the oil and dispersants “become toxic hitchhikers on the water molecules and particulates in the air,” says Riki Ott, a marine toxicologist who has researched the *Exxon Valdez* and Gulf oil spills. Soon after the well ruptured, fierce winds and turbulent seas conspired to transport the tainted air inland, leaving a thick, oily residue on windshields, marsh grasses, outdoor furniture and homes up to 300 miles from the coast.

Nothing to worry about, BP insists. “Extensive monitoring conducted by federal agencies and BP show that response workers and the public were not exposed to dispersant compounds at levels that would pose a health risk,” says BP’s Ryan. The Coast Guard, the U.S. Occupational Safety and Health Administration and BP collected more than 30,000 air-monitoring samples from late April to October 2010. Results showed that exposures to hazardous chemicals were below levels that posed safety concerns, according to OSHA.

But Shanna Devine of the Government Accountability Project believes that BP and the government’s characterization of Corexit was “highly misleading and irresponsible.” A two-year investigation by GAP and the Louisiana Environmental Action Network (LEAN) found dozens of people who experienced an array of health issues that seemed to be related to the spill. A long-term National Institutes of Health study launched in June 2010 that is tracking 33,000 people who were exposed to the combined oil and Corexit has already found high rates of respiratory problems, skin conditions and profound depression and anxiety; further results are pending. Meanwhile, a University of Alabama study published in April found Corexit 9500 may damage human lungs.



By November 2010, Marylee Orr, LEAN’s executive director, was overwhelmed. “I was getting calls from frightened people at two A.M. because they were vomiting four and five times a day and suffering from anal bleeding, seizures and chest pains,” she says.

She called Dr. Michael Robichaux, an ear, nose and throat specialist in south Louisiana and a former state senator, for help. “In 40-odd years of practicing medicine, I had never seen anything like this,” says the 70-year-old physician as he flips through a stack of medical files on the inlaid wooden table in his kitchen in Raceland, Louisiana. By year’s end, the waiting room in his office was filled with sick people from all over the Gulf.

Because most of them didn’t have health insurance, Robichaux, a Marcus Welby clone with a full head of gray hair who’s known widely as Dr. Mike, set up a makeshift clinic in the bottom floor of his home and treated them pro bono. Initially, he was skeptical that their problems were related to exposure to the mix of oil and Corexit, but he gradually became convinced.

Robichaux worked closely with LEAN to do blood tests on more than 100 people, including cleanup workers, divers and residents of coastal communities that had been sprayed with Corexit. Many of the chemicals found in crude turned up in the blood samples. Robichaux’s patients all had remarkably similar symptoms—irritability, memory loss, headaches, dizziness, excessive fatigue, blurred vision and acid reflux, which was striking since they came from different parts of the Gulf.

Jorey Danos was one of them. Blood tests found disturbingly high levels of

chemicals linked to the oil spill in Danos's system. Thin and wiry with dark hair and eyes, his arms and neck covered in tats, he's a bundle of nerves. He paces in front of the tidy mobile home he shares with his wife and three children on a quiet street in Thibodaux, Louisiana, puffing on a cigarette. His life, he says, "has become a living hell."

The 33-year-old former construction worker took a job as a deckhand on one of the cleanup boats because the money—\$300 a day—was too good to pass up. He spent three months working on the water. He became concerned about breathing in the "pungent air," but when he repeatedly asked for a respirator, he was told he'd be fired if he wore one. BP, he was told, didn't want the news media seeing workers with protective gear.

BP insists it didn't stop workers from using protective gear, but nearly half the cleanup workers GAP interviewed reported they were threatened with termination when they tried to wear it. BP also says it never sprayed cleanup crews directly. Danos says he was doused with dispersant on four separate occasions over the summer of 2010. "It was a spray like a fire hose raining down from the sky," he recalls, "with no way to escape."

One evening that fall, as Danos was driving home, he was stricken with such excruciating abdominal pains that he had to pull over. It felt like someone was stabbing him in the stomach. Afterward, his health went seriously downhill. Boils erupted on his neck, he couldn't sleep or be out in the sun, and he suffered from seizures and momentary mental blackouts. Today, Danos is no longer able to work and takes an arsenal of pills to get through the day. The family is surviving on his scant disability payments. "Doctors say I have about five years to live," he says grimly.

In 2012, BP agreed to a \$7.8 billion medical settlement that would compensate victims up to \$60,700 per person and left the door open for people to file further claims if they developed more serious problems. (Corexit's manufacturer, NALCO, was found not legally culpable for any harm caused by its product, since its role was simply to provide it to BP.) More than 10,600 victims have filed, according to the latest figures from the claims administrator. About 724 claims have been paid, for a total of \$1,352,250, while another 2,137 claims were denied. The rest have so far been deemed "incomplete"—mostly due to a lack of medical records or other backup documentation.

Many locals, especially those who work in cash-based enterprises such as fishing and tourism, don't have medical insurance or access to regular doctors, which makes it difficult to prove damages. And the situation is even worse under Obamacare: Because the Gulf states—Mississippi, Alabama, Texas, Florida and Louisiana—turned down the extra Medicaid dollars offered under the Affordable Care Act, hundreds of thousands of residents have actually lost their health insurance because they make too much money to qualify for

government subsidies but can't afford to pay out of pocket. Plus, only about 64 physicians in the entire Gulf region, according to a recent survey, are toxicologists trained to deal with these types of ailments, which makes things doubly difficult. "BP's game is to require such a high level of proof that it is just unattainable," says Joel Waltzer, a well-known New Orleans environmental attorney. Many have opted out of the settlement, calling it paltry payment given the gravity of their injuries, and are pursuing individual lawsuits.

To make matters worse, medical science can't do much about chemically induced illnesses. "You can alleviate the symptoms, but there is no treatment," says Katherine Kirkland, executive director of the Association of Occupational and Environmental Clinics in Washington, D.C., who is helping to set up medical clinics in the region with the aid of \$105 million provided by BP as part of the settlement.



Humans aren't the only ones still suffering from the spill's aftermath. Oyster beds and coral reefs have yet to recover, crabs still drip with oil, fish are sickly, and dolphins are dying in record numbers. In fact, more than 1,300 marine mammals, mostly bottlenose dolphins, have been found dead or stranded since the spill, according to an analysis earlier this year by the Marine Mammal Foundation. Other research has found that dolphins in oiled areas are underweight and anemic and have lesions on their liver and adrenal glands.

Mixing the spilled oil with dispersants made the poisonous components of the oil more of a threat to marine life. Georgia Tech researchers, in a 2013 study, found that combining Corexit with crude makes the oil 52 times more toxic to tiny marine organisms that are crucial strands in the aquatic food web. "It exposes the ecosystem to toxins it wouldn't have been exposed to before," says Rick Steiner, a marine scientist who helped with the Gulf cleanup and consults on oil spills all over the world. Fish won't swallow oil in large globs, but when it's broken down into tiny particles, it is more easily absorbed into their systems. The dispersants also enable oil, which is buoyant and normally floats to the surface, to drift down to the ocean floor. A study by Florida State University published in December 2014 detected as much as 10 million gallons of crude carrying the tell-tale chemical fingerprint of the Macondo oil buried in the Gulf's sediment. There, it becomes food for organisms at the bottom of the food chain, eventually working its way up into shrimp, oysters and crabs.

Ollen Blanchard deals with the results every day. "Look at these crabs," says the courtly 70-something crab wholesaler with slicked-back hair and a thick Cajun accent as he holds two pieces of fresh meat. We're inside a dockside crabbing shed in Chauvin, a tiny bayou hamlet in south Louisiana, where three workers arrayed around a long metal table use special knives to pull the shells off dozens of the

freshly caught crustaceans, readying them for shipment to markets all over the Gulf.

One piece of crab in Blanchard's slender fingers is fluffy and white, but the other is slimy and sickly gray. "That's oil," says Blanchard. He estimates up to 20 percent of the crabs are spoiled. He's lost as many as 300 in a night. "They just die in the tanks and we find them in the morning," he says.

For Byron Encalade, the oil spill may be the death knell for Plaquemines Parish, a historically black region just southeast of New Orleans where his family has lived since the 1800s. The town's marina was once a thriving hub where thousands of pounds of catch were bought and sold daily. A normal season would produce millions of oysters.

But since the disaster, the fisheries have collapsed. "My community is now basically in poverty," says Encalade, president of the Louisiana Oystermen Association. A powerfully built six-footer with a genial moon face and a deliberate way of speaking, he once ran an oyster business that grossed up to \$500,000 a year with five boats and a couple of 18-wheelers hauling seafood up and down the coast. Now the 60-year-old fisherman has drained his savings and lives with his father. "Otherwise," he says, "I'd be homeless."

BP maintains that flooding and freshwater intrusions from the Mississippi River after the spill are to blame for the loss of the oysters, which require brackish water to survive. But marine scientists like Ed Cake, whose OYSTER 1 license plate is a familiar sight along the Gulf Coast, think otherwise. A layer of oil remains in the shallow waters, he observes. "It may be another five to 10 years before the oyster beds recover, if they do at all," he says.



On a brisk, overcast November morning on Bayou Yscloskey, a sliver of water about 30 miles south of New Orleans, George Barisich, a 58-year-old fisherman, stands over the stove in the galley of his 56-foot trawler. He deftly soaks freshly peeled shrimp in whipped egg yolks, then dredges them in flour before flipping them into a deep fryer. Barisich has been up since daybreak unloading his latest catch: more than 6,000 pounds of shrimp rounded up over the course of five days out on the Gulf.

Barisich participated in BP's cleanup program. That Christmas, he was stricken with severe pneumonia that left him bedridden for 30 days, and his lung capacity is now permanently diminished. Like many Gulf residents, Barisich, who is also president of the United Commercial Fishermen's Alliance, thinks the cleanup was nothing more than a cover-up. "We were told it was an oil spill," he says. "But this was a frigging geyser. Everybody was hiding the volume right away, because they know that the more oil that shows up and gets collected, the more the fines are going to be."

Indeed, BP faced stiff penalties for every barrel of oil it was responsible for leaking into the Gulf, giving the oil giant

“a tremendous economic incentive to use dispersants to hide the magnitude of the gusher,” says Hugh Kaufman, senior policy analyst with the EPA’s Office of Solid Waste and Emergency Response. In September 2014, U.S. District Judge Carl Barbier found BP guilty of gross negligence, which means the company is liable for pollution fines under the Clean Water Act that could total as much as \$13.7 billion.

The dispersants, critics contend, allowed BP to mask how much oil originally leaked into the Gulf. “We used to call Corexit ‘Hides It,’” says Rick Steiner. “Dispersants are the industry’s default go-to tool, but it’s all PR spin because it looks like something is being done.”

These chemicals also diminished the total volume of oil that could be traced back to BP. “Using Corexit makes it more difficult to trace any lingering oil in the Gulf back to what gushed from the Macondo well,” says Scott Porter, a marine biologist with Louisiana Universities Marine Consortium. “Corexit works swiftly in the environment and erases the oil’s signature by breaking down the oil’s tell-tale fingerprint.”

To be fair, BP did spend more than \$14 billion on the cleanup. At its peak in 2010, more than 48,000 people were deployed and nearly 100,000 worked on the cleanup in total; a fleet of 6,500 ships and approximately 2,500 miles of boom to contain or absorb the oil were dispatched, according to BP’s estimates.

On the other hand, the company also lied baldly to the press, the public and the government about how bad the spill was. As part of a 2012 criminal settlement that called for BP to pay \$4.5 billion in criminal fines and other penalties, the company admitted that it withheld documents and provided false information to Congress on how much oil was flowing. Initially, the oil giant lowballed the numbers and claimed only 1,000 barrels a day were leaking, even though internal company estimates indicated that up to 60,000 barrels a day were gushing out, according to documents BP later provided to congressional investigators. If more accurate information had been available earlier, “the response to the spill may well have been different... and successful containment and capping strategies could have been developed and deployed more quickly,” Edward Markey, chair of the House subcommittee probing the BP spill, noted later. Markey also called the untested underwater use of such a large volume of dispersants a “science experiment.”

BP also barred journalists from oil-soaked beaches, asked cleanup workers and scientists conducting BP-funded research to sign confidentiality agreements and even had in-house discussions about attempts to “direct” and “influence” scientific research studies, according to a series of e-mails Greenpeace obtained under the Freedom of Information Act. “You could not speak about what you saw,” says George Barisich of the cleanup program. “That was one of the rules. Otherwise you’d lose your job.”

Last March, BP issued a report claim-

ing that the spill didn't cause a "significant long-term impact" to Gulf wildlife and fisheries and that the massive cleanup was largely successful in limiting the spill's damage. But government officials and environmentalists dismissed the report for cherry-picking its information. "BP misinterprets and misapplies data while ignoring published literature that doesn't support its claims," declared the Natural Resource Damage Assessment Trustees, a group of states and federal agencies charged with evaluating the spill's impacts.

The EPA is currently holding public hearings about the use of dispersants to contain the environmental damage of future oil spills—which are inevitable, given the upsurge in deepwater drilling and our unquenchable thirst for fossil fuels. No one has more at stake than Gulf communities. There, residents pride themselves on being hardy, resilient and independent, melded together over generations in tightly knit communities that sit squarely in the hurricane belt. They've defiantly rebuilt in the face of one natural or man-made calamity after another. But decisions made in those first panic-filled weeks after the Macondo well blew may have doomed countless people, animals and ecosystems and destroyed a way of life that has endured for centuries. "When a hurricane goes through, it damages everything. But it's here today and gone tomorrow, and then you start picking up the pieces," says Wilma Subra, a noted environmental chemist with LEAN. "This is a whole different ball game, because the destruction just keeps going and going. People are too sick to work. They don't have health insurance. They've lost their homes. They've lost everything."

People like David Hill. "I loved working in the oil fields and on the boats, but I can't any longer," he says. "When I see that stuff on TV about how BP made this a better place, it makes me angry."

