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Assigning a Cost to BP's Gulf Oil Spill: Four Years on, Debate Continues

By Dahr Jamail
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In-depth Report: THE BP OIL SLICK

Smoke plumes from spill-response crews gathering and burning oil in the Gulf of Mexico near the site of the leaking Macondo well after the Deepwater Horizon disaster, June 22, 2010. (Photo: Dr. Oscar Garcia / Florida State University)

In April 2010, the Deepwater Horizon drilling platform exploded, causing the single largest marine oil disaster in US history.

While the oil gushed from nearly a mile below the surface, BP promptly began to lowball the daily flow rate.

The US government established the Flow Rate Technical Group (FRTG) led by Marcia McNutt to determine the true amount of oil being injected into the Gulf of Mexico. The FRTG was composed of scientists from the National Oceanic Atmospheric Administration (NOAA), the US Geological Survey, the Bureau of Ocean Energy Management, Regulation and Enforcement, the US Department of Energy and outside academics.

According to the FRTG, BP's disaster led to at least 4.9 million barrels of oil being injected into the Gulf of Mexico. BP has challenged this calculation for numerous reasons, including asserting that this figure includes 810,000 barrels that was collected before it could enter the Gulf.

Yet a scientist who is part of the FRTG said early on that even the 4.9 million barrel figure, which means an average of roughly 56,000 barrels per day during the 87 days BP's oil flowed, could be nearly three times too low.

"BP's own estimate for a freely flowing pipe in their oil spill response plan was 100,000 to 140,000 barrels per day," Dr. Ira Leifer, a professor at the University of California, Santa Barbara, told Truthout at his office. "This is according to the calculations they submitted to the government, as part of their permitting process," which BP said was their worst-case scenario.

Leifer was all over the media while BP's well was gushing, and said he decided to do so because BP was not being forthcoming with data so his team could do their work.

And since BP wasn't being open, Leifer decided to use BP's own figures.

"And at the time of the spill, my point was that I don't know what the exact rate was, that if we had good data, we could estimate it, and since I don't know, why don't we use BP's own numbers for their spill?" he said. "The key point was, that it was not my estimate; it was

BP's own estimate. And that estimate was accepted by the government, in their certification process, as realistic and legitimate."

During a June 11, 2010, interview with Wolf Blitzer on CNN, Leifer used BP's worst-case scenario estimate during a time when only poor video quality was available.

"Later, high quality video became available and I agreed and signed off with the team final report value which estimated 60,000 [barrels per day]," Leifer said. "That estimate was based on our team's work with the best information available at the time. Thus, it was less than the BP worst-case scenario in their filed oil spill response plan."

When asked if he knew how BP came up with the worst-case scenario numbers, Leifer said he has no idea, but assumed BP had proper methods.

"They [BP] have the best experts for reservoir oil migration," he said. "That is their business. I just assume they do it correctly."

Yet the actual flow rate remains in question.

$52 Billion in Fines?

The trial against BP is ongoing, and last month the oil company was found "grossly negligent" for its role in the disaster.

This means the exact amount of oil the company released into the Gulf is even more important, because their fines under the Clean Water Act have increased dramatically.

Under the act, the basic fine is $1,100 per barrel spilled. But since BP was found grossly negligent, the fine can rise to as much as $4,300 per barrel.

If the lower figure of 4.9 million barrels spilled is used, BP will pay fines exceeding $21 billion for gross negligence versus $5.39 billion in fines, had negligence not been found.

Using BP's worst-case scenario flow estimates of 140,000 barrels per day, which would mean not 4.9 million, but 12.18 million barrels of oil were released, BP's fines would be $52.374 billion.

This is in the wake of already having pleaded guilty to the spill, wherein BP has agreed to pay the government $4.5 billion to settle criminal charges in the case.

BP also agreed in 2012 to settle damage claims by businesses and individuals for about $7.8 billion.

In the immediate aftermath of the disaster, Rep. Ed Markey (D-Massachusetts) and former EPA administrator Carol Browner both accused BP of having an obvious vested financial interest in downplaying the size of the spill due to the fine they would have to pay based on the amount of oil released.

In a December 3, 2010, statement, BP claimed the US government and Leifer's team had overestimated the size of the spill by between 20 and 50 percent.

A document submitted by BP to NOAA and the Justice Department said: "They rely on incomplete or inaccurate information, rest in large part on assumptions that have not been

validated, and are subject to far greater uncertainties than have been acknowledged."

Markey, a member of the House energy panel that investigated the spill, said in a statement that BP has done whatever it could to avoid revealing the true flow rate of the spill. "With billions of dollars at stake, it is no surprise that they are now litigating the very numbers which they sought to impede."

In December 2010, a BP spokesperson saidthat BP "fully intends to present its own estimate as soon as the information is available to get the science right."

Leifer was restricted in what he could discuss with Truthout regarding the current state of the trial against BP, because he is involved in the trial in his capacity as a member of the FRTG. But he could talk about what has already been mentioned in the media.

"In the data I've seen, there's nothing inconsistent with BP's worst-case scenario,"Leifer told McClatchy in June 2010.

Leifer has said that based on satellite data he'd examined, the rate of flow from the well had been increasing over time, especially after BP's failed "top kill" effort. After that, the decision by BP to sever the well's damaged riser pipe further increased the flow to a rate far higher than the 20 percent that both BP and the Obama administration had predicted at the time.

Leifer is a member of an exceedingly small community of scientists qualified to measure the flow rate of BP's disaster, perhaps because it does not behove oil and gas companies to fund the studies of scientists who could investigate the scope of their accidents when they occur.

"Prior to DWH [Deepwater Horizon], I was one of a very small group of researchers who had measured flux in the deep sea, of oil and gas coming out of natural seeps," he told Truthout. "Our community numbers, at the time, probably five or 10 for the whole planet. The funding was always tight, so to put it simply: not a lot of money, not a lot of scientists."

It is clear that the flow rate during BP's disaster, to be decided in court, will ultimately determine the amount of fines the oil giant will pay.

"Based on what the flow rate is, this determines the fines, so flow equals dollars," Leifer added. "Certainly the interest of the flow team was to be the most accurate. Other entities on both sides might prefer within reasonable error bars, higher or lower, bigger fine or lower fine, depending on which side of the litigation they sit. I really can't get into anything other than that."

Ongoing Impacts

BP and its supporters claimed that massive amounts of oil from spills are comparable to the amount of oil released from natural seeps across the bottom of the Gulf. However, deep-sea researcher Dr. Samantha Joye has revealed that the Gulf seafloor releases approximately 0.04 million gallons of oil and gas per day throughout the entire Gulf.

In contrast, BP's disaster – according to the lower estimate that is currently in question – released 2.5 million gallons of oil, daily for 87 days. Joye's research has revealed that naturally occurring microbes were not in any way equipped to digest a significant portion of

this oil that was released, despite claims of BP supporters that they had done so.

Joye also revealed deep-sea oil plumes in the Gulf, including one as large as 10 miles long, three miles wide and hundreds of feet thick. The plumes ranged in depth, from the shallowest being around 2,300 feet, and the deepest near the seafloor at around 4,593 feet. Some of her colleagues at the University of Georgia confirmed that the oil occupied multiple layers of the water column in the Gulf, and that the plumes were obviously from the disaster.

Marine scientists from the University of South Florida (USF) discovered a 22-mile long oil plume, stretching from the leaking wellhead toward Mobile Bay, Alabama. It has since been confirmed that the dispersants sprayed on the oil, both from the air and down at the wellhead itself, caused the vast majority of the oil to break into tiny droplets and never reach the surface. By July 2010, researchers from both USF and NOAA confirmed via two separate studies that subsea oil plumes were from BP's disaster.

Dispersants used on the oil also caused it to be more readily spread, more deeply, into the ecology of the Gulf, and ingested into marine life of all sizes.

In response to these studies, BP stated its sampling showed no evidence that oil was massing and spreading in the Gulf water column.

NOAA chief Jane Lubchenco, who had consistently defended BP's claims, urged caution, calling the reports "misleading, premature and, in some cases, inaccurate."

Scientists from both USF and the University of Southern Mississippi said that when they brought the evidence of deep-sea plumes to NOAA and the Coast Guard, the government tried to suppress their findings. According to Vernon Asper, an oceanographer at the University of South Georgia, "We expected that NOAA would be pleased because we found something very, very interesting . . . NOAA instead responded by trying to discredit us."

Despite pushback from the US government and BP, by September 2010, Joye announced her team's findings of a thick layer of oily sediment stretching from dozens of miles in all directions from the wellhead, showing that large amounts of the oil had not dispersed, but had actually settled to the seafloor.

By 2013, scientists at the Gulf of Mexico Oil Spill and Ecosystem Science Conference reported that as much as one-third of the oil may have been mixed with deep ocean sediments and dragged to the bottom of the ocean floor where it remains, potentially damaging ecosystems and commercial fisheries for years to come.

Researchers at the University of South Florida also confirmed that BP's oil, swept along by underwater currents, had been found across the Gulf of Mexico, and as far east as off the coast of Tampa, Florida. The scientists also confirmed that oil had landed on the West Florida shelf that extends several miles into the Gulf, and was expected to remain there for years to come.

Most recently, a study published in the Proceedings of the National Academy of Sciences, a peer-reviewed US journal, showed that around 2 million barrels of oil from BP's disaster are believed to have settled on the seafloor.

Consistent with how BP provided lower estimates of the flow rate of their blowout well, the

company took issue with the findings and methodology used by the researchers, and said the impacted area was overestimated.

“The authors failed to identify the source of the oil, leading them to grossly overstate the amount of residual Macondo oil on the sea floor and the geographic area in which it is found,” according to a statement from BP spokesman Jason Ryan.

AFP reported on the study that, “Researchers analyzed samples collected at more than 500 locations around the Macondo Well, where the leaked oil emerged, and found it had spread widely, settling down like dirt in a bathtub. The oil was found to have spread as far as 3,200 square kilometers (1,235 square miles) from the site, and may have gone even further.”

“Our analysis suggests the oil initially was suspended in deep waters and then settled to the underlying sea floor,” according to the study by the University of California, Santa Barbara; the Woods Hole Oceanographic Institution in Massachusetts; and the University of California, Irvine.

The National Science Foundation, which funded the study, stated, “hopane was concentrated in a thin layer at the sea floor within 25 miles of the ruptured well, clearly implicating Deepwater Horizon as the source.”

Study author David Valentine, of the University of California, Santa Barbara, said, the process likely led to the damage of deep sea corals. “The pattern of contamination we observe is fully consistent with the Deepwater Horizon event, but not with natural seeps – the suggested alternative.”

Earlier this year, the National Wildlife Federation said that scientific studies on 14 different types of creatures impacted by the spill show that long lasting harm was done to dolphins, sea turtles, tuna, loons and other animals in the region.

Long lasting impacts to marine animals and their habitats in the deep sea are now evident, and in all of these studies the authors point out that change is exceedingly slow at the bottom of the Gulf, taking decades in many cases. The footprint of BP’s disaster has been shown to extend well beyond the Gulf of Mexico, and in fact reaches well into other parts of the Atlantic Ocean and the North American continent.

Even if BP is fined $52 billion for their disaster, this massive amount of money cannot reverse ecological impacts from which scientists estimate the Gulf will take decades to recover.

“My prediction is that we will be dealing with the impacts of this spill for several decades to come and it will outlive me,” Dr. Ed Cake, a biological oceanographer, as well as a marine and oyster biologist, told Truthout. “I won’t be here to see the recovery.”

“You Cannot Engineer Accidents Away”

When it comes to the question of whether or not there will be oil disasters in the future, Leifer is not optimistic.

“There always will be oil spills because you cannot engineer accidents away,” he said. “You can reduce them, and you can hopefully decrease their damage, but it always depends on nature, circumstance, and so on, so there is no way you can make a perfectly safe

anything."

This does not bode well, given the ongoing push by oil companies and governments to drill off the coasts of Greenland, and up in the Arctic.

"The probability is that the next spill that involves some seabed leak will be different," Leifer added. "Maybe it'll be in the Arctic, maybe it'll be in deeper water. Certainly there is enormous potential to learn from the Deepwater Horizon in a general sense, to apply that knowledge to the next spill."

Leifer believes that ongoing oil spill trainings, and research into their capabilities and methodologies, would be valuable in the wake of such a major oil disaster as BP's.

"But I've not heard of plans being made to do similar oil spill response practice testing for the deep sea, so there could be a group of consortium members who have an institutional knowledge who can respond to this kind of unique – but not impossible to happen again – accident," he said.

Regardless, questions and concerns about the BP disaster remain for scientists studying the ecological impact of this huge spill.

Leifer also remains troubled by the health legacy suffered by those exposed to the chemicals in BP's oil and dispersants from the spill in the Gulf of Mexico.

"I remain concerned about the human health impact of this spill," he said. "Not for want of trying, but [I] am still trying to get support to study this more, but that doesn't mean the health effects aren't persisting."

***Dahr Jamail**, a Truthout staff reporter, is the author of The Will to Resist: Soldiers Who Refuse to Fight in Iraq and Afghanistan, (Haymarket Books, 2009), and Beyond the Green Zone: Dispatches From an Unembedded Journalist in Occupied Iraq, (Haymarket Books, 2007). Jamail reported from Iraq for more than a year, as well as from Lebanon, Syria, Jordan and Turkey over the last ten years, and has won the Martha Gellhorn Award for Investigative Journalism, among other awards.*
