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ECONOMIC AND ENVIRONMENTAL IMPACTS OF THE RECENT OIL SPILL IN THE GULF OF MEXICO

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

SECOND SESSION

MAY 11, 2010

Printed for the use of the Committee on Environment and Public Works



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ONE HUNDRED ELEVENTH CONGRESS
SECOND SESSION

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ECONOMIC AND ENVIRONMENTAL IMPACTS OF THE RECENT OIL SPILL IN THE GULF OF MEXICO

TUESDAY, MAY 11, 2010

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The full Committee met, pursuant to notice, at 2:30 p.m. in room 406, Dirksen Senate Office Building, Hon. Barbara Boxer (Chairman of the full Committee) presiding.

Present: Senators Boxer, Inhofe, Baucus, Carper, Lautenberg, Cardin, Klobuchar, Whitehouse, Udall, Merkley, Specter, Vitter, Barrasso, and Alexander.

OPENING STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. We are going to get started. Senator Inhofe has informed me we have five votes that may start at 3:30, so we are going to get through as much as we can.

What we are going to do is try to keep our opening remarks to 3 minutes if we can. And if you give up your opening statement, you will get that extra 3 minutes added onto your question time. So, that is how we will go. We will start off by hearing from colleagues on the Committee, and then we will turn to our distinguished panel of Senators.

Today we will hear about an oil spill that could be one of the greatest environmental disasters our Nation has ever seen. My heart goes out to the families of those who lost their lives.

Our ocean environment is not only a God given treasure and our legacy; it is also a great economic asset. In California, for example, ocean-related tourism, recreation and fishing generate $23 billion in economic activity each year and support 390,000 jobs. California's 19 coastal counties account for 86 percent of the State's annual economic activity, or more than $1 trillion. Nationwide, we are talking about $130 billion of economic activity on our beautiful coasts and 2.4 million jobs annually.

Louisiana is the largest seafood producer in the Lower 48 with a total economic impact of $2.4 billion. Recreational fishing in Louisiana generates an additional $1 billion in retail sales a year. The Gulf Coast is also home to remarkable wildlife refuges. One of the first refuges, Breton National Wildlife Refuge, was established by Teddy Roosevelt to protect the numerous species of birds that use the islands for nesting and wintering.

We are all united in our top priority, stopping the spill, cleaning up the oil, and protecting the threatened and natural resources of the region.

As I analyze what happened here and the policies and practices surrounding offshore oil drilling, a number of issues come to the forefront.

First, it is imperative that the impacts to businesses, jobs and environment are taken care of quickly. Those responsible must provide the resources, and that means we need to change the law regarding limits on liability. This idea has strong support, and I will work with my colleagues to move forward with legislation as soon as possible.

Second, I am pleased that Interior Secretary Salazar is already discussing separating mineral extractions responsibility from safety and environmental oversight. I have already discussed this idea with Energy Committee Chairman Bingaman, and I believe we will work together on legislation. And there is a strong argument for supporting this separation. The MMS found that any type of spill was remote, the impacts limited, and therefore MMS supported categorical exclusions on a site by site basis. Categorical exclusions. BP said, in its oil expiration plan, there would be no significant impact on any natural resources, and MMS went along.

In addition, I am concerned that reports of corruption in MMS, including illicit activities which were brought out by a press investigation, could have played a role in these decisions in this approach, and I will introduce, without objection, the IG report into the record.

Clearly, stronger, more independent oversight of oil company activities is needed. With so much of the region's economy at risk, why were exploration plans and environmental documents prepared with little to no analysis of the threat of a serious spill?

Third, has the push to drill in ultra-deep water and expand exploration outpaced the oil companies' ability to respond to oil spill disasters in waters so deep they have been described as inner space?

A fourth area of great concern to me is the lack of sufficient back-up safety systems. How do you go ahead and hold a party on a rig to celebrate safety when you do not even have an effective plan in case the blowout preventer fails?

Sixth, I am concerned about the cement application since I have learned that it could have been a cause of a serious blowout on Australia last year. I want to find out more about the condition of the cement, the companies' experience and practice in carrying out this sensitive part of the operation.

This Committee has an important role to play. It is responsible for a number of areas directly related to the oil spill, including the Oil Pollution Act, environmental aspects of Outer Continental Shelf lands, air and water pollution, fisheries and wildlife, and regional economic development through the EDA.

So, today's hearing is just the first step in this Committee's oversight of the oil spill in the Gulf. Next week we will have a hearing with Administration officials to get even more answers.

Moving forward, we all must work together to stop the spill, repair the damage and find out why it happened so that nothing like this ever occurs again.

I look forward to the testimony from all our witnesses.

Senator Inhofe.

[The referenced report was not received at time of print.]

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Thank you, Madam Chairman.

I agree with you that our prayers are with the families and loved ones that were lost. And I want to recognize all the men and women of the oil and gas industries who work every day to provide the energy to fuel America. And another thanks to all of the volunteers from the conservation groups to fisherman to Gulf Coast residents who are helping with the response effort.

The fact that we are holding all of these hearings this week is a little disturbing to me. My feelings are that the people testifying today in all of these hearings should be spending their valuable time assisting with the response effort. This incident was, indeed, tragic and we will feel the consequences for some time, even as we try to understand what happened. I hope today's hearing will enlighten us as to the possible causes of the spill.

There will be a number of hearings this week on the subject, and I hope they remain focused on the facts and what we need to do to solve the problem. With this in mind, I think Congress should focus on three priorities, which I think the Chairman agrees, we need to mitigate and contain environmental impacts, provide assistance to the Gulf's commercial and recreational fishing industries, and investigate the causes so we can prevent a disaster of this kind from happening again. If we stay focused on those priorities, then we can make prudent short- and long-term policy decisions as we address this spill.

One of our witnesses today is Lieutenant General Tom McInerney. He will help us put this in a proper perspective. I remember Tom so well. I was there 20 years ago, the *Exxon Valdez*, and I remember what happened.

And I can also remember that people at that time were saying, some of the extremists environmentalists, we are going to parlay this *Exxon Valdez* into a retardation of the effort to explore and develop our own resources in the North Slope, which was exactly the wrong thing at that time because that was a transportation accident, and if we do not produce our domestic resources then we are going to be bringing in from other areas, and the likelihood of a transportation accident would be that much greater.

There was point made recently by the New York Times columnist Tom Friedman. He noted that some may attempt to overreach for an end to offshore production. But he wrote, now I'm quoting now, and you would not have expected this from him, "We need to remember that even if we halted all offshore drilling, all we would be doing is moving the production to other areas outside the United States with even weaker environmental law." And that is exactly the point. I agree with him.

As investigations of this tragic event continue, I want to make a few things clear. If we find gross negligence or other violations of Federal law on the part of oil companies and their subcontractors, then we will hold them accountable. But by the same token, if the Federal officials failed to exercise proper oversight or implement specific requirements, then we will hold them accountable, too.

Madam Chair, let us work together to find out what happened and take the responsible path forward.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE,
U.S. SENATOR FROM THE STATE OF OKLAHOMA

Thank you, Madam Chairman. I first want to say that our prayers are with the families who lost loved ones in the tragic explosion in the Gulf. I also want to recognize all the men and women in the oil and gas industry who work every day to provide the energy we need to fuel America. And a note of thanks to all of the volunteers—from conservation groups to fishermen to Gulf Coast residents—who are helping with the response effort.

Before I begin, let me say that the fact that we are holding this hearing today troubles me a great deal. It's too early to begin assessing what caused this terrible tragedy. And the people testifying today should be spending their valuable time assisting with the response effort.

This incident was indeed tragic. We will feel its consequences for some time, even as we try to understand what happened. We also continue to assess the extent of the environmental and economic impacts. I hope today's hearing will enlighten us as to the possible causes of the spill. There will be a number of hearings this week on this subject—I hope they remain focused on the facts and what we need to do to solve this problem.

With that in mind, I think Congress should focus on three priorities as we move forward. We need to:

- Mitigate and contain the environmental impacts,
- Provide assistance to the Gulf's commercial and recreational fishing industries, and
- Investigate the causes so we can prevent a disaster of this kind from happening again.

If we stay focused on those priorities, then we can make prudent short- and long-term policy decisions as we address this spill and its causes.

One of our witnesses today, Lt. Gen. Thomas McInerney (Ret.), will help move us in that direction. He will provide some valuable historical perspective: Lt. Gen. McInerney led the military's response to the *Exxon Valdez* oil spill, which occurred over 20 years ago.

At the time, I was serving on two House committees investigating the causes of *Exxon Valdez*. In 1990 Congress unanimously passed the Oil Pollution Act, OPA, a sensible bill that serves as the controlling statute covering offshore accidents such as the one we are dealing with now. In fact, this Committee has jurisdiction over OPA.

Though Congress stepped up to the task, we can't forget that *Exxon Valdez* was politicized—and continues to be politicized—by certain activist groups bent on blocking access to America's domestic resources. I believe their actions made America more dependent on foreign oil, from countries that have few environmental restrictions. It's also important to note that *Exxon Valdez* was a transportation-related incident. The fact that we have grown more dependent on foreign oil means we have more tanker traffic, and thus we have created greater risk of an accident occurring than what would normally be the case if we had produced the oil right here at home.

This was a point made recently by New York Times columnist Tom Friedman. He noted that some may attempt to "overreach" for an end to offshore production. But, he wrote, "we need to remember that even if we halted all off-shore drilling, all we would be doing is moving the production to other areas outside the U.S., probably with even weaker environmental laws." Exactly.

Yet some activist groups refuse to acknowledge this reality—and just as they did in 1990 they are exploiting the Gulf tragedy for political gain. Again, I urge my colleagues to remain focused on mitigating the damage, getting all the facts, and investigating the causes. If we need to pass legislation, let's be sure it solves the problem.

Let's protect the marine environment, but remember we can do that—and indeed the industry has done that in the vast majority of cases—in tandem with oil and gas production. In other words, the two are not mutually exclusive.

In the meantime, there is an aggressive, ongoing response effort. I spoke with EPA Administrator Jackson, and she assured me that the agency is doing all it can to respond. I appreciate her leadership efforts thus far. I've also contacted the Coast Guard to get its perspective on the response effort. My staff is communicating with the Pentagon. I also launched a Web page that serves as a clearinghouse for information on the spill.

If we find gross negligence or other violations of Federal law on the part of oil companies or their subcontractors, then we will hold them accountable. By the same token, if Federal officials failed to exercise proper oversight or implement specific requirements, then we will hold them accountable, too.

Madam Chair, let's work together to find out what happened and take the responsible path toward a legislative solution, if needed. That's what the American people want and what the residents of the Gulf Coast deserve.

Senator BOXER. Thank you.

Senator Lautenberg.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator LAUTENBERG. Thanks, Madam Chairman.

Testifying before us today are the worldwide leaders in offshore oil drilling, BP, Halliburton, Transocean. These are the companies involved in the spill. It is devastating to the Gulf Coast of the United States. And ultimately what this spill shows is that offshore drilling cannot reliably be conducted safely. And if these three giant profitable companies cannot get it right, nobody can.

The bottom line is that if you drill in the ocean, oil spills cannot be a surprise. And all it takes is one major spill to destroy a coastline. And since the year 2002, we have had six major spills in USA waters. And that is in addition to what might be addressed at times as minor spills. And they are not minor if it is on your seashore.

The Deepwater Horizon case shows us that no rig is too big to spill. In fact, there was a similar major spill off the coast of Australia just last year. Halliburton did the cementing on that rig and has been blamed for the 10,000-square-mile oil spill that ensued.

Halliburton cemented its first offshore oil rig off the coast of Louisiana in 1938. And now, even after 72 years, they still have not got it right. They cannot guarantee that we are going to be protected against severe damage to our precious resources.

Oil drilling is a 19th century answer to a 21st century problem. It is inherently dangerous, inherently dirty, and inherently destructive to our environment.

The lesson of this oil spill disaster is that we need to move away from oil, find better ways, cleaner energy, renewable, to power our country. And that is why I am introducing a bill that is beyond the Petroleum Act which would impose a fee on each acre of offshore oil leases. The money generated by that fee is estimated to be nearly $2 billion a year, problems that have not then appeared with the incredible growth in profits that these companies have seen.

And I look at this, and I remember a time when America was in uniform. I was one of those people. Now, what did we do when we sat up, when our country and our people were under assault? We said that maybe we ought to attach some of the excess profits

that are being made when our country is under the kind of assault that it is.

And Madam Chairman, we are going to look at all options that come before us in order to adjust the situation as we see it.

Thank you.

Senator BOXER. Thank you.

Senator Vitter.

OPENING STATEMENT OF HON. DAVID VITTER, U.S. SENATOR FROM THE STATE OF LOUISIANA

Senator VITTER. Thank you, Madam Chair.

This incident is clearly a major human disaster, and again, I repeat, my heart and prayers go out with all of ours to the families directly involved starting with the 11 deceased or missing, all their families. And it is a major environmental disaster.

Clearly, we need to learn an enormous amount from these events, and significant changes will have to be made to Federal law and policy and procedure in light of that.

Having said that, and acknowledging that this sort of hearing is absolutely necessary, I want to repeat a concern that I made in a letter last week to the Chair that having this and many other hearings on Capitol Hill while there is still an ongoing disaster in the Gulf, while the flow is unabated, 5,000 barrels a day continuing to come up, I think is a mistake, and I think by definition is pulling some amount of focus and resources away from that ongoing disaster.

And I make that plea again as a resident of the Gulf Coast, and I ask that my letter be made part of the record for this hearing.

Second, Madam Chair, you mentioned a number of responses that have to happen. First, stopping the flow. Absolutely. Second, you said cleaning up the oil. I want to suggest inserting a step between one and two, and you may well consider this as part of cleaning up the oil. But two, I think we need to separate it out and define it differently.

Before we clean up the oil, we need to protect the coast and the marsh before the oil gets there and stop as much of that oil getting there as possible. In particular, in the Louisiana ecosystem, which for the most part is not a traditional beach. If the oil comes in past the barrier islands, past the beaches we have and infiltrates the marshland, it is 100 times more ecologically devastating, particularly for the long-term.

And so I think there needs to be a very specific focus on protecting the beach and barrier islands and marsh and preventing as much of that exposure as possible.

I look forward to this hearing, and I will be particularly focused on about five topics.

No. 1, I would like an update on all efforts to stop the flow, including the relatively new idea of a junk shop approach to putting material in the BOP or the piping.

No. 2, and related to my last point, we have a real problem getting boom and related assets to the Gulf region, and I would like some thoughts about the supply chain ramping up on that and the inequity which exists now, disadvantaging Louisiana in terms of how much boom is getting there versus other places.

No. 3, there is a very innovative proposal put out by the State of Emergency Dredging to build up the barrier islands and to extend some of our barrier islands to protect the coastline.

No. 4, I am very concerned that all sorts of labor and assets are being brought into the Gulf Coast, and existing labor and assets right there are not first being utilized.

And No. 5, the first industry, and part of our society that will be devastated by this, is seafood, and certainly I want to talk about that with our witnesses.

Thank you, Madam Chair.

[The referenced letter follows:]

DAVID VITTER
LOUISIANA

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May 3, 2010

The Honorable Barbara Boxer
Chairman
410 Dirksen Senate Office Bldg.
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The Honorable James Inhofe
Ranking Member
456 Dirksen Senate Office Bldg.
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Dear Chairman Boxer and Ranking Member Inhofe:

As several committees in the both the U.S. House of Representatives and the U.S. Senate look at holding hearings in the near future regarding Deepwater Horizon and the Gulf of Mexico spill, I ask as a member of the U.S. Senate Environment and Public Works Committee for your consideration of the immediate needs of the situation.

As early as last week, it was evident that resources were in short supply to contain the largest oil spill in U.S. waters since the Exxon Valdez incident in Alaska. I have been on the ground in Louisiana and can say that coordination is improving, but is not yet where it needs to be. As early as two days ago new contacts and phone lines were being put in place to handle the large outpouring of those wanting to help. All stakeholders are committing more resources and people by the hour to contain this national emergency.

As senator of one of the states most affected and in full support and understanding of our need to investigate the incident and resulting catastrophe, I ask that you hold off for the time being on pulling away any resources from the Gulf of Mexico – including individuals that would have to spend time drafting testimony and preparing for questions. Every free moment should be dedicated to addressing this very significant challenge.

I do not make this request lightly, and I am in complete agreement that a comprehensive and full investigation is absolutely necessary. However, until we are comfortable that pulling people and resources away from the incident is appropriate and won't jeopardize the ongoing cleanup and coastal protection operation, I ask with the utmost sincerity that the committee wait at least a couple more weeks before holding hearings.

There will be plenty of time to bring all accountable before the United States Senate and the Environment and Public Works Committee. As such, let's make sure that on the ground efforts would in no way be compromised.

Thank you for your ongoing work, and I look forward to your reply.

Sincerely,

David Vitter
United States Senate

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Senator BOXER. Thank you, Senator.
Senator Cardin.

OPENING STATEMENT OF HON. BENJAMIN L. CARDIN, U.S. SENATOR FROM THE STATE OF MARYLAND

Senator CARDIN. Well, Madam Chair, first, thanks for holding this hearing.

Clearly, our first priority right now is to clean up and mitigate the damage that has already been caused and to find out what happened in the Gulf of Mexico and to learn from this. That is our first priority.

I have the honor of chairing the Subcommittee of Water and Wildlife of the Environment and Public Works Committee. And we have a responsibility to understand what this is going to cause to our environment. It is a reminder to me that we need an energy policy in this country that makes us secure, deals with economic job growth and deals with our environment. And this oil spill, to me, is just another reminder that we need to get on with that work. We also need an alternative to oil. That is clear to me. And this bill only underscores that.

This spill is going to have a devastating impact on wildlife and water quality. There are 280 species of migratory and resident birds that go through the Gulf, coming from Canada to South America. Five species of sea turtles, 20 species of whales and dolphins, several species of tuna, swordfish, grouper, snapper and other fish, shrimp, oysters and blue crab. So, this is going to have a major impact on the environment, not only of the Gulf of Mexico and the surrounding States, but for the entire region around there.

And I have not even addressed the consequences if the BP spill gets into what is known as the Loop Current that Senator Nelson continues to remind us about. That literally could bring the oil up the Atlantic Coast and could affect the Chesapeake Bay, Assateague, and Ocean City in my home State of Maryland.

That is why I was relieved when the President said that Site 220—it is a lease-sale 220, offshore from the Maryland coast about 50 miles—that he is going to put a hold on that effort. This is real, that we could have additional drilling in the mid-Atlantic. The President said he will put a hold on it. I think we need to have a permanent ban.

And quite frankly, I think we have a responsibility to stop further explorations in new areas. I am particularly concerned along the Atlantic. If we had a similar episode along the mid-Atlantic, it would have generational impact on the Chesapeake Bay, on our beaches and our economy. It is just not worth the risk.

And yes, our first priority will be to clean up and mitigate. But I hope we will learn from what happened in the Gulf and not put other communities at such risk.

There is a better way for energy for America. We know that. Let us get on with an energy policy that makes sense for our economy, makes sense for our environment, and makes sense for our security.

Senator BOXER. Thank you, Senator Cardin.
Senator Alexander.

OPENING STATEMENT OF HON. LAMAR ALEXANDER, U.S. SENATOR FROM THE STATE OF TENNESSEE

Senator ALEXANDER. Madam Chair, thank you for holding the hearing.

This is an environmental catastrophe. We need to stop the spill, repair the damage, and find out what happened. But I would like to make three points.

First, that, unfortunately, all forms of energy have its risk. Connecticut knows about gas plants blowing up. West Virginia knows about coal mine tragedies. Tennessee knows about coal ash spills.

And even in some of the cleaner forms of energy, as unfortunate as the oily waterfowl images that we see are, the American Bird Conservancy might want us to remember that the current 225,000 wind turbines that we have in America kill 275,000 birds a year, and one wind farm in California killed 90 golden eagles in 1 year. So, there are risks in every form we have.

Second, this should spur us more rapidly toward clean energy. There is bipartisan support for that on this Committee and in the Congress. First, electric cars. If we electrified half of our cars and trucks in 20 years, which we could do without building a new power plant by plugging them in at night—it is a very ambitious goal—that would be the best way to reduce our use of oil.

Yet we would still need, by most estimates, about 12 million barrels a day, and if we did not, we would have $14 and $16 gasoline. We would still use a lot of oil. And in the Gulf right now, thousands of wells produce about one-third of all the oil that is produced in our United States.

Third, we need to focus on energy research and development. We have strong bipartisan support for that, for finding the 500-mile battery, the solar panel that is one-fourth as cheap as it is today, the way to recapture carbon from coal plants.

Finally, I would suggest something that might not seem so obvious which is that oil regulators might learn from nuclear regulators. The number of persons who have died from a nuclear accident at a commercial plant in the United States is zero. The number of sailors who have died in a nuclear navy, based upon a nuclear reactor, is zero.

Is the regulatory responsibility for oil spread too thin? There are 14 agencies or so who look after oil. One, the Nuclear Regulatory Commission, looks after nuclear power.

Second is accountability. The Navy has a remarkable safety record operating reactors. This is because of accountability. A former sub captain, Bill Ostendorff, now a Commissioner of the Nuclear Regulatory Commission, testified last week before this Committee that every officer, every captain, knows his mistakes will be carried with him through his career, and a fourth of his commanding officer classmates were disciplined at some point in their careers. Maybe we need some of that kind of accountability in oil.

And finally, the nuclear industry has shown that safety can be efficient as well as cheap. We now run our reactors faster than anybody in the world 90 percent of the time, and that is efficient, and that is cheap.

So, I think there are lessons that can be learned from the nuclear industry, and there are clear, clean energy options, nuclear,

electric cars and energy research and development that we can pursue in a bipartisan way.

Thank you, Madam Chair.

Senator BOXER. Senator, thank you. And as you know, we all want to work with you in terms of your recent catastrophe from the flooding. We are working together to try to help you on that.

Senator ALEXANDER. I know that you are, and I thank you, and I thank Senator Inhofe both, for your——

Senator BOXER. I know how hard you have been pushing on that, and we are ready to help.

Senator ALEXANDER. Thank you so much.

Senator BOXER. Senator Klobuchar.

OPENING STATEMENT OF HON. AMY KLOBUCHAR, U.S. SENATOR FROM THE STATE OF MINNESOTA

Senator KLOBUCHAR. Thank you very much, Madam Chair.

On Friday I saw firsthand the miles and miles of orange in the sea, the oil slick. The scope of this disaster is staggering. But for 11 families, the lost cannot be quantified. Eleven families lost a loved one in this tragedy, and I can only imagine what their families are going through.

I could not help but think of our bridge collapse on August 1, 2007. I said that day a bridge in the middle of America just should not fall down. Well, an oil rig off the pristine shores should not just explode in a massive fireball and threaten our Nation's coastline.

Madam Chairman, we all know that accidents happen. But some accidents are not acceptable. It is not acceptable for a floating oil rig the size of a football field to burst into flame. It is not acceptable that 11 people died, that thousands of our Nation's rarest and most precious wildlife are threatened, and that the livelihood of millions of people on the Gulf Coast has been turned upside down.

As a former prosecutor, I know that when tragedies strike, people want answers. The American people want to know when this disaster will end. First and foremost, they want to know how it will end. They want to know who is responsible. They want to ensure that the victim's families and the American taxpayers are adequately compensated and that measures are taken so that an incident like this never happens again.

I saw when I was there how hard Federal officials, countless volunteers, industry employees are working to clean up the oil and prevent further leakage. But there are still many questions that need answers.

BP was responsible for a similar explosion in March 2005 that killed 15 employees, left 170 injured and prompted the U.S. Chemical Safety and Hazard Investigation Board to conclude that—and this is a quote—the Texas City disaster was caused by organizational safety and safety deficiencies at all levels of the BP Corporation, warning signs of a possible disaster were present for several years, but company officials did not intervene effectively to prevent it.

The American people want to know what changed between the 2005 disaster and the disaster last month. Mr. Probert, the American people also would like to know if Halliburton cement work somehow contributed to this disaster. And the people in our coun-

try are not dumb. They know that in instances like this there is going to be a lot of finger pointing, like when a group of kids knock a baseball through the neighbor's window and none of the kids want to own up to the mistake.

But in this case the consequences are not simply the cost of repairing a broken window. For 11 families, the consequences are too difficult to contemplate. For the American people, the consequences? Well, it could be one of the most costly environmental disasters in our history.

Madam Chairman, the role of this Committee is to examine the costs and associated responsibilities to look at the environmental damage. I hope the testimony at today's hearing will provide the answers that the America people are waiting for.

My major focus after seeing this disaster is to make sure that it never happens again and to end it as soon as possible.

I thank you for convening this hearing.

Senator BOXER. Thank you very much, Senator.

Senator Whitehouse.

Senator WHITEHOUSE. I would be delighted to yield to Senator Specter. I understand that he——

Senator BOXER. Senator Whitehouse yields to Senator Specter.

Senator Specter.

OPENING STATEMENT OF HON. ARLEN SPECTER, U.S. SENATOR FROM THE STATE OF PENNSYLVANIA

Senator SPECTER. Thank you, Madam Chair, for convening these hearings.

I think that rather than viewing this catastrophic spill as an impediment to establishing a national energy policy we should use it to spur us on. Because we know that we cannot rely on oil drilling offshore.

I believe that these hearings really need to explore a number of questions that have been raised as to the cause of the incident. First, the allegation has been made that the technology has not changed much in 20 years. Booms, skimmers, chemical dispersants. They have played down the possibility—the oil companies have—of uncontrolled blowouts. They said that blowout preventers were practically foolproof. But Government regulators, back in 2003, had disputed that.

The underground blowout in East Timor last year was a warning. It leaked for some 10 weeks, causing enormous damage. There is evidence that the industry was not willing to pay for enough boats and booms to enclose such a fast growing spill. The oil companies could have had some version of the containment dome ready before the spill rather than building one after it happened.

These are issues these hearings need to explore, and we need to take whatever steps are necessary through regulation to prevent a recurrence.

This Committee reported out a bill some months ago, and a number of our colleagues, Senator Kerry and Senator Lieberman, are working on legislation. And I think this incident underscores the need to move ahead.

But we now know that, on the current state of the record, that we cannot rely on offshore drilling, that the environmental risks

are much too serious. We have quite an array of Senators from States impacted by this array, more Senators on the witness table than usually appear on the Senate floor, almost a quorum at the witness table. And the stream may carry it up throughout the entire East Coast, so there is more concern to be had.

I look forward to the cooperation of the Republicans with the Democrats to move ahead to find answers to these questions.

Thank you, Madam Chair.

Senator BOXER. Thank you very much, Senator Specter.

Senator Whitehouse.

OPENING STATEMENT OF HON. SHELDON WHITEHOUSE, U.S. SENATOR FROM THE STATE OF RHODE ISLAND

Senator WHITEHOUSE. Thank you, Madam Chair.

First, let me join my colleagues who have expressed their condolences to the families of the 11 workers who lost their lives, and I join in wishing a speedy recovery to all of those who are injured.

This incident clearly requires us to reset a lot of assumptions. We were told something like this cannot happen. It did. We were told that the industry was prepared for it. In fact, it looks as if the contingency planning was far from adequate. We are told we have adequate environmental laws. It is not clear that our environmental laws are strong enough and adaptive enough for a continuing spill of this variety that at present has absolutely no end in sight.

There are questions of accountability and cost, and who should answer for this, and how much it will cost, and why taxpayers should end up paying anything for this when all is said and done, and why companies should have limits on their economic damages, and what are the—in the context of the sort of dollars at stake here—microscopically small levels of liability.

Finally, we were told that drill, baby, drill was the solution to our energy problems. I think that anybody who really believes that should go tell that to the tourist economy of Florida. I see Senator LeMieux here. Go tell that to the fishing community of Louisiana. Senator Landrieu is here.

Clearly we need, as Senator Cardin said, a review of our energy strategy. And as Senator Specter said, let us use this as a time to move forward and protect ourselves against this kind of disaster, enhance our national security, and improve our economy, our jobs and our environment.

Senator BOXER. Senator Udall followed by Senator Merkley, and Senator Baucus should be back.

We are going to start with Senator Shelby because we got a note that he is needed on the floor at 10 after, and he is the most senior here. But we have to go through quickly, and Senator, we have three more, and then you will be on.

Senator Udall.

OPENING STATEMENT OF HON. TOM UDALL, U.S. SENATOR FROM THE STATE OF NEW MEXICO

Senator UDALL. Thank you, Madam Chair.

I also join in the condolences to the families.

Following this disaster, many industry observers have expressed shock and surprise that such a catastrophic failure could occur. Just last year, however, a major blowout and serious oil spill occurred off the coast of Australia. That blowout and explosion occurred just after the well was capped, eerily similar to what happened in the Gulf. In that case, the blowout preventer did not work.

I also understand that there is a 1999 report by the MMS that shows that blowout preventers failed over 100 times in the late 1990s in more minor accidents.

Information is also coming forward that unusual procedures were used in cementing this well, and I think the regulators need to focus on that aspect, and we should be able to hear from them.

But the big question it seems to me for the industry is, in the future, will the industry support strong, mandatory regulatory standards for cementing and capping wells rather than relying on the blowout preventers which clearly are not a reliable failsafe solution?

Secretary Salazar has come forward with suggestions for reform within the Department of Interior. One of his ideas is to try to build a firewall between leasing and safety, and I welcome that suggestion. Most of the countries in the world that have this kind of activity going on within their government rely on a separation between leasing and safety. And so, I think it is very important that this Administration move forward with that.

I am pleased that the Administration is moving forward with this reform. But industry must also change its deregulatory and self-regulatory attitude. Regulations impose modest costs, but these highly profitable companies can easily afford them.

Compared to an oil spill, regulation is a bargain.

Thank you, Madam Chair.

Senator BOXER. Thank you, Senator.

Senator Merkley.

OPENING STATEMENT OF HON. JEFF MERKLEY, U.S. SENATOR FROM THE STATE OF OREGON

Senator MERKLEY. Thank you, Madam Chair.

I, too, like my colleagues, express my thoughts for the families who have lost loved ones in this tragedy and the thousands of families who have had their livelihood affected by this tragedy.

I will be brief so we can get to our panel. And just note that I will be very interested in understanding the types of rigorous examination and testing of blowout preventers that occurred or did not occur preceding this particular accident, and all that we can learn to avoid a disaster like this in the future, and whether there is, in fact, any real set of technology that can make deep water drilling safe.

I know the citizens of Oregon have their doubts because of the fact that, even in an unlikely event, an event could have such an impact upon our salmon, upon our shellfish industry, upon our coasts, upon the entire ecosystem off the coast of Oregon. I have had those reservations for a long time, and I will be looking to learn a great deal through this afternoon's hearing.

Thank you.

Senator BOXER. Thank you so much.

Since Senator Baucus is not back yet, when he comes, we will hear from him. This is the order of seniority: Shelby, Landrieu, Nelson, Menendez and LeMieux.

Senator Shelby.

OPENING STATEMENT OF HON. RICHARD C. SHELBY, U.S. SENATOR FROM THE STATE OF ALABAMA

Senator SHELBY. Madam Chairman, Ranking Member Inhofe, thank you for allowing me to testify before the Committee today.

I traveled to Alabama last week and witnessed firsthand the destruction caused by the oil rig explosion. What I saw was disturbing. Even today the oil continues to flow at a rate of 5,000 barrels, as a lot of you have pointed out. Tar balls have washed up on the shores of Dolphin Island, Alabama. As long as this oil continues to pour into the Gulf, we have a real—and an unprecedented—disaster.

As we continue to respond to this disaster, our main objective must be to stop the flow of oil. Until this leak is stopped, we cannot adequately protect our Gulf. Second, clean up should be rapid and with as little environmental impact as possible once that happens.

As the responsible party, BP must be held accountable, and the Federal Government should ensure that BP upholds its financial obligations. I do not believe that BP—or any company for that matter—should solicit hazard mitigation solutions after an accident.

Third, this oil spill could become our Nation's worst environmental disaster in decades. It already threatens hundreds of species of fish, marine life, birds and other wildlife along the Gulf Coast. We need to ensure that techniques utilized in recovery efforts are safe and that we protect our environmentally sensitive areas.

Finally, we should make every effort to help our coastal communities get back on their feet with minimal disruption and financial harm.

How will the fishing industry weather the potential economic disaster? Good question. What will happen if Gulf seafood is contaminated and unable to be sold? We need to plan for the long-term impact that this accident will have on the Gulf Coast.

In the wake of this accident, many are understandably concerned about the safety and environmental risk associated with offshore drilling, and with good reason. Simply halting all offshore development, I believe, will not address our energy needs and would immediately increase our dependence on foreign oil. This accident should not be used, in my judgment, as an excuse to halt the gains the U.S. has made in developing domestic energy resources.

Instead, Madam Chairman, we should proceed in a measured manner to fully understand the true cause of this accident and review procedures and protocols currently in place that oversee this industry. We need to ask several questions, in my judgment.

First, why did this happen? We need to examine the role the Minerals Management Service, the agency responsible for both environmental enforcement and financial administration of offshore drilling leases, played in this accident. In 2008 the Minerals Management Service was exposed, and I quote, as "a cesspool of corrup-

tion and conflicts of interest" with regulators routinely accepting gifts from oil and gas companies. Is this why regulators did not mandate the use of a remote control device to shut down the well? I do not know. But it is a good question.

Second, what role did BP play in this explosion? Were cost cutting measures implemented at the detriment of safety?

Finally, is the Oil Spill Liability Trust adequate to deal with such disasters? Since the Fund's inception in 1986, the cost of clean up for such severe environmental disasters has kept pace with inflation while the cap on individual claims has not.

This accident, I believe, Madam Chairman, serves as a reminder that there are risks involved in meeting our energy needs as a country.

Madam Chairman, I speak today to remind the Committee of the importance of proactive rather than reactionary measures, foresight rather than hindsight. I ask you to continue to consider the needs of our Gulf Coast as we move forward with our cleanup and restoration efforts.

And Madam Chairman, thank you for your courtesy here today.

[The prepared statement of Senator Shelby follows:]

STATEMENT OF HON. RICHARD C. SHELBY,
U.S. SENATOR FROM THE STATE OF ALABAMA

Madam Chairman and Ranking Member Inhofe, thank you for allowing me testify before the Committee today.

On April 20, 2010, the Transocean-owned Deepwater Horizon drilling rig exploded, sending hundreds of thousands of gallons of oil toward our coastal shores, estuaries, and beaches. Alabama is bracing for the environmental and economic impact to our coastline. At this point we do not know how severe the impact will be, nor can we estimate the long-term effects. However, we have already seen evidence that this spill may devastate our Gulf Coast region—an area that has continually suffered one disaster after another.

Madam Chairman, I traveled to Alabama and witnessed firsthand the destruction caused by this catastrophe. What I saw was disturbing. Even today, the oil continues to flow at a rate of 5,000 barrels a day. Tar balls have washed up on the shores of Dauphin Island, Alabama. As long as this oil continues to pour into the Gulf we have a real and unprecedented disaster.

As we continue to respond to this disaster, our main objective must be to stop the flow of oil. I am concerned that initial reports of the complexity and volume of the spill were underestimated. It seems as if the amount of oil leaking from the wells more than tripled overnight. At this rate, the spill could easily eclipse the 1989 *Exxon Valdez* accident—the worst oil spill in U.S. history.

Second, clean up should be rapid and with as little environmental impact as possible. As the responsible party, BP must be held accountable, and the Federal Government should ensure that BP upholds its financial obligations. I do not believe that BP, or any company for that matter, should solicit hazard mitigation solutions after an incident. Just as we would never send our warfighters into combat without a contingency plan, we should consider strengthening regulations on industries that engage in high risk operations that affect our citizens and our environment.

BP's most promising solution for stopping the oil flow involved a 100-ton concrete and metal box designed to cover and capture the oil that's now flowing into the Gulf. It failed over the weekend. Other suggestions as to how to clean up this mess have ranged from the entrepreneurial to the MacGyver-esque. Portions of the Florida coast will use bales of hay, while human hair clippings are being stuffed into casings to augment boom reserves, and pounds of peat moss are being considered to help soak up surface oil. This is not what we should expect from the world's fourth most profitable company.

Third, this oil spill could become our Nation's worst environmental disaster in decades. It already threatens hundreds of species of fish, marine life, birds, and other wildlife along the Gulf Coast. We need to ensure that techniques utilized in recovery efforts are safe and that we continue to do everything possible to protect our environmentally sensitive areas.

We should address the recovery techniques used to clean up the oil slick. While dispersants may be the best action to mitigate the oil spill, we must understand what the long-term effects will be on the ecosystem. It is my understanding that dispersants have never been used at this concentration, and thus far it is publicly unknown what chemicals even make up the dispersants being used in the Gulf. All the facts must be provided to the public so we can have a full and complete picture about the environmental impacts dispersants may cause.

Finally, we should make every effort to help our coastal communities get back on their feet with minimal disruption and financial harm. Fishermen are now placing booms in the Gulf instead of hooks. But Madam Chairwoman, these jobs are only temporary. How will the fishing industry weather the potential economic disaster? And what will happen if Gulf seafood is contaminated and unable to be sold? During the beginning of the tourist season, the Alabama coast has already begun to deal with smaller beach crowds and rental cancellations. We need to plan for the long-term impacts this accident will have on the Gulf Coast.

In the wake of this accident, many are understandably concerned about the safety and environmental risks associated with offshore drilling. We are often quick to turn to reactionary and overly stringent public policy as a stopgap measure. Although my home State is affected, I caution against hasty reform. Simply halting all offshore development will not address our energy needs and would immediately increase our dependence on foreign oil. We cannot forget that our Nation is still dependent on millions of barrels of oil every day from overseas. This accident should not be used as an excuse to halt the gains the United States has made in developing domestic energy sources. We must let the investigation into this accident move forward and be careful to avoid rash or precipitous actions.

Instead, we should proceed in a measured manner to fully understand the true cause of this accident and review procedures and protocols currently in place that oversee this industry. We need to ask several questions.

First, why did this happen?

We need to examine the role the Minerals Management Service, the agency responsible for both environmental enforcement and financial administration of offshore drilling leases, played in this accident. In 2008 the Minerals Management Service was exposed as "a cesspool of corruption and conflicts of interest," with regulators routinely accepting gifts from oil and gas companies.

U.S. regulators did not mandate the use of a remote controlled device to shut down the well should the oil rig become damaged or require evacuation. Yet these devices are required by Norway and Brazil. While the efficacy of the device is unclear, the Minerals Management Service did consider requiring its use only to decide "acoustic systems are not recommended because they tend to be very costly." No one can state, unequivocally, that a remote control device would have prevented this disaster. But it is also unknown whether it would have provided a last resort protection against underwater spills. Madam Chairman, it does not appear that the Minerals Management Service's oversight is sufficiently protecting our Nation from environmental disasters.

Second, what role did BP play in this explosion?

In 2007 Congress investigated one of the worst workplace accidents in the U.S., a massive explosion at BP's Texas City Refinery in March 2005 that killed 15 people and injured 180. The U.S. Chemical Safety Board, an independent Federal agency, investigated the accident and stated, "The Texas City disaster was caused by organizational and safety deficiencies at all levels of the BP corporation. The combination of cost cutting, production pressures and failure to invest caused a progressive deterioration of safety at the refinery." Was this lack of concern for safety part of BP's corporate culture that translated to potential questionable standards on the rig? The Justice Department must continue their investigation to determine whether malfeasance occurred.

Finally, is the Oil Spill Liability Trust fund adequate to deal with such disasters?

Since the fund's inception in 1986, the cost of clean up for such severe environmental disasters has kept pace with inflation, while the cap on individual claims has not. While we should not be reactionary in our energy policy, our job as lawmakers is to examine where there are breaks in the chain and to make sensible repairs.

This accident serves as a reminder that there are risks involved in meeting our energy needs as a country. But even with this tragedy, the United States still has the most rigorous and robust environmental standards of any oil producing country in the world.

Madam Chairman, I speak today to remind the Committee of the importance of proactive rather than reactionary measures; foresight rather than hindsight. I ask

you to continue to consider the needs of our coast as we move forward with our cleanup and restoration efforts.

Senator BOXER. Senator Shelby, thank you so much, and we really appreciate your being here.

Senator Landrieu.

OPENING STATEMENT OF HON. MARY L. LANDRIEU, U.S. SENATOR FROM THE STATE OF LOUISIANA

Senator LANDRIEU. Thank you. Madam Chair, thank you for taking the initiative to hold this hearing today. And I thank all the members of this Committee for your very thoughtful remarks, particularly in regards to the men that were lost in the incident and their families. Many of them came from the Gulf Coast.

Madam Chair, you are aware of the ongoing and urgent needs of Louisiana's coast. I have brought this to your attention, as well as other members of our delegation, for some time now. But as we begin to understand this tragedy and to put it in perspective, I think a few facts are important. And I gave the same testimony to the Energy Committee this morning as I am giving to the Environmental Committee because I think it is important to be consistent and balanced in our message.

There are over 300,000 men and women that work in the oil industry in Louisiana. There are 1.8 million that work nationally. And many people that work in this industry are proud of the contributions that this industry makes to our country every day. We owe the workers of this industry a debt of gratitude for what they do. It is dangerous, hard work, sometimes separated from their families. And the members of the Gulf Coast delegation have a resolution before the Senate that I hope we will pass today.

There is some other perspective that is important. From 1947 until today there have been 42,645 wells drilled in State and Federal waters in the Gulf of Mexico alone. The first deep well was not drilled yesterday. It was drilled 31 years ago in 1979. That well was drilled in 1,000 feet of water.

We have 2,250 deep water wells drilled since then. In fact, as I questioned the executives this morning from BP and Transocean, Madam Chair, there are 120 deep water wells operating worldwide today. The record will show that from 1947 until 2009, 175,813 barrels have been spilled out of 16 billion produced. That is 1,000th of 1 percent of total production.

Madam Chair, I know that this Committee has its eyes on the environment. We in Louisiana live in that environment. We do not only have our eyes in it, we have our hearts invested in it. And we are making a living on that delta. But we need the oil that comes from offshore to keep this economy moving. We must examine what went wrong, weigh the risk and rewards, and fix what is broken and move on to get this country more independent of foreign oil.

If we could do without this oil, we would. But we simply cannot. Not today, not in the near future, maybe some time in the distant future. But we use 20 million barrels of oil a day. We are only producing 9 here at home. If we just transport this off of our shore, we transport the environmental risk and we transport jobs.

We must find out what went wrong, hold BP accountable, and on the record they said they will be accountable, under oath, for all economic damage.

And finally, and thank you for your patience; our delegation has repeatedly come to this Congress for the last 25 years saying yes, these resources belong to the Federal Government. But the Gulf Coast States, including Florida, that do not drill, and I will say this on their behalf, are absorbing 100 percent of this risk. And so revenue sharing is very important from the billions of dollars generated from this industry to make sure it is safe, that we have the appropriate response, and this country gets the energy it needs.

I agree with Senator Alexander about nuclear power and its promise. But for right now let us focus on holding those responsible for the damage, let us focus on moving this industry forward in a more safe way, and hold people responsible so all economic damages to anyone affected are met.

Thank you again for your initiative.

[The prepared statement of Senator Landrieu follows:]

STATEMENT OF HON. MARY L. LANDRIEU,
U.S. SENATOR FROM THE STATE OF LOUISIANA

Thank you, Chairman Boxer, for holding this important hearing today. And thank you for your determined commitment to the Gulf Coast recovery efforts and for your understanding of the urgent needs of Louisiana's coastline and wetlands.

Our Nation lost 11 men in this unprecedented accident. Our thoughts and prayers are with their families as well with those injured.

As my colleagues and I outline our differing views on energy policy today, I believe it is important that we do not lose sight of this key point: the men and women that were on board the Deepwater Horizon on that fateful day were and are hard-working Americans.

WHAT LESSONS SHOULD WE LEARN?

Some suggest that we put a halt to all new offshore drilling. I don't believe that we can retreat from domestic energy production. Banning offshore drilling will not keep our workers safe, and it won't prevent our shores from getting stained with oil.

If we stop drilling here, then we will simply import more than we already do from Saudi Arabia, Nigeria, Venezuela and elsewhere.

Even if we simply import our oil, our beaches are very much at risk. That's because we need to get it from overseas and into our gas tanks in massive oil tankers. And periodically those tankers spill. In fact, according to the National Academy of Sciences, oil tankers spill about 4 times as much oil as offshore drilling does, on average.

It is simply not right to export our energy production overseas to countries who care nothing for the environment and who have few resources to mitigate the impacts.

America must reduce its oil consumption for national security and for the environment. But we need to be realistic. Today America consumes about 20 million barrels of oil each day. We produce about 5 million barrels of oil here. We produce another 3 million barrels worth of biofuels. That means we would need to reduce our consumption by 60 percent just to become energy secure. Message: Oil is here for the foreseeable future. Drilling for it here is the environmental choice.

WE NEED TO MAKE OUR COASTS MORE RESILIENT

Louisiana is just beginning to see the damage wreaked by this oil spill. Unfortunately, this oil is spilling on a coast that is already in a desperately fragile condition.

When the oil reaches the wetlands, it can coat, suffocate and kill the grasses whose web of roots holds the marshes in place. Then all that will be left is mud, which will simply sink into the seawater.

Those wetlands buffer the region from storm surges—unless the marsh grasses are so depleted that they wash away. Normally, the wetlands would naturally re-

plenish themselves with sediment that washes down the Mississippi River—except that sediment has been channeled away by levees, pipeline cuts, and other energy-related development done decades before we understood its impacts.

Louisiana's wetlands are sinking and disappearing into the Mississippi River Delta at a terrifying rate: nearly a football field every 30 minutes. An area half the size of Washington, DC, disappears every year.

Louisiana's wetlands are nature's levee system—they diminish the destructive force of hurricanes destructive power by reducing storm surge and absorbing wave energy.

Scientists estimate that for every 2.4 square miles of wetlands, deadly storm surges are lowered by about 1 foot. A recent study indicates that if some of Louisiana's barrier islands are washed away, wave height could increase by 700 percent.

Those same barrier islands—the Chandeleur Islands—have oil washing ashore today. That oil threatens their vegetation, and if the vegetation dies, the island will soon wash away.

If those islands wash away, one LSU researcher estimates that the barrier coast can expect increases in storm surge and wave height of greater than 6 feet.

America needs oil from the Gulf of Mexico. Revenue sharing helps us do it sustainably.

The Gulf of Mexico accounts for one out of every four barrels of oil produced in the United States.

The Gulf Coast is home to 40 percent of America's refining capacity, where crude oil is converted into gasoline for our cars, heating oil for our homes, jet fuel, diesel and other oil products.

Those are critical assets, and we can't simply wish away the fact that we need them.

That is why this incident only bolsters the case for revenue sharing as an appropriate policy to compensate the States that accept oil and gas production off their coasts.

In the Domenici-Landrieu Gulf of Mexico Energy Security Act, the linkage between production and impact was strongly reflected in the provisions that dedicate OCS royalties to the coastal protection and restoration fund.

Revenue sharing won't prevent these accidents, nor will it erase their environmental impact, but it is equally unrealistic to expect oil and gas production to come to a halt in the United States.

The compromise is this: revenue sharing serves as compensation for the risk associated with energy production.

That money should be invested in coastal sustainability and resiliency. That way, our coast is at least in a better position to respond to/recover from these incidents as opposed to the current scenario where we see the potential for a significant impact on an already deteriorated coast with no ongoing compensation to mitigate both direct and indirect impacts of energy production.

Healthy wetlands help mitigate the impacts to further inland estuaries, and healthy barrier islands can serve as a blockade, stopping the oil from passing inward.

That is why it is so important that States with oil and gas production off their shores get a portion of those revenues to ensure their coastal areas are healthy and thriving, providing the best protection against any disaster.

CONCLUSION

Today I hope that we can begin to understand what went wrong on April 20th when 11 men lost their lives. And I hope that we can take steps to reduce the chances that it will ever happen again.

But I also hope that we learn the right lessons.

Senator BOXER. Senator, thank you so much. And we know that you are deeply involved in this recovery effort and recovering these industries that potentially could be very badly damaged.

Senator Baucus, I promised you when you came back, so please proceed.

Senator BAUCUS. OK.

Senator BOXER. And then we will go to, just to make it clear, Senators Nelson, Menendez and LeMieux.

OPENING STATEMENT OF HON. MAX BAUCUS,
U.S. SENATOR FROM THE STATE OF MONTANA

Senator BAUCUS. Thank you, Madam Chairman. I will be very brief. And I thank the indulgence of my colleagues both on the Committee and the panel for letting me proceed here. I am not going to be long. We all have the same views.

For me, it is important that we protect all our natural resources, wherever they may be. The Gulf is clearly one. We have heard from the Senator from Maryland about the Chesapeake Bay. In my State of Montana, it is Glacier Park, it is Yellowstone Park, the natural resources there. And by the way, today is the 100th anniversary of Glacier Park.

BP has owned gas leases up on the North Fork of the Flathead which adjoins Glacier Park. I spent some time talking to British Petroleum, and just recently—I take my hat off to them—they have withdrawn those leases, about 168,000 acres worth. Excuse me.

[Remarks off microphone.]

Senator BAUCUS. Excuse me, the wrong company. ConocoPhillips has run those leases. But I have talked to BP many times about whether they should proceed or not. BP has coal bed methane interests in that very same area, and they, too, have announced that they are not going to proceed with their coal bed methane.

My main point here is that the Gulf is an extremely environmentally sensitive area. I am not convinced, based upon the press reports I have read, that sufficient precautions were taken either by the relevant agency or by the company.

I read—I do not know if this is true or not—that of the 15 or 16 preventers that are used in situations like this, the vast majority of them have failed in the past. And I think those were at depths not nearly as deep as 1 mile.

The whole thing is life is, if you can do it right, do it right the first time. And it just seems that BP and the agency, Deepwater Horizon, all the relevant parties here, did not do it right the first time. And by the first time I mean make sure that all the protections are first in place, make sure there is sufficient redundancy, and make sure there is an adequate response plan if something does go awry.

It just seems like a lot of mistakes were made. I do not know to what degree it is human error or technical error or what combination, but we are going to find out more in the next several weeks and months as this unfolds, and that will enable us to more appropriately take the proper action.

I just say at this time that I am quite distressed. I support oil and gas, offshore oil and gas development. But not like this. I saw a map, it was in the New York Times about 4 or 5 days ago, and it showed hypoxia is growing in the Gulf, near Louisiana especially. But a lot of that is runoff. It is not just oil and gas. It is agriculture runoff. But we are going in the wrong direction here, folks. We need oil and gas, but we are going in the wrong direction and not taking sufficient protection.

I believe, frankly, that all of us have a moral obligation when we leave this place to leave it in as good a shape, or better shape, than we found it. We are not here forever. That pertains to economic opportunities for our people. It also pertains to the environment. I

just feel here that we have kind of dropped the ball here. The large "we." And I hope we do not let that happen again.

Thank you, Madam Chairman.

Senator BOXER. Thank you very much, Senator.

Senator Nelson.

OPENING STATEMENT OF HON. BILL NELSON, U.S. SENATOR FROM THE STATE OF FLORIDA

Senator NELSON. Madam Chairman, one of my worst nightmares might be coming true. Because if this thing is not stopped, and it does not get stopped until the relief well is done in 3 months, then it is going to cover up the Gulf Coast.

The wind is eventually going to keep it going south, and it is going to get into the Loop Current. And the Loop Current comes south and comes right around the Florida Keys where 85 percent of all the live coral reefs are in the entire country.

And it becomes the Gulf Stream, and it hugs the east coast of Florida, and I mean literally hugs the coast. It is less than a mile off of the beach, the Gulf Stream, and it continues on up halfway up the peninsula of Florida before going a little bit out into the ocean.

Then it continues right up, paralleling the coast all the way to Cape Hatteras, North Carolina, before it goes across the ocean past Bermuda and on to Scotland.

So, if this thing is not stopped, we are looking at a major economic and environmental disaster affecting our State and the rest of the Gulf and the Eastern Seaboard of the United States.

Now, first of all, I think it is clear that there sure should not be any more exploratory drilling until the investigation is completed between the Department of the Interior and the Department of Homeland Security. And I would argue that there clearly should not be any new drilling in new areas that have not been approved for lease, especially since almost 38 million acres are under lease in the Gulf of Mexico alone that have not been drilled.

Since there has been such a push to put this off of Florida, I want to point out, remember the old saying, when Willie Sutton was asked why does he rob banks he said because that is where the money is. The oil is not off of Florida.

[Chart shown.]

Senator NELSON. This is, you cannot see it, but this is a fancy chart that tells you, from the Department of the Interior, that 90 percent of the oil, the undiscovered oil in the Gulf of Mexico, is in the central Gulf and the western Gulf and only 10 percent of the undiscovered oil is in the eastern Gulf.

And my question is, and I have raised this for years, is it worth the tradeoff to our economy in Florida, not only beaches, and we have more beaches, obviously, than any other State, but the economy to our fisheries, our fisherman, our oysters. Is it worth it, that tradeoff? Is it worth the tradeoff to national security in the largest testing and training area for the United States military in the world, which is basically the Gulf of Mexico off of Florida, for 10 percent of the undiscovered oil in the Gulf of Mexico? And I think the answer is clearly no.

But what have we heard the last several years? We want to drill in the eastern Gulf. Well, in front of this Committee, you are going to have to face two things. You are going to have to face Minerals Management Service reform, and there is a sorry record, a record of incestuous relationships. You have seen the news stories of the sex parties and the pot parties. MMS needs to clearly be cleaned up.

Second, you have jurisdiction in this Committee on the question of the liability. And there was an artificially low liability limit of $75 million. BP says it is going to exceed that, and the question is, how much? I think it is very reasonable to expect that you ought to consider raising that liability for economic damage to at least $10 billion.

So, Madam Chairman, those are my heartfelt remarks.

Senator BOXER. Thank you, Senator. They certainly were.

Senator Menendez.

OPENING STATEMENT OF HON. ROBERT MENENDEZ, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator MENENDEZ. Thank you, Madam Chairman and Ranking Member Inhofe, for the opportunity and the invitation to testify about my bill, joined by many of my colleagues here and on this Committee, the Big Oil Bailout Prevention Act.

The bill would increase the cap on economic damages resulting from an oil spill from the current $75 million to $10 billion. Companion legislation would eliminate the $1 billion per incident cap on the Oil Spill Liability Trust Fund, and together they accomplish three things.

First and foremost, the bill will make sure that people in communities injured by an oil spill would get compensated for their loss. Right now, fisherman, hotel owners and other people dependent on clean water and clean shorelines for their livelihood are collectively holding their breath, hoping this spill does not destroy fisheries or make landfall again, destroy beaches or estuaries. At the very least, they should feel confident that if economic damages do hurt them, they will be made whole.

The second thing this bill does is to ensure that claimants will be made whole quickly. It is possible that other Federal laws or even State law will allow some claimants to be compensated for their losses even if a $75 million cap is hit. But we do not want another situation like that after the *Exxon Valdez* where it literally took two decades for some to get paid and some were never compensated because they gave up.

Under the subsequent Oil Pollution Act, claimants can now quickly and efficiently have their claims processed up to $75 million. By raising the cap, we can ensure all victims can be compensated on time.

Finally, the legislation will ensure that polluters are the ones compensating spill victims, not Federal taxpayers. We all know that when a crisis unfolds and the responsible parties cannot be made to pay for their damages, people will look to the Federal Government for help. Taxpayers should not have to pay for the misdeeds of oil companies or those who drill, period.

Madam Chairman, as the investigation into this matter goes forward, we will see blame cast far and wide for the accident. There is no doubt that mistakes will be found, that industry and regulators alike will be criticized for their arrogance in thinking a spill simply could not happen.

But viewed from an economic perspective, the cause of the accident is quite clear. When you have an industry that does not have to pay the full costs of the damages they cause, they will automatically not invest enough in safety. If they know that they are on the hook for the first $75 million in economic damages, perhaps they will not invest millions in a new valve or even a few hundred thousand for an acoustic switch.

For a business, decisions are simple. How will each decision maximize their profits? It is time for us to pass the Big Oil Bailout Prevention Act to force companies to bear the full costs of their damages and therefore give them the economic incentive to be as safe as possible.

Now, some have suggested that despite the potentially astronomical damages in the Gulf the bill sets the cap too high. Well, given the fact that BP has earned $5.6 billion in profits—not proceeds, profits—in the first 3 months of the year, I think somehow they and others in that category will be OK.

Our legislation has received wide support from both the House and Senate leadership, the White House, and many members of this Committee.

Let me close and make one final point. Just because the crisis will undoubtedly result in new legislation, more safety regulations and new safety technologies does not mean that oil drilling will become completely safe. There is no such thing as too safe not to spill. We were told that. We have learned a different lesson.

It is a lesson that certainly, for my home State of New Jersey, a $50 billion tourism industry that Senator Lautenberg and I represent, a major coastal fishing, fourth largest in the Nation, we cannot afford that type of drilling, that type of spill, on the beaches of New Jersey and the consequences that it will produce for a generation.

That is what is at stake in the long run. But in the short run, Madam Chair, we should make sure that people, ultimately, will be compensated and not just simply rely on a company saying we will pay all legitimate claims, whatever that means.

Senator BOXER. Senator, thank you.

And finally, Senator LeMieux.

OPENING STATEMENT OF HON. GEORGE S. LEMIEUX, U.S. SENATOR FROM THE STATE OF FLORIDA

Senator LEMIEUX. Thank you, Madam Chair, and thank you, Ranking Member Inhofe, for allowing us to testify at this hearing today.

I want to echo upon the comments of my senior Senator from Florida about the potential environmental and economic damage that this oil spill could cause to our home State.

Florida is a State with 1,800 miles of coastline, 1,200 miles of sandy beaches. We have a $65 billion tourist industry. Last year, we welcomed 80 million visitors. Our salt water fishing industry

has a $5 billion impact on our economy, and there are 50,000 Floridians who are employed by that industry. Recreational boating has an $8 billion impact to our economy. It provides 222,000 jobs.

I, like other folks who have testified here today, had the opportunity to fly out over the spill last week, last Monday. And you see the devastation that this oil spill is going to cause. And while we have all been hopeful that British Petroleum was going to be able to stop this spill, we are now 3 weeks after the spill started. The attempts to stop it have not worked.

And I think if I could leave this Committee with a thought and one point to remember, it would be this. Everything must continue to be done to stop the oil spill, but right now the States in the Gulf need money to be able to put together mitigation teams, teams to prevent the oil from washing ashore. And they need substantial dollars to do so.

We can have hearings, and you will have hearings, I am sure, to find out what went wrong and why it went wrong. You will have hearings to talk about what Federal agencies should have done better and should have worked better.

What we need right now, for Florida, for Mississippi, for Alabama, for Louisiana and for Texas, because, as my colleague said, if this spill continues until the relief valves are drilled, we are going to have oil in the entire Gulf of Mexico which potentially cannot only get in the Florida Keys and into our reefs, but go all the way up the Atlantic side, is we need an evergreen fund of money that is put forth by British Petroleum right now, say put $1 billion in there.

Let those dollars go to the States, let the States put emergency response teams up, just like we do during hurricanes. And we know how to do this. We are going to have local governments, business, volunteers, State government and county government all working together to mitigate that oil coming upon shore. We need to do this for our fisheries, we need to do this for our tourism, we need to do this for our environment, and we need to do it for our economy.

So, there are a lot of good things that have been said here today. Madam Chair, that is the point that I really want to leave this Committee with is we do not need to just be worrying about all the reasons why this happened. We certainly need to continue to work to stop the oil from spilling. But we need dollars right now in the Gulf States to mitigate and prevent this oil from doing tremendous environmental and economic harm.

Thank you, Madam Chair.

Senator BOXER. Thank you very much.

Thank you all, Senators, and I would ask at this time for the three panelists for Panel One. Actually, this was a prelude to Panel One. Lamar McKay is the Chairman and President of British Petroleum America. BP owns the lease from the Mineral Management Service to drill for minerals at the site of the ongoing spill. Steven L. Newman is the President and CEO of Transocean, which owns the oil drilling rig associated with the oil spill named the Deepwater Horizon. That rig was leased to BP. And Tim Probert, President of Global Business Lines and Chief Health, Safety and Environmental Officer for Halliburton. Halliburton led the cementing

efforts to temporarily cap the exploratory well involved in the ongoing spill.

And gentlemen, as you did in the Energy Committee, I am going to administer the oath to you. So, if the witnesses would all rise and raise your right hand. Do you swear and affirm that the testimony you will give before this Committee will be the truth, the whole truth and nothing but the truth?

[Witnesses reply in the affirmative.]

Senator BOXER. Let the record show that the witnesses answered in the affirmative.

We welcome you here, and we are going to go into your testimony. So, we are going to start with Mr. McKay of BP America.

Welcome.

STATEMENT OF LAMAR MCKAY, CHAIRMAN AND PRESIDENT, BP AMERICA

Mr. MCKAY. Thank you, Chairman. Chairman Boxer, Ranking Member Inhofe, members of the Committee, my name is Lamar McKay, and I am Chairman and President of BP America.

It is obvious we have experienced a tragic set of events. Three weeks ago tonight, 11 people lost their lives and 17 were seriously injured. My deepest sympathies go out to the families.

They have suffered much along the Gulf Coast. This disaster is impacting everyone along the Gulf Coast. It is understandable to me. I grew up in Mississippi. I lived in Louisiana most of my working career. And I know what people are going through.

Over the last few days, I have seen the response firsthand, and I have talked with men and women on the front line. There is a deep and steadfast resolve to do all we humanly can to stop this leak, contain this spill, and to minimize the damage suffered by the environment and the people of the Gulf Coast.

As a responsible party under the Oil Pollution Act, we will carry out our responsibilities to mitigate the environment, to mitigate the environmental and economic impacts of the incident. Our efforts are part of a Unified Command that has established, that was established within hours of the accident and provides a structure for our work with the Departments of Homeland Security and Interior, as well as Defense, Energy, OSHA and other Federal agencies, as well as affected State and local governments and Transocean.

We are grateful for the involvement of President Obama and members of his Cabinet and for the leadership and direction and resources they have provided. We are also grateful to the Governors, congressional Members, State agencies and local communities of Mississippi, Alabama, Louisiana, Texas and Florida.

I want to underscore that the global resources of BP are committed to this effort and have been from the outset. Nothing is being spared. Everyone understands the enormity of what lies ahead and is working to deliver an effective response at the wellhead, on the water, and on the shoreline.

Before I describe our round-the-clock efforts to respond to this series of events, I want to reiterate our commitment to find out what happened. Understanding what happened and why it happened is a complex process. We are cooperating with the joint investigation

by the Departments of Homeland Security and Interior and investigations by Congress.

In addition, BP has commissioned an internal investigation whose results we plan to share so that we can all learn from these terrible events.

I want to be clear. It is inappropriate to draw any conclusions before all the facts are known. As we speak, our investigation team is locating and analyzing data, interviewing available witnesses, and reviewing and assessing evidence. And today I think it is important to give you and the American public an idea of the questions we are asking.

There are really two key sets of questions here, and we are actively exploring both of them. First, what caused the explosion and fire on board Transocean's Deepwater Horizon? Second, why did Transocean's blowout preventer, the key failsafe mechanism, fail to shut in the well and release the rig?

With respect to the first question, the key issue we are examining is how hydrocarbons could have entered the well bore. BP, as a leaseholder and the operator of the well, hired Transocean to drill the well and fulfill their safety responsibilities. We do not know yet precisely what happened on the night of April 20th. But what we do know is that there were anomalous pressure test readings prior to the explosion. These could have raised concerns about well control prior to the operation to replace mud with seawater in the well in preparation for setting of the cement plug.

Through our investigation we hope to learn more about what happened and what was done in the hours before the explosion.

Apart from looking at the causes of the explosion, we are also examining why the blowout preventer, the BOP as it is called, did not work as the ultimate failsafe to seal the well and prevent an oil spill. Clearly, the BOP remains a critical piece of equipment throughout all operations to ensure well control up until the time the well is sealed with a cement plug and is temporarily abandoned.

We will continue full speed ahead with our investigation, keeping all lines of inquiry open until we find out what happened and why. At the same time, we are fully engaged in efforts to respond to these events. Our subsea efforts to stop the flow of oil and secure the well involve four concurrent and parallel strategies.

Activating the BOP would be the preferred course since it would stop or diminish the flow at the source. Unfortunately, this has proved unsuccessful so far. We are working on a containment system which will place large enclosures, or containment chambers, on top of the leaks and conduct flow to a ship at the surface. There have been technical challenges. Engineers are now working to see if these challenges can be overcome.

We have begun to drill the first of two relief wells designed to intercept and permanently secure the original well. We began drilling the first relief well on May 2nd and expect to begin the second relief well later this week. This operation could take approximately 3 months.

A fourth effort, known as a top kill, uses a tube to inject a mixture of multi-sized particles directly into the blowout preventer to

cap the well. It is a proven industry technique and has been used worldwide, but never in 5,000 feet of water.

Now, on the open water, a fleet of about 300 response vessels has been mobilized, and about 1 million feet of boom are now in place with more than a million more feet available. We are also attacking the spill area with Coast Guard approved biodegradable dispersants which are being applied from planes and boats. We have also developed and tested a technique to apply dispersant at the leak point on the sea bed. The EPA is carefully analyzing options for this technique's further use.

To protect the shoreline, we are implementing what the U.S. Coast Guard has called the most massive shoreline protection effort ever mounted. Thirteen staging areas are in place, and over 4,000 volunteers have already been trained.

We recognize that there are both environmental and economic impacts. BP will pay all necessary cleanup costs and is committed to paying legitimate claims for other loss and damages caused by the spill.

Tragic and unforeseen as this accident was, we must not lose sight of why BP and other energy companies are operating in the offshore, including the Gulf of Mexico. The Gulf provides 1 in 4 barrels of oil produced in the United States, a resource our economy requires.

Now, BP and the entire energy industry are under no illusions about the challenge we face. We know that we will be judged by our response to this crisis. We intend to do everything in our power to bring this well under control, to mitigate the environmental impact of the spill, and to address economic claims in a responsible manner.

No resource available to this company will be spared. I can assure you that we and the entire industry will learn from this terrible event and emerge from it stronger, smarter and safer.

Thank you very much for the opportunity to appear before you today. I would be happy to answer your questions.

[The prepared statement of Mr. McKay follows:]

[**Editor's note:** Mr. McKay's responses to questions for the record printed here are incomplete because some of his responses contain confidential business information. This material is available in the Committee's files.]

Senate Environment & Public Works Committee

Tuesday, May 11, 2010[1]

Written Testimony

Lamar McKay

Chairman & President, BP America

Chairman Boxer, Ranking Member Inhofe, members of the committee, I am Lamar McKay, Chairman and President of BP America.

We have all experienced a tragic series of events.

I want to be clear from the outset that we will not rest until the well is under control. As a responsible party under the Oil Pollution Act, we will carry out our responsibilities to mitigate the environmental and economic impacts of this incident.

We – and, indeed, the entire energy sector as a whole - are determined to understand what happened, why it happened, take the learnings from this incident, and make the changes necessary to make our company and our industry stronger and safer. We understand that the world is watching and that we and our industry colleagues will be judged by how we respond to these events.

Three weeks ago tonight, eleven people were lost in an explosion and fire aboard the Transocean Deepwater Horizon drilling rig, and seventeen others were injured. My deepest sympathies go out to the families and friends who have suffered such a terrible loss and to those in Gulf Coast communities whose lives and livelihoods are being impacted.

This was a horrendous accident. We are all devastated by this. It has profoundly touched our employees, their families, our partners, customers, those in the surrounding areas and those in government with whom we are working. There has been tremendous shock that such an accident could have happened, and great sorrow for the lives lost and the injuries sustained. The safety of our employees and our contractors and the safety of the environment are always our first priorities.

[1] The data described throughout this testimony is accurate to the best of my knowledge as of 8am Monday, May 10, 2010, when this testimony was submitted. The information that we have continues to develop as our response to the incident continues.

Even as we absorb the human dimensions of this tragedy, I want to underscore our intense determination to do everything humanly possible to minimize the environmental and economic impacts of the resulting oil spill on the Gulf Coast. From the outset, the global resources of BP have been engaged. Nothing is being spared. We are fully committed to the response.

And from the beginning, we have never been alone. On the night of the accident, the Coast Guard helped rescue the 115 survivors from the rig. The list of casualties could easily have been longer without the professionalism and dedication of the Coast Guard.

Even before the Transocean Deepwater Horizon sank on the morning of April 22nd, a Unified Command structure was established, as provided by federal regulations. Currently led by the National Incident Commander, Admiral Thad Allen, the Unified Command provides a structure for BP's work with the Coast Guard, the Minerals Management Service and Transocean, among others.

Immediately following the explosion, in coordination with the Unified Command, BP began mobilizing oil spill response resources including skimmers, storage barges, tugs, aircraft, dispersant, and open-water and near shore boom.

Working together with federal and state governments under the umbrella of the Unified Command, BP's team of operational and technical experts is coordinating with many agencies, organizations and companies. These include the Departments of Energy, Interior, Homeland Security and Defense, National Oceanic and Atmospheric Administration (NOAA), US Fish & Wildlife Service (USFW), National Marine Fisheries Service (NMFS), EPA, OSHA, Gulf Coast state environmental and wildlife agencies, the Marine Spill Response Corporation (an oil spill response consortium), as well as numerous state, city, parish and county agencies.

As Coast Guard Rear Admiral Mary Landry noted on April 28: "BP is being appropriately forward leaning in bringing all the resources to bear to control this spill."

The industry as a whole has responded in full support. Among the resources that have been made available:

- Drilling and technical experts who are helping determine solutions to stopping the spill and mitigating its impact, including specialists in the areas of subsea wells, environmental science and emergency response;

- Technical advice on blowout preventers, dispersant application, well construction and containment options;

- Additional drilling rigs to serve as staging areas for equipment and responders, more remotely operated vehicles (ROVs) for deep underwater work, barges, support vessels and additional aircraft, as well as training and working space for the Unified Command.

The actions we're taking

As Chairman and President of BP America, I am part of an executive team that reports directly to our Global CEO, Tony Hayward. I am BP's lead representative in the US and am responsible for broad oversight and connectivity across all of our US-based businesses.

BP itself has committed tremendous global resources to the effort. Among many other tasks, they are helping to train and organize the more than 10,000 citizen volunteers who have come forward to offer their services.

Indeed, we have received a great many offers of help and assistance. The outpouring of support from government, industry, businesses and private citizens has truly been humbling and inspiring. It is remarkable to watch people come together in crisis.

Our efforts are focused on two overarching goals:

- Stopping the flow of oil; and
- Minimizing the impact on the environment.

Subsea efforts to secure the well

Our subsea efforts to stop the flow of oil and secure the well have involved four concurrent strategies:

- Working to activate the blow-out preventer (BOP) on the well using submersible ROVs. This would be the preferred course of action, since it would stop or diminish the flow at the source on the ocean floor. Unfortunately, this effort has so far not proved successful.

- Work continues on a subsea oil recovery plan using a containment system, placing large enclosures or containment chambers atop the leaks and conducting flow from the ocean floor to a ship at the surface through a pipe. As we anticipated, however, there have been technical challenges. This system has never been used before at 5,000 feet. Engineers are now working to see if these challenges can be overcome.

- We have begun to drill the first of two relief wells to permanently secure the well. These wells are designed to intercept the original MC252 #1

well. Once this is accomplished, a specialized heavy fluid will be injected into the well bore to stop the flow of oil and allow work to be carried out to permanently cap the existing well. On Sunday, May 2nd, we began drilling the first of these wells. A second drillship will mobilize to the area to begin the second relief well later this week. This relief well operation could take approximately three months.

- A fourth effort is known as a "top kill." It is a proven industry technique for capping wells and has been used worldwide, but never in 5000 feet of water. It uses a tube to inject a mixture of multi-sized particles directly into the blowout preventer. The attempt to do this could take two or three weeks to accomplish.

We have succeeded in stopping the flow from one of the three existing leak points on the damaged well. While this may not affect the overall flow rate, it should reduce the complexity of the situation to be dealt with on the seabed.

Attacking the spill

We are attacking the spill on two fronts: in the open water and on the shoreline, through the activation of our pre-approved spill response plans.

- **On the water**

On the open water, we have mobilized a fleet of 294 response vessels, including skimmers, storage barges, tugs, and other vessels. The Hoss barge, the world's largest skimming vessel, has been onsite since April 25. In addition, there are 15, 210-foot Marine Spill Response Corporation Oil Spill Response Vessels, which each have the capacity to collect, separate, and store 4000 barrels of oil. To date, over 97,000 barrels of oil and water mix have been recovered.

Also on the open water, we are attacking the spill area with Coast Guard-approved biodegradable dispersants, which are being applied from both planes and boats. Dispersants are soap-like products which help the oil to break up and disperse in the water, which, in turn, helps speed natural degradation.

Thirty-seven aircraft, both fixed-wing and helicopters, are now supporting the response effort. Over 444,000 gallons of dispersant have been applied on the surface and more than 180,000 gallons are available. Typically, about 2,100 gallons of dispersant is needed to treat 1,000 barrels of oil.

To ensure that adequate supplies of dispersant will be available for surface and subsea application, the manufacturer has stepped up the manufacturing process,

and existing supplies are being sourced from all over the world. The cooperation of industry partners has been superb and that is deeply, deeply appreciated.

We have also developed and tested a technique to apply dispersant at the leak point on the seabed. As far as we are aware, this is the first documented attempt to apply dispersant at the source. Early evidence suggests that the test has been impactful, and we are working with NOAA, EPA, and other agencies to refine and improve the technique. EPA is carefully monitoring the impact of dispersant and is analyzing its potential impact on the environment and options for possible future use.

- **Actions to protect the shoreline**

Near the shoreline, we are implementing with great urgency oil spill response contingency plans to protect sensitive areas. According to the Coast Guard, the result is the most massive shoreline protection effort ever mounted.

To ensure rapid implementation of state contingency plans, we announced last week that we would make available grants of $25 million to Louisiana, Mississippi, Alabama, and Florida.

To date, we have about one million feet of boom deployed in an effort to contain the spill and protect the coastal shoreline, and another 1.3 million feet are available. The Department of Defense is helping to airlift boom to wherever it is needed across the Gulf coast.

Incident Command Posts have been or are being established at:

- **Alabama:** Mobile;
- **Florida:** St. Petersburg;
- **Louisiana:** Robert and Houma.

Thirteen staging areas are also in place to help protect the shoreline:

- **Alabama:** Theodore, Orange Beach and Dauphin Island;
- **Florida:** Panama City and Pensacola.
- **Louisiana:** Grand Isle, Venice, Shell Beach, Slidell, Cocodrie;
- **Mississippi:** Pascagoula, Biloxi and Pass Christian;

Highly mobile, shallow draft skimmers are also staged along the coast ready to attack the oil where it approaches the shoreline.

Wildlife clean-up stations are being mobilized, and pre-impact baseline assessment and beach clean-up will be carried out where possible. Rapid response teams are ready to deploy to any affected areas to assess the

type and quantity of oiling, so the most effective cleaning strategies can be applied.

A toll-free number has been established to report oiled or injured wildlife, and the public is being urged not to attempt to help injured or oiled animals, but to report any sightings via the toll-free number.

Contingency plans for waste management to prevent secondary contamination are also being implemented.

Over 10,000 personnel are now engaged in the response, including shoreline defense and community outreach.

Additional resources, both people and equipment, continue to arrive for staging throughout the Gulf states in preparation for deployment should they be needed.

Communication, community outreach, & engaging volunteers

We are also making every effort to keep the public and government officials informed of what is happening.

BP executives have regularly briefed the President's Cabinet and National Security Council team, members of Congress, the governors and attorneys general of the Gulf Coast states, and many local officials.

On the ground, in the states and local communities, we are working with numerous organizations such as fishing associations, local businesses, parks, wildlife and environmental organizations, educational institutions, medical and emergency establishments, local media, and the general public.

BP is leading volunteer efforts in preparation for shoreline clean-up. We have and will continue to help recruit and deploy volunteers, many of whom are being compensated for their efforts, to affected areas. More than 14,000 calls from volunteers offering their help have been received and over 4,000 volunteers have been trained thus far.

Volunteer activities at this time are focused on clearing the beaches of existing debris and placing protective boom along the shoreline. Our "adopt a boom" program is proving very successful in engaging local fishermen in the response. More than 600 fishing vessels are signed up to deploy boom and assist with the response.

There are five BP community-outreach sites engaging, training, and preparing volunteers:

- **Alabama:** Mobile;
- **Florida:** Pensacola;
- **Louisiana:** Venice
- **Mississippi**: Pascagoula and Biloxi.

A phone line has been established for potential volunteers to register their interest in assisting the response effort.

Coping with economic impacts

We recognize that beyond the environmental impacts there are also economic impacts on the people of the Gulf Coast states. BP will pay all necessary clean up costs and is committed to paying legitimate claims for other loss and damages caused by the spill.

We have put in place a BP Claims Process. All claimants are being directed to a toll-free number and a website and will be assigned to experienced adjusters who will assist them in making their claim.

As an alternative, claimants can visit one of BP's Community Outreach Centers or claims centers.

The process is being expedited to make immediate payments to those who have experienced a loss of income, while the overall claim is more fully evaluated. As of today, we have paid out approximately $3.5 million.

Commitment to investigate what happened

BP is one of the lease holders and the operator of this exploration well. As operator, BP hired Transocean to conduct the well drilling operations. Transocean owned the Deepwater Horizon drilling rig and its equipment, including the blowout preventer.

The questions we all want answered are: What happened on the seabed and aboard the Deepwater Horizon and why did these things happen?

A full answer to those questions will have to await the outcome of a joint investigation by the Departments of Homeland Security and Interior, investigation by Congress, and an independent internal investigation that BP is conducting.

BP's investigation into the cause of this accident is being led by a senior BP executive from outside the affected business. The team has more than 40 people. The investigation is ongoing and has not yet reached conclusions about incident cause. We intend to share the results of our findings so that our industry and our regulators can benefit from the lessons learned.

Investigations take time, of course, in order to ensure that the root cause of the failure is fully understood. But let me give you an idea of the questions that BP and the entire energy industry, are asking:

- What caused the explosion and fire?
- And why did the blowout preventer fail?

Only seven of the 126 onboard the Deepwater Horizon were BP employees, so we have only some of the story, but we are working to piece together what happened from meticulous review of the records of rig operations that we have as well as information from those witnesses to whom we have access. We are looking at our own actions and those of our contractors, as is the Marine Board.

We are looking at why the blowout preventer did not work because that was to be the fail-safe in case of an accident. The blowout preventer is a 450-ton piece of equipment that sits on top of the wellhead during drilling operations. It contains valves that can be closed remotely if pressure causes fluids such as oil or natural gas to enter the well and threaten the drilling rig. By closing this valve, the drilling crew can regain control of the well.

Blowout preventers are used on every oil and gas well drilled in the world today. They are carefully and deliberately designed with multiple levels of redundancy and are regularly tested. If they don't pass the test, they are not used.

The systems are intended to fail-closed and be fail-safe; sadly and for reasons we do not yet understand, in this case, they were not. Transocean's blowout preventer failed to operate.

All of us urgently want to understand how this vital piece of equipment and its built-in redundancy systems failed and what measures are required to prevent this from ever happening again. In this endeavor, you will have the full support of BP as well as, I am sure, the rest of the industry.

Energy policy remains critical

Tragic and unforeseen as this accident was, we must not lose sight of why BP and other energy companies are operating in the offshore, including the Gulf of Mexico. The Gulf is one of the world's great energy producing basins, providing one in four barrels of oil produced in the United States. That is a resource that powers America and the world every day, one our economy requires.

Conclusion

But before we can think about the future, we have to deal with the immediate challenge of today.

BP is under no illusions about the seriousness of the situation we face. In the last three weeks, the eyes of the world have been upon us. President Obama and members of his Cabinet have visited the Gulf region and made clear their expectations of BP and our industry. So have members of Congress, as well as the general public.

We intend to do everything within our power to bring this well under control, to mitigate the environmental impact of the spill and to address economic claims in a responsible manner.

Any organization can show the world its best side when things are going well. It is in adversity that we truly see what they are made of.

We know that we will be judged by our response to this crisis. No resource available to this company will be spared. I can assure you that we and the entire industry will learn from this terrible event, and emerge from it stronger, smarter and safer.

Horizon Response Current State
Reservoir
Water
Well
Riser
Flowline
Flowline
Flowline

Subsea Containment System

RELIEF WELL #2
DEEPWATER ENTERPRISE DRILL SHIP
RELIEF WELL #1
RELIEF WELLS &
SUBSEA CONTAINMENT

POST-HEARING QUESTIONS FOR THE RECORD
U.S. SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
MR. LAMAR MCKAY, CHAIRMAN AND PRESIDENT, BP AMERICA INC.
"ECONOMIC AND ENVIRONMENTAL IMPACTS OF THE RECENT OIL SPILL IN THE GULF OF MEXICO"
HEARING HELD ON MAY 11, 2010

ANSWER SET
SEPTEMBER 27, 2010

QUESTIONS FROM CHAIRMAN BOXER

25. Provide BP's best estimate of the total volume of dispersants that have been released to date, including both underwater and surface applications.

In total, the Unified Command (UC) estimates that approximately 1.84 million gallons of dispersant was applied underwater and on the surface to promote the break-up and dissolution of oil escaping from the MC 252 well.[1] With the exception of 200 gallons of surface dispersants used on July 19, and 5 gallons of surface use on September 4, all dispersant use ceased when the Mississippi Canyon 252 (MC 252) well was capped on July 15, 2010.[2]

26. Provide documents that describe the complete chemical composition of all dispersants applied to date in response to the Deepwater Horizon spill.

Two dispersants have been used in response to the *Deepwater Horizon* incident – Corexit 9500A and Corexit 9527A. Corexit 9500A is a mixture of hydrotreated light petroleum distillates, propylene glycol, and particular organic sulfonic acids salts. Petroleum distillates are a mixture of short chain hydrocarbons with low acute toxicity to humans. Propylene glycol is used in many consumer products, including injectable medications. Nalco, the manufacturer of both dispersants, has claimed that the identity of the organic sulfonic acids salts is confidential and proprietary. Organic sulfonic acids salts belong to a class of chemicals that are used in household detergents and dyes.

Corexit 9527A is a mixture of 2-butoxyethanol (also called ethylene glycol butyl ether), propylene glycol, and proprietary organic sulfonic acids. According to Nalco, 2-butoxy\ethanol has low acute toxicity to mammals and is highly biodegradable.

The U.S. Environmental Protection Agency (EPA) has documented and published on its website more detailed Corexit 9500A and 9527A constituent information, as follows: 1,2-Propanediol (CASRN 57-55-6); Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1) (CASRN 577-11-7); Sorbitan, mono-(9Z)-9-octadecenoate (CASRN 1338-43-8);

[1] http://app.restorethegulf.gov/go/doc/2931/894669/
[2] http://www.deepwaterhorizonresponse.com/external/content/document/2931/835583/1/Fact%20Sheet%20Dispersants%20july%2029%202010-1.pdf

Sorbitan, mono-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs (CASRN 9005-65-6); Sorbitan, tri-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs (CASRN 9005-70-3); 2-Propanol, 1-(2butoxy-1-methylethoxy)- (CASRN 29911-28-2); and Distillates (petroleum), hydrotreated light (CASRN 64742-47-8). EPA notes that only Corexit 9527A contains 2-butoxyethanol (CASRN 111-76-2).[3]

To the extent the Committee seeks additional information and documentation regarding the chemical composition of Corexit 9500A and 9527A, BP respectfully suggests that Nalco, the manufacturer of the two Corexit products, is best positioned to provide this information.

27. **Describe what alternative dispersants, sorbents, or other materials that has BP evaluated for potential use in response to the Deepwater Horizon spill? Also describe the alternatives that BP analyzed, including those that it determined could be feasible to use, including analyses of the potential effectiveness, toxicity and availability of such alternatives.**

BP Exploration and Production, Inc. (BP E&P) and the EPA considered the utility of alternative dispersants, and conducted tandem investigations into the toxicity, effectiveness, and availability of those dispersants listed on the EPA's National Contingency Plan (NCP) Product Schedule.[4]

On May 19, 2010, the EPA issued an Addendum to its Dispersant Monitoring and Assessment Directive, requiring BP E&P to identify alternative dispersants for subsea and subsurface application that met certain toxicity, effectiveness, and availability requirements. On May 20, 2010, BP E&P provided the EPA with an analysis of the eight alternative dispersants that were approved for use by the EPA and potentially available for incident response. Based on available data, only five of the eight alternative dispersants met the toxicity criteria specified by EPA in the Addendum: Sea Brat #4, Nokomis 3-AA, Nokomis 3-FA, Neos AB3000, and Mare Clean 200. However, only one of the five – Sea Brat #4 – was available in sufficient quantities to be used within 72 hours, as required by the Addendum. Because Sea Brat #4 contains a chemical that may degrade into nonylphenol, a potential endocrine disruptor and chemical that may persist in the environment, BP E&P recommended further evaluation to determine whether that product would be appropriate for the proposed use, considering the location where it would be applied (*i.e.*, at the ocean floor), and the volume that might be applied. Given the EPA's stated desire to choose the least toxic and most effective dispersant available, BP E&P reported to the EPA that the Corexit products do not contain compounds that degrade into nonylphenol, that "COREXIT was the best and most appropriate choice at the time when the incident occurred, and that COREXIT remains the best option for subsea application."[5]

BP E&P continued to investigate available alternative dispersants. A team of BP experts was assembled to design a series of tests to assess the efficacy and toxicity of Corexit 9500A and

[3] *See* http://www.epa.gov/bpspill/dispersants-qanda.html#list.
[4] http://www.epa.gov/emergencies/content/ncp/product_schedule.htm
[5] http://www.epa.gov/bpspill/dispersants/5-21bp-response.pdf

the five alternative dispersants that met the toxicity standards of the EPA's May 19, 2010 Addendum. The outcome of that research, a three volume report entitled *Dispersant Studies of the Deepwater Horizon Oil Spill Response,* was provided to the EPA on June 3 (Volume 1), June 16 (Volume 2), and July 17, 2010 (Volume 3). Volume 1 of the report provided a review of published literature on dispersant use and impacts. Volume 2 described laboratory studies of the relative effectiveness of several products at dispersing oil from the MC 252 well, as well as limited studies in the field. Volume 3 described studies of the relative toxicity of several dispersants when applied to MC 252 oil. The conclusion of these studies was that many of the alternative dispersants were either less effective or more toxic than Corexit 9500A, and the studies ultimately concluded, in Volume 3, that Corexit 9500A was the best option for this incident, considering its availability, effectiveness in dispersing this source of oil, toxicity, and ability to biodegrade in the environment.[6]

Beginning in May, the EPA commenced its own testing of the eight dispersants listed on the NCP Product Schedule to determine whether a less toxic, more effective, sufficiently available dispersant existed.[7] The EPA released its findings in two phases, on June 30 and August 2, 2010.[8] In its June 30, 2010 Phase I Report, the EPA reported its conclusion that "none of the eight dispersants tested, including the product in use in the Gulf, displayed biologically significant endocrine disrupting activity. While the dispersant products alone – not mixed with oil – have roughly the same impact on aquatic life, JD-2000 and Corexit 9500 were generally less toxic to small fish and JD-2000 and SAF-RON GOLD were least toxic to mysid shrimp."[9] Following Phase II testing, during which the acute toxicity of the eight dispersants was tested in combination with Louisiana Sweet Crude Oil, the EPA concluded in its Report released on August 2, 2010, that Corexit 9500A "is generally no more or less toxic than the other available alternatives."[10]

QUESTIONS FROM SENATOR WHITEHOUSE

1. Who selected Corexit 9500A and Corexit 9527A? The Coast Guard or British Petroleum (BP)? Did BP already have stockpiles of one or both of these dispersants in reserve, at the time of the spill? If so, how many gallons did BP already have? At what point(s) did BP order more of these dispersants? Please detail efforts to comply with EPA's directive and seek alternative dispersants to use in the Gulf spill?

Selection of Dispersants

Federal regulations establish a legal process for making decisions to use dispersants in response to an oil spill. The process requires input, review and approval by many stakeholders,

[6] Gulf of Mexico SPU, *Dispersant Studies of the Deepwater Horizon Oil Spill Response*, Vols. 1, 2 & 3.
[7] http://www.epa.gov/bpspill/dispersants/Rainey-letter-052610.pdf
[8] http://www.epa.gov/bpspill/dispersants-testing.html
[9] http://www.epa.gov/bpspill/dispersants-testing.html#phase1
[10] *Id.*

including the responsible parties, the U.S Environmental Protection Agency (EPA), the U.S. Coast Guard, natural resource trustees, Regional Response Teams (RRT) and Area Committees for the affected areas. The process begins when the EPA prepares and maintains a schedule of dispersants that may be authorized for use on oil discharges, as required by the National Contingency Plan (NCP), 40 CFR § 300.900 and § 300.905. Corexit 9527A has been on EPA's NCP Product Schedule since March 10, 1978, and Corexit 9500A, a newer formula, has been on the NCP Product Schedule since April 13, 1994.[11]

The NCP requires Area Committees and RRTs to develop plans that address potential use of dispersants in particular areas and environments. In the Gulf region, Nalco (the maker of Corexit) is identified as a source of dispersants, and Corexit 9500A and Corexit 9527A are identified as acceptable dispersants in what we understand are the current versions of the Alabama, Mississippi and Northwest Florida Area Contingency Plan, the EPA Region 4 RRT Policy for dispersant use in Florida, Alabama and Mississippi; and the New Orleans Sector Area Contingency Plan for Louisiana.

Consistent with these area contingency plans, BP Exploration and Production (BP E&P) developed an Oil Spill Response Plan (OSRP) for its Gulf of Mexico operations that proposed to use dispersants in appropriate circumstances and identified Corexit-brand products as the dispersants that would be used. The U.S. Minerals Management Service (MMS) approved that plan in 2009. As anticipated by the provisions of its approved OSRP, when this incident occurred, BP E&P's Incident Command team in Robert, Louisiana recommended that dispersants be used and proposed to use the Corexit products. The Corexit products were selected because they were identified as acceptable in the area contingency plans, listed in BP's MMS-approved OSRP, and were the only dispersants on the NCP Product Schedule that were available immediately in the quantities needed to respond to the spill. All use of dispersants requires additional approval from the U.S. Coast Guard's Federal On-Scene Coordinator (FOSC), and that approval was provided by the FOSC for this incident. The Coast Guard consults with the EPA and other members of the RRT before approving dispersant use.

Dispersant Reserves

Immediately prior to the *Deepwater Horizon* incident on April 20, 2010, the Marine Spill Response Center (MSRC), the Oil Spill Response Organization used by BP and other oil companies operating in the Gulf of Mexico, had approximately 62,000 gallons of Corexit 9500A and Corexit 9527A stored in the event of a spill. On April 21, 2010, BP placed an order with Nalco, manufacturer of the Corexit dispersants, for an additional 500,000 gallons. This shipment began to arrive four to five days later. BP continued to order 300,000 gallons of dispersant every ten to twelve days until the MC 252 well stopped flowing on July 15, 2010.[12]

[11] http://www.epa.gov/oem/docs/oil/ncp/schedule.pdf
[12] *See* http://app.restorethegulf.gov/go/doc/2931/894669/

Consideration and Testing of Alternative Dispersants

BP E&P's efforts to comply with the EPA's directive to evaluate potential alternative dispersants are detailed in the response to Chairman Boxer's Question No. 27.[13]

2. EPA's website states that "it is unknown if dispersed oil has toxic implications to the human populations because bioaccumulation through the food chain has not been evaluated," and, "the long term effects on aquatic life are unknown, which is why EPA and the Coast Guard are requiring BP to implement a robust sampling and monitoring plan." Who first raised the idea of injecting dispersant at the wellhead? What is known about the use of dispersants in deep water?

Due to the unique set of challenges presented by this spill, the Unified Command (UC) made the decision to test application of dispersant at the base of the Mississippi Canyon 252 (MC 252) well as a means to more effectively reduce the environmental and safety impact of oil in the Gulf of Mexico and its coastline, and maintain low levels of volatile organic compounds (VOCs) and hydrocarbon vapors at the surface near the source. The testing plan and subsea use of dispersants was authorized by the EPA and the U.S. Coast Guard, who issued directives mandating a comprehensive water column monitoring plan to analyze the effectiveness of the subsurface use of dispersants and any impacts on the environment, water and air quality, and human health. Pursuant to these directives, the EPA and Coast Guard remained active in the daily use and monitoring of dispersants both above and below the water's surface.[14]

In a May 24, 2010 press release, the EPA and Coast Guard observed that "dispersants are less toxic and shorter-lived than the oil;" "the underwater use of dispersants is effective at breaking up the oil and, to this point, does not seem to have had any significant impacts on aquatic life;" and using "the dispersant underwater at the source of the leak also requires far less dispersant to be applied."[15] Now several months into the water sampling monitoring program, the EPA has concluded that "subsurface use of the dispersant is effective at reducing the amount of oil from reaching the surface – and can do so with the use of less dispersant than is needed when the oil does reach the surface. This has been an important step to reduce the potential for damage from oil reaching fragile wetlands and coastal areas."[16] With the exception of 200 gallons of surface dispersant used on July 19, and 5 gallons of surface dispersant used on September 4, all dispersant use ceased when the MC 252 well was capped on July 15, 2010.[17]

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[13] http://www.epa.gov/emergencies/content/ncp/product_schedule.htm
[14] http://www.epa.gov/bpspill/dispersants-qanda.html#underwater-use
[15] http://yosemite.epa.gov/opa/admpress.nsf/e77fdd4f5afd88a3852576b3005a604f/0657789df08a1aba8525772e004d7a7e!OpenDocument
[16] http://www.epa.gov/bpspill/dispersants-qanda.html#underwater-use
[17] *Id.*

3. **EPA has directed BP to implement the dispersant sampling and monitoring plan. Please describe this plan in detail, including where you are sampling, what you are sampling for, how often you sample, and the nature and extent of monitoring. Please also explain how much of the information you are collecting about dispersant is provided to EPA, and how much of this information is currently available to the public.**

Water column monitoring is being conducted in response to directives from the U.S. Coast Guard and the EPA; this monitoring is designed to detect the presence of subsurface dispersed oil and to determine whether there are indications of environmental harm resulting, directly or indirectly, from the use of dispersants (*e.g.*, significantly depleted oxygen levels arising from aerobic bacteria breaking down dispersed oil). The data collected by the water column monitoring program are available to the EPA and the National Oceanic and Atmospheric Administration (NOAA) and are regularly posted on NOAA's website.[18] Indeed, the EPA and NOAA scientists are present on the water column sampling vessels sourced by BP E&P, as well as on NOAA's own sampling vessels operating in the Gulf.[19]

The data resulting from monitoring on BP E&P-sourced vessels are further posted on BP's website as they become available, together with sampling plans and procedures. This information, as well as the analytical data and sampling plans from the other types of water, air, and sediment monitoring conducted by BP E&P or its contractors, is available from the "Monitoring and Sampling Information" page of BP's website.[20] New or additional monitoring data from the continuing sampling programs will similarly be released as they become available for posting.

4. **Are your employees, agents, or contractors observing plumes or clouds of oil stratified in deep waters of the Gulf? Are your employees, agents or contractors monitoring deep water movement of oil as it exits the wellhead? Are you providing access to third party scientists, to be able to conduct this monitoring?**

The UC has been monitoring the water column surrounding the MC 252 wellsite since the *Deepwater Horizon* incident. Comprehensive data from this coordinated effort, including the outcome of fluorescence testing performed on UC research vessels, is regularly posted to the NOAA website.[21] Using this data, BP has plotted, in ten-day increments, the fluorescence testing locations and findings of all UC research vessels operating in the Gulf. Notably, recent charts, such as those for the period July 29 through August 8, 2010, show that very few vessels detected a fluorescence anomaly – that is, the existence of oil particles at levels higher than the normal background level or instrument detection limits – in the area surrounding the MC 252

[18] NOAA posts all collected data to http://www.nodc.noaa.gov/General/DeepwaterHorizon/support.html. The Joint Analysis Group, a government working group tasking with examining this data, had further made its reports publically available at http://ecowatch.ncddc.noaa.gov/JAG/reports.html.

[19] *See* http://www.noaa.gov/sciencemissions/bpoilspill.html; http://www.epa.gov/bpspill/dispersants/subsurface-dispersant-addendum-final.pdf

[20] http://www.bp.com/genericarticle.do?categoryId=9033821&contentId=7062604

[21] http://www.nodc.noaa.gov/General/DeepwaterHorizon/support.html

well, or elsewhere in the Gulf.[22] These charts are available on BP's website, and will continue to be updated as additional information becomes available.[23]

Third-party scientists have broad access to the waters of the Gulf to perform research and monitor the existence of oil in the water column. Notably, with the exception of the area immediately surrounding the incident site where active response efforts are ongoing, third-party scientists have unrestricted access to the waters of the Gulf to perform their own sampling. BP E&P has further invited renowned research organizations, such as Lawrence Berkeley National Laboratory and Australia's Commonwealth Scientific and Industrial Research Organization (CSIRO), to study the water column and conduct research from BP E&P-sourced vessels in the Gulf as part of the UC sampling effort. Other third-party scientists have also worked from BP E&P-funded research vessels at the invitation of the EPA.

[22] UC's Marine Science Coordinator and BP's Chief Scientist establish a broad outline of locations to be tested. This plan, however, is adaptive to circumstances on the water (e.g., response efforts) and determinations by the Chief Scientists aboard each vessel on the best manner to ensure that testing is comprehensive and in accordance with EPA directives.

[23] http://www.bp.com/genericarticle.do?categoryId=9033821&contentId=7062604

WILMERHALE

October 1, 2010

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The Honorable Barbara Boxer
Committee on Environment and Public Works
United States Senate
112 Hart Senate Office Building
Washington, D.C. 20510

The Honorable James M. Inhofe
Committee on Environment and Public Works
United States Senate
453 Russell Senate Office Building
Washington, D.C. 20510

Re: Response to Chairman Boxer and Ranking Member Inhofe's Correspondence Dated August 18, 2010 to Mr. Lamar McKay, President and CEO of BP America Inc.

Dear Senators Boxer and Inhofe:

I am writing on behalf of BP America Inc. (BPA) regarding your correspondence to Mr. Lamar McKay, BPA's Chairman and President, dated August 18, 2010, in which you and your colleagues requested responses to questions for the record submitted in connection with the hearing held by the Committee on Environment and Public Works on May 11, 2010. In response to Question 3(e) submitted by Senator Boxer, BPA is producing additional subsea video footage related to the Deepwater Horizon incident.

Specifically, BPA is producing one set of live video feed taken from ROVs at the Mississippi Canyon #252 well site from the time period between April 30, 2010 and September 7, 2010. Please note that although prior productions of subsea video footage made to Senator Boxer on May 18, May 19, May 20, June 8, and July 12, 2010 respectively have covered a portion of this time period, footage from different ROVs is being produced today. This footage was not previously available as the RAID drives on which it was being captured were continuing to record video at the time the prior productions were made. The RAID drives included in this production have been Bates labeled BP-HZN-VID00000006 to BP-HZN-VID00000014.

Please note that today's production reflects the information that BPA was able to collect within this timeframe, and BPA's understanding of these matters may evolve as the company

collects additional information related to the Committee's requests. BPA is working to obtain additional information in response to the Committee's remaining questions and will provide this information as soon as practicable.

If you have any questions or require additional information, please feel free to contact me or Liz Reicherts at (202) 457-6585.

Sincerely,

Kenneth R. Meade /DK

Kenneth R. Meade

WILMERHALE

November 19, 2010

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The Honorable Barbara Boxer
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Re: Supplemental Response to Chairman Boxer and Ranking Member Inhofe's Correspondence Dated August 18, 2010 to Mr. Lamar McKay, President and CEO of BP America Inc.

Dear Senators Boxer and Inhofe:

I am writing on behalf of BP America Inc. (BPA) regarding your correspondence to Mr. Lamar McKay, BPA's Chairman and President, dated August 18, 2010, in which you and your colleagues requested responses to questions for the record submitted in connection with the hearing held by the Committee on Environment and Public Works on May 11, 2010. In response to Question 3(e) submitted by Senator Boxer, BPA is making a final production of subsea video footage related to the *Deepwater Horizon* incident. Today's production supplements prior productions of subsea video made to Senator Boxer on May 18, May 19, May 20, June 8, July 12, and October 1, 2010 respectively.

BPA is producing live video feed taken from ROVs at the Mississippi Canyon #252 well site from the time period between August 23, 2010 and August 30, 2010, and from the time period between September 27, 2010 and November 3, 2010. BP ceased live video feed on or about November 3, 2010 due to inactivity at the Mississippi Canyon # 252 well site. The production you are receiving today has been Bates labeled BP-HZN-VID00000015.

Additionally, we would like to correct a typographical error in our October 1, 2010 transmittal letter. The letter stated that BPA was producing live video feed up through September 7, 2010 in our last production. BPA in fact produced live video feed up through September 27, 2010.

BPA is working to obtain additional information in response to the Committee's remaining questions and will provide this information as soon as practicable. If you have any

questions or require additional information, please feel free to contact me or Liz Reicherts at (202) 457-6585.

Sincerely,

Kenneth R. Meade

Senator BOXER. Thank you very much, Mr. McKay.

Mr. Newman, President and CEO of Transocean, who owned the drilling rig associated with the spill, the Deepwater Horizon, and leased it to BP.

STATEMENT OF STEVEN NEWMAN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, TRANSOCEAN, LTD.

Mr. NEWMAN. Thank you.

Madam Chairman Boxer, Ranking Member Inhofe and other members of the Committee, I want to thank you for the opportunity to speak with you today.

My name is Steven Newman. I am the President and Chief Executive Officer of Transocean, Ltd. Transocean is a leading offshore drilling contractor with more than 18,000 employees worldwide.

I am a petroleum engineer by training, and I have spent years working on and with drilling rigs. I have worked at Transocean for more than 15 years, and I am incredibly proud of the contributions our company has made to the energy industry during that time. I sit before you today, however, with a heavy heart.

The last few weeks have been a time of great sadness and reflection for our company and for me personally. Nothing is more important to me—and to Transocean—than the safety of our crew members. And my heart aches for the widows, parents and children of the 11 crew members, including 9 Transocean employees, who died in the Deepwater Horizon explosion. These were exceptional men, and we are committed to doing everything we can to support their families as they struggle to cope with this tragedy.

Over the last few weeks we have also seen great acts of courage and kindness in our colleagues and in our communities. That courage and kindness was embodied by the 115 crew members who were evacuated from the Deepwater Horizon and who were as focused on the safety of their colleagues as they were on themselves. It was embodied by the brave men and women of the U.S. Coast Guard who provided onsite response and search and rescue efforts, and the medical professionals and the families and friends of the crew members who were waiting for them when they arrived on shore. And it is embodied by our friends and colleagues at Transocean and across the industry who have rallied to help the families of those who were lost in this accident.

This has been a very emotional period for all of us at Transocean. It has also been a period of intense activity and efforts. Immediately after the explosion, Transocean began working with BP and the Unified Command in the effort to stop the flow of hydrocarbons from the well. Our finest engineers and operational people have been working with BP to identify and pursue options for stopping the flow as soon as possible.

Our drilling rig, the Development Driller III, is involved in drilling the relief well at the site, and our drill ship, the Discoverer Enterprise, is standing by on location to carry out unique oil recovery operations in the Gulf. We will continue to support BP and the Unified Command in all of these efforts.

At the same time, we have also been working hard to get to the bottom of the question to which this Committee and the American public want and deserve an answer. What happened on the night

of April 20th? And how do we assure the American public that it will not happen again?

Transocean has assembled an independent investigative team to determine the cause of these tragic events, a team that includes dedicated Transocean and industry experts. They will be interviewing people who have potentially helpful information and studying the operations and equipment involved.

Because the drilling process is a collaborative effort among many different companies, contractors and subcontractors, the process of understanding what led to the April 20th explosion and how to prevent such an accident in the future must also be collaborative. Our team is working side by side with others, including BP and governmental agencies, and these investigative efforts will continue until we have satisfactory answers.

While it is still too early to know exactly what happened on April 20th, we do have some clues as to the cause of the disaster. The most significant clue is that the events occurred after the well construction was essentially finished. Drilling had been completed on April 17th, and the well had been sealed with casing and cement.

For that reason, the one thing that we do know is that on the evening of April 20th there was a sudden catastrophic failure of the cement, the casing, or both. Without a failure of one of those elements, the explosion could not have occurred.

It is also clear that the drill crew had very little, if any, time to react. The initial indications of trouble and the subsequent explosion were almost instantaneous.

What caused that sudden violent failure? Was the well properly designed? Were there problems with the casing or the seal assembly? Was the casing properly cemented and the well effectively sealed? Were all appropriate tests run on the cement and the casing? Were the blowout preventers, the BOPs, damaged by the surge that emanated from the well beneath? Did the surge blow debris into the BOPs, preventing them from squeezing, shearing or closing the pipe? These are some of the critical questions that need to be answered in the weeks and months ahead.

Until we know exactly what happened on April 20th, we cannot determine how best to prevent such tragedies in the future. But regardless of what the investigations undercover, ours is an industry that must put safety first. We must do so for the sake of our employees, for the sake of their families, and for the sake of people all over the world who use, enjoy and rely on our oceans and waterways for their sustenance.

Thank you again for the opportunity to speak here today, and I am happy to answer any questions.

[The prepared statement of Mr. Newman follows:]

Testimony
Before The Committee On Environment & Public Works
United States Senate
May 11, 2010

Economic and Environmental Impacts of the Recent Oil Spill in the Gulf of Mexico

Steven Newman, Chief Executive Officer, Transocean, Ltd.

Chairman Boxer, Ranking Member Inhofe, and other members of the Committee, I want to thank you for the opportunity to speak with you today.

My name is Steven Newman, and I am the Chief Executive Officer of Transocean, Ltd. Transocean is a leading offshore drilling contractor, with more than 18,000 employees worldwide. I am a petroleum engineer by training, I have spent considerable time working on drilling rigs and I have worked at Transocean for more than 15 years. I am proud of the Company's historical contributions to the energy industry during that time. Today, however, I sit before you with a heavy heart.

The last few weeks have been a time of great sadness and reflection for our Company – and for me personally. Nothing is more important to me and to Transocean than the safety of our employees and crew members, and our hearts ache for the widows, parents and children of the 11 crew members – including nine Transocean employees – who died in the *Deepwater Horizon* explosion. These were exceptional men, and we are committed to doing everything we can to support their families as they struggle to cope with this tragedy.

We have also seen great courage and kindness since April 20 that has reaffirmed our faith in the human spirit. That spirit is embodied by the 115 crew members who were rescued from the *Deepwater Horizon* and were as worried about the fate of their colleagues as they were about themselves. It is embodied by the emergency workers and friends and family who were waiting for the injured crew members when they arrived ashore. And it is embodied by the friends and colleagues who have rallied to help the families of those who were lost at sea.

While this has been a very emotional period for all of us at Transocean, it has also been a period of intense activity and effort.

Immediately after the explosion, Transocean began working with BP (in BP's role as operator/leaseholder of this well) and the "Unified Command" (which includes officials from the U.S. Coast Guard, the Department of the Interior's Minerals Management Service (MMS), and the National Oceanic and Atmospheric Administration (NOAA)) in the effort to stop the flow of hydrocarbons. Our finest operational personnel and engineers have been working with BP to identify and pursue options for stopping the flow as soon as possible. Our drilling rig, the *Development Driller III*, is involved in drilling the relief well at the site, and our drillship, the *Discoverer Enterprise*, is involved in the unique oil recovery operations in the Gulf. We will continue to support BP and the Unified Command in all of these efforts.

We have also been working hard to get to the bottom of the question to which the Members of this Committee – and the American people – want and deserve an answer: What happened the night of April 20th, and how do we assure the American public that it will not happen again?

Transocean has assembled an investigative team to determine what led to these tragic events – a team that includes dedicated Transocean and industry experts. They will be interviewing people who have potentially helpful information and studying the operations and the equipment involved. Our team is working side by side with others, including BP and governmental agencies, and these investigative efforts will continue until we have satisfactory answers.

As is often the case after a tragedy of this kind, there has been a lot of speculation about the root cause. I believe it is premature to reach definitive conclusions about what caused the April 20th explosion, but on behalf of our Transocean employees, I feel compelled to respond to some of this speculation. In particular, as we seek to uncover what happened, it is important to understand the well construction process – and the roles of the various parties involved in an operation like the one that was taking place in the Gulf of Mexico.

All offshore oil and gas production projects begin and end with the Operator. When the Operator (in this case, BP) leases a parcel of land on the outer continental shelf (OCS) from the U.S. government, it must prepare and submit detailed plans specifying ***where*** and ***how*** a well is to be drilled, cased, cemented and completed based on its interpretation of propriety data, including geologic data from seismic surveys. Once those plans are approved and permits are issued and work begins, the Operator – or leaseholder – serves as the general contractor that manages all of the work that is performed on its lease. In this capacity, the

Operator hires various contractors to perform specific functions in the construction of the well.

In addition, the Operator brings in various sub-contractors to perform specific roles. For example:

- The Operator selects a driller (in this case, Transocean), which provides a vessel (called a "rig") from which drilling operations are performed. As the name suggests, the driller is also responsible for rotating the long string of drill pipe with a drill bit on the end that drills a hole deeper and deeper into the ocean floor. The Operator's well plan dictates the manner in which the drilling is to occur, including the location, the path, the depth, the process and the testing. The drill bits, which are selected by the Operator, are supplied by another sub-contractor.

- A key element of the drilling process is drilling mud, a heavy fluid manufactured to the Operator's specifications. That mud is pumped into the well hole and circulated in order to hold back the pressure of the reservoir and prevent oil, gas or water in that reservoir from moving to the surface through the well. The mud is monitored by another sub-contractor (the mud engineer) (in this instance, M-I Swaco) to detect any problems.

- As the drilling progresses, huge pipes are inserted into the well to maintain the integrity of the hole that has been drilled and to serve as the primary barrier against fluids entering the well. This job is coordinated by the casing sub-contractor selected by the Operator (in this case, Weatherford). In its well plan, the Operator specifies the diameter and strength of each casing segment, purchases the casing, and dictates how it will be cemented in place. Well casing is inserted in a telescope-like manner, with each successive section inside the previous one. Each casing segment also includes a seal assembly to ensure pressure containment.

- After drilling is concluded, yet another area of expertise comes into play. The cementing sub-contractor is responsible for encasing the well in cement, for putting a temporary cement plug in the top of the well, and for ensuring the integrity of the cement. The purpose of this work is to seal the well to make sure that the contents of the reservoir (*i.e.*, oil and natural gas) are not driven by the reservoir pressure into the well. (Once drilling is complete and the well is cased and cemented, it is no longer necessary to circulate drilling mud through the well; at that point, the casing and cement serve to

control the formation pressure.) The cementing process is dictated by the Operator's well plan, and the testing of the cement on the *Deepwater Horizon* was performed by the cement contractor (Haliburton in this instance) as specified and directed by BP.

Against that background, let me turn to the April 20 *Deepwater Horizon* explosion and its possible causes. What is most unusual about the explosion in this case is that it occurred ***after*** the well construction process was essentially finished. Drilling had been completed on April 17, and the well had been sealed with cement (to be reopened by the Operator at a later date if the Operator chose to put the well into production). At this point, drilling mud was no longer being used as a means of reservoir pressure containment; the cement and the casing were the barriers controlling pressure from the reservoir. Indeed, at the time of the explosion, the rig crew, at the direction of the Operator, was in the process of displacing drilling mud and replacing it with sea water.

For that reason, the one thing we know with certainty is that on the evening of April 20, there was a sudden, catastrophic failure of the cement, the casing, or both. Therein lies the root cause of this occurrence; without a disastrous failure of one of those elements, the explosion could not have occurred. It is also clear that the drill crew had very little (if any) time to react. The explosions were almost instantaneous.

What caused that catastrophic, sudden and violent failure? Was the well properly designed? Was the well properly cemented? Were there problems with the well casing? Were all appropriate tests run on the cement and casings? These are some of the critical questions that need to be answered in the coming weeks and months.

Over the past several days, some have suggested that the blowout preventers (or BOPs) used on this project were the cause of the accident. That simply makes no sense. A BOP is a large piece of equipment positioned on top of a wellhead to provide pressure control. As explained in more detail in the attachment to my testimony, BOPs are designed to quickly shut off the flow of oil or natural gas by squeezing, crushing or shearing the pipe in the event of a "kick" or "blowout" – a sudden, unexpected release of pressure from within the well that can occur during drilling.

The attention now being given to the BOPs in this case is somewhat ironic because at the time of the explosion, the drilling process was complete. The well

had been sealed with casing and cement, and within a few days, the BOPs would have been removed. At this point, the well barriers – the cementing and the casing – were responsible for controlling any pressure from the reservoir.

To be sure, BOPs are an important aspect of well control. During drilling, BOPs provide a secondary means of controlling pressure if the primary mechanisms (*e.g.*, drilling mud) prove inadequate. BOPs are robust, sophisticated pieces of equipment that can be activated by various direct and remote methods. Since the BOPs were still in place in this circumstance, they may have been activated during this event and may have restricted the flow to some extent. At this point, we cannot be certain. But we have no reason to believe that they were not operational – they were jointly tested by BP and Transocean personnel as specified on April 10 and 17 and found to be functional. We also do not know whether the BOPs were damaged by the surge that emanated from the well beneath or whether the surge may have blown debris (*e.g.*, cement, casing) into the BOPs, thereby preventing them from squeezing, crushing or shearing the pipe.

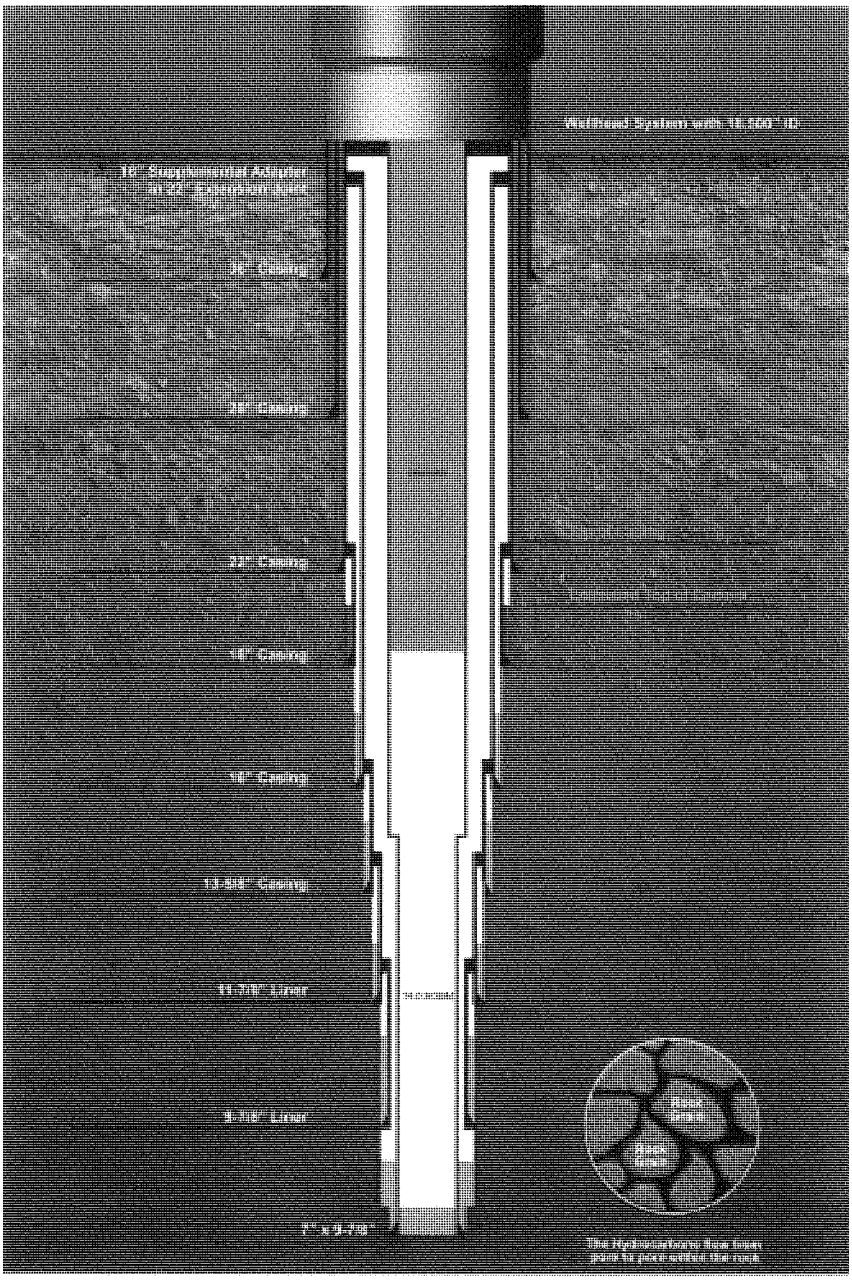
For these reasons, I believe it is inappropriate to focus any causation discussions exclusively on the BOPs. Certainly, we need to understand what happened to the BOPs and whether changes should be made to improve the effectiveness of these devices in the unusual circumstances of an accident like the one on April 20. But the BOPs were clearly not the root cause of the explosion. Our most important task is to understand why a cased and cemented wellbore suddenly and catastrophically failed. As a starting point, our investigative team has looked at numerous possible causes, contributing factors, or trigger events, in an effort to ensure that nothing is overlooked in this investigation.

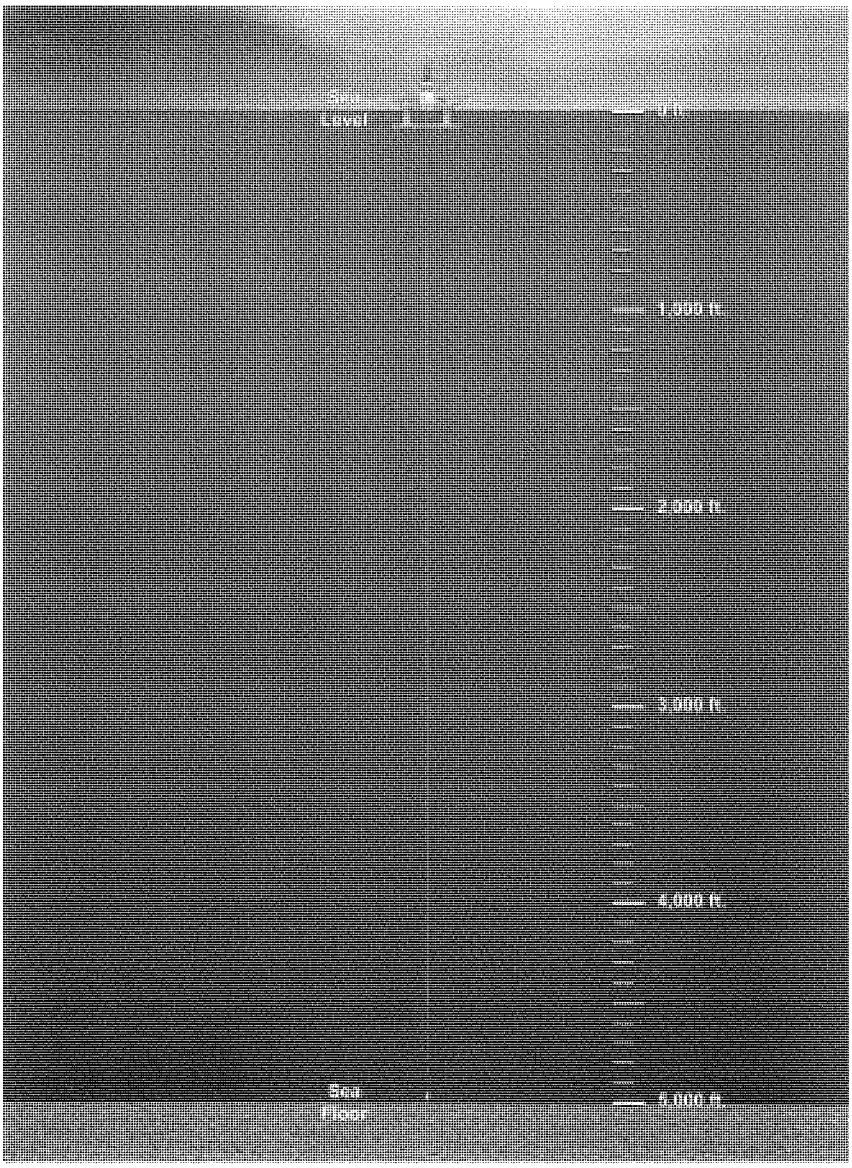
As I explained earlier, the well construction process is a collaborative effort. For the same reason, the process of understanding what led to the April 20 explosion and how to prevent such an accident in the future must also be collaborative. ***Ours is an industry that must put safety first.*** And I can assure you that Transocean has never – and will never – compromise on safety. In 2009, Transocean recorded its best ever Total Recordable Incident Rate (TRIR). And the federal agency charged with enforcing safety on deepwater oil rigs, MMS, which – as you know – is a unit of the U.S. Department of the Interior, awarded one of its top prizes for safety to Transocean in 2009. The MMS SAFE Award recognizes "exemplary performance by Outer Continental Shelf (OCS) oil and gas operators and contractors." In the words of MMS, this award "highlights to the public that companies can conduct offshore oil and gas activities safely and in a pollution-free manner, even though such activities are complex and carry a significant element of

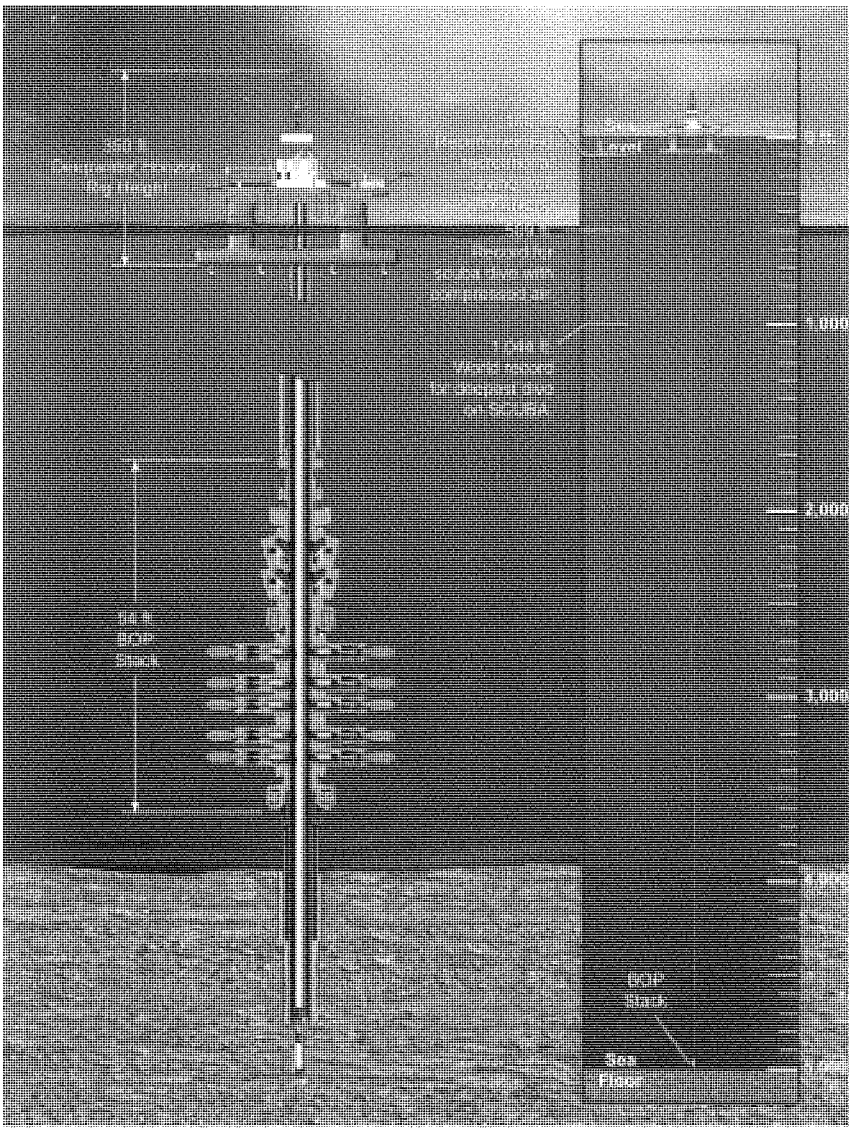
risk." In awarding this prize to Transocean, MMS credited the Company's "outstanding drilling operations" and a "perfect performance period."

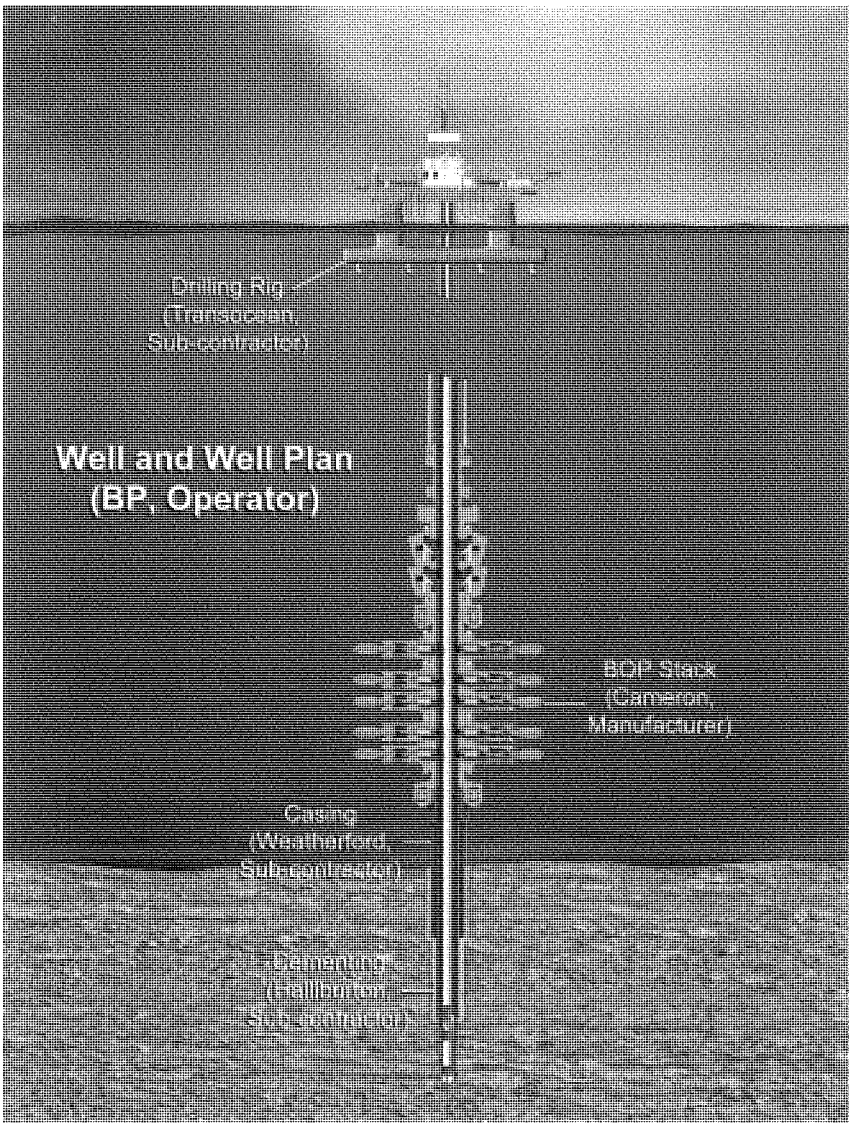
Despite a strong safety record, Transocean has never been complacent about safety. We believe that any incident is one too many. Last year, our Company experienced an employee accident record that I found unacceptable. As a result, I recommended to our Board of Directors that they withhold bonuses for all executives in order to make clear that achieving stronger safety performance was a basic expectation – and fundamental to our success. That recommendation was accepted, and our Company paid no executive bonuses last year, in order to send a loud message that we evaluate our success in large part based on the safety of our operations.

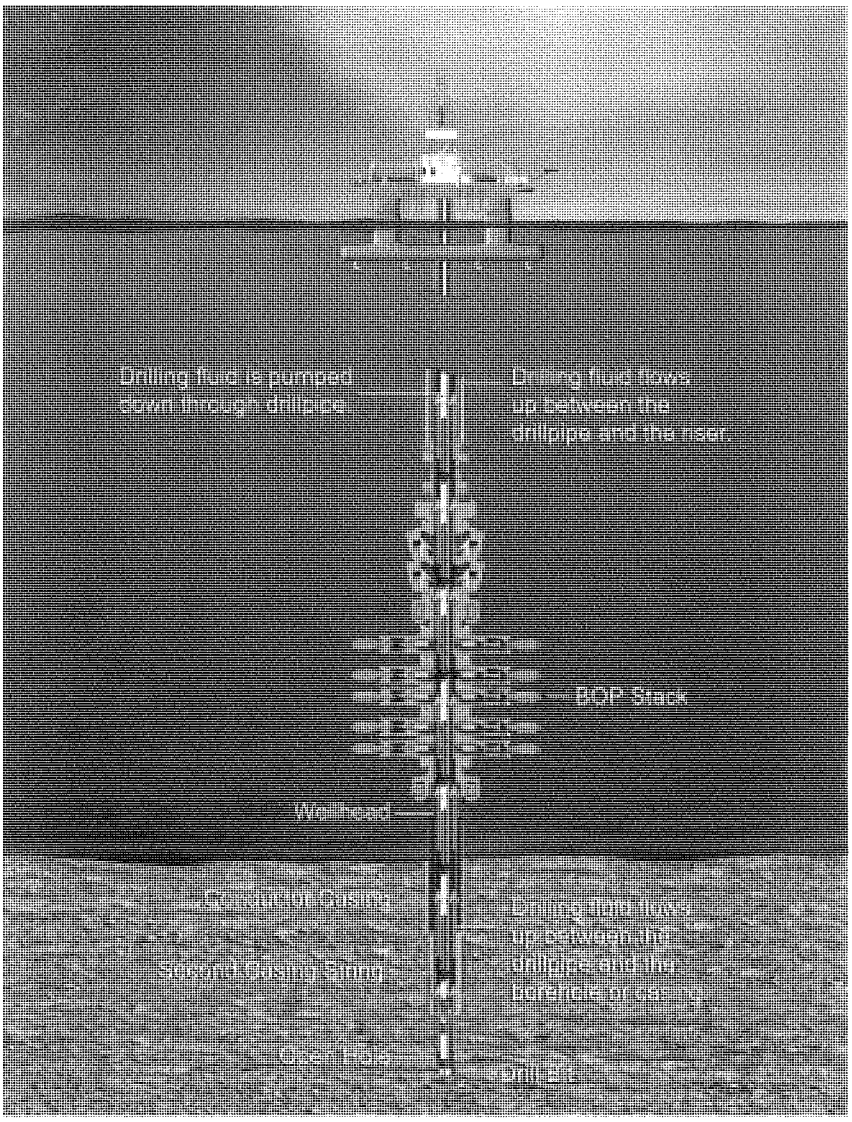
Until we fully understand what happened on April 20, we cannot determine with certainty how best to prevent such tragedies in the future. But I am committed – for the sake of the men who lost their lives on April 20, for the sake of their loved ones, for the sake of all the hard-working people who work on Transocean rigs around the world, and for the sake of people in each of the affected states and worldwide who rely on our oceans and waterways for their livelihood – to work with others in the industry, with Congress and with all involved federal agencies to make sure that such an incident never happens again.

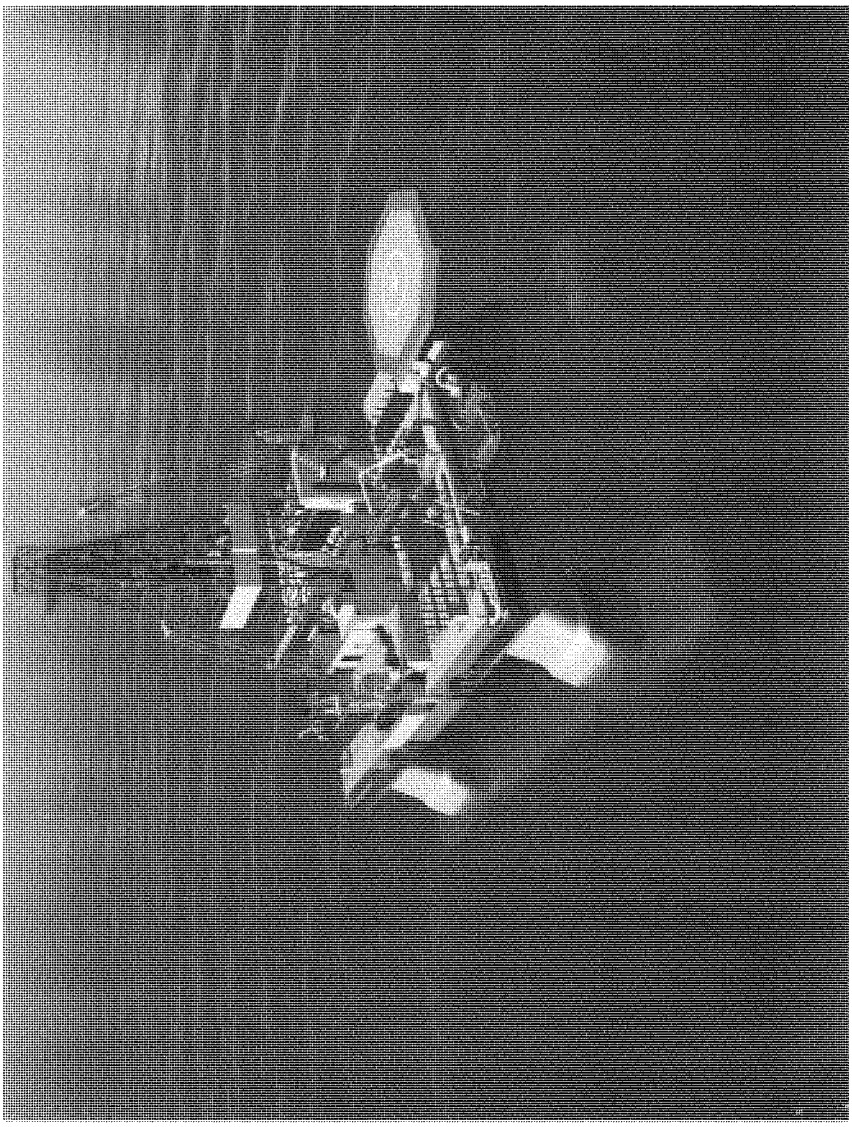

Wellhead System with 15,000 PSI
13" Supplemental Adapter
20" Casing
30" Casing
22" Casing
18" Casing
16" Casing
13.5/8" Casing
11.7/8" Liner
9.7/8" Liner
7" x 9.7/8"
Blind Shear
Shear Rams
Pipe Rams
The Hydroactuators flow lines
point to place without the rods

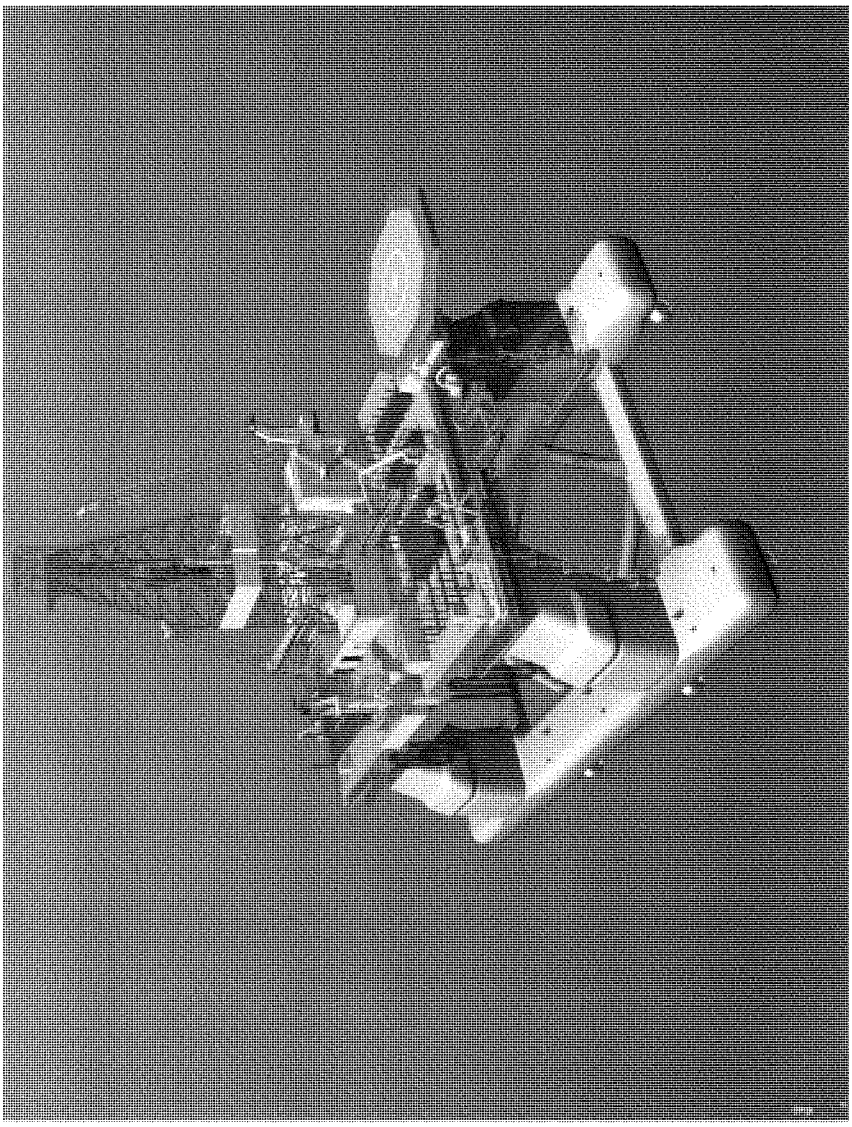

1,000 ft.
2,000 ft.
3,000 ft.
4,000 ft.
5,000 ft.




Drilling Rig
(Transocean,
Subcontractor)
Well and Well Plan
(BP, Operator)
BOP Stack
(Cameron,
Manufacturer)
Casing
(Weatherford,
Subcontractor)
Cementing
(Halliburton,
Subcontractor)


Drilling fluid is pumped down through drillpipe
Drilling fluid flows up between the drillpipe and the riser
BOP Stack
Wellhead
Second Casing String
Drilling fluid flows up between the drillpipe and the borehole or casing
Drillpipe





ENVIRONMENT AND PUBLIC WORKS COMMITTEE HEARING

MAY 11, 2010

FOLLOW-UP QUESTIONS FOR WRITTEN SUBMISSION

Questions from Senator Barbara Boxer:

1. **Prior to the deployment of the Deepwater Horizon BOP stack (BOP) that was on the rig in April 2010, what actions did Transocean direct, oversee, take or otherwise provide for related to any inspections or tests of the BOP to ensure that it met or exceeded all operational requirements, including legal requirements and industry standards?**

    a. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to any such actions; and**

    b. **Provide the Committee with the applicable legal requirements or industry standards and the results of tests or other activities used to determine that the BOP met or exceeded such requirements or standards.**

The numerous components comprising the *Deepwater Horizon*, including the BOP, were designed, manufactured, and tested by multiple third parties including Original Equipment Manufacturers (OEM); assembled into the finished rig; tested again; and inspected before being used at any well site. While a comprehensive narrative regarding all activities is not possible, Transocean produces and refers to the following responsive, non-privileged documents, including:

Editor's Note: The documents listed throughout are available in the Committee's files.

- A ten-year history of the construction and maintenance of the *Deepwater Horizon*, including operations manuals and risk assessments (*see* TRN-HCEC-00017787 through TRN-HCEC-00018995, TRN-HCEC-00024447 through TRN-HCEC-00025980, TRN-HCEC-00026736 through TRN-HCEC-00054353, TRN-HCEC-00060137 through TRN-HCEC-00061142, TRN-HCEC-00061611 through TRN-HCEC-00062425, TRN-HCEC-00062829 through TRN-HCEC-00063076, TRN-USCG_MMS-00012251 through TRN-USCG_MMS-00013683, TRN-USCG_MMS-00014359 through TRN-USCG_MMS-00014404, TRN-HCJ-00122213 through TRN-HCJ-00123650, TRN-HCEC-00077207 through TRN-HCEC-00077327);
- Supporting documents including the BOP's and related equipment's control system data books, testing procedures and certifications (*see* TRN-HCEC-00000095 through TRN-HCEC-00004635, TRN-HCEC-00005402 through TRN-HCEC-00005797, TRN-HCEC-00007060 through TRN-HCEC-00009439, TRN-HCEC-00011564 through TRN-HCEC-00011567, TRN-HCEC-00012869 through TRN-HCEC-00012951, TRN-HCEC-00016187 through TRN-HCEC-

00016208, TRN-HCEC-00016979 through TRN-HCEC-00017164, TRN-HCEC-00019165 through TRN-HCEC-00024446, TRN-HCEC-00054354 through TRN-HCEC-00060136, TRN-HCEC-00061143 through TRN-HCEC-00061610, TRN-USCG_MMS-00013684 through TRN-USCG_MMS-00014358, TRN-USCG_MMS-00024249 through TRN-USCG_MMS-00024253, TRN-HCEC-00077765 through TRN-HCEC-00077793);

- Inspections and audits of the *Deepwater Horizon*, including the BOP, by third parties including MMS, Lloyd's Register and ModuSpec (*see* TRN-HCEC-00063449 through TRN-HCEC-00063894, TRN-USCG_MMS-00030803 through TRN-USCG_MMS-00030837, TRN-HCJ-00127953 through TRN-HCJ-00128197, TRN-HCEC-00066722 through TRN-HCEC-00066723, TRN-HCEC-00090493 through TRN-HCEC-00090994);
- Other inspections, maintenance records and tests regarding the following times:
    - BOP acquired from the OEM in 2000 (see TRN-HCJ-00121119 through TRN-HCJ-00122172);
    - BOP put into operation on the Deepwater Horizon MODU in 2001 (see TRN-USCG_MMS-00000001 through TRN-USCG_MMS-00011648, TRN-USCG_MMS-00024270 through TRN-USCG_MMS-00026047, TRN-HCEC-00064675 through TRN-HCEC-00064682, TRN-HCJ-00093709 through TRN-HCJ-00120896, TRN-HCJ-00122173 through TRN-HCJ-00122193); and
    - BOP used on the Macondo well from February 8, 2010 through April 20, 2010 (see TRN-HCEC-00000001 through TRN-HCEC-00000094, TRN-HCEC-00064683 through TRN-HCEC-00064694, TRN-USCG_MMS-00026048 through TRN-USCG_MMS-00026273, TRN-HCEC-00064937 through TRN-HCEC-00065070).

Transocean understands the term "legal requirements" to refer to the regulations applicable to MODUs operating in U.S. federal waters. The regulations require an offshore lessee, here BP, to submit a well plan to the Bureau of Ocean Energy Management (BOEM). The design, functionality, maintenance and inspection requirements for BOPs are part of the lessee's well plan, and are governed by 30 C.F.R. §§ 250.440-250.451. BOP testing procedures are governed by 30 C.F.R. §§ 250.515, and operational design requirements are governed by 30 C.F.R. § 250.516. In addition, 30 C.F.R. § 250.446, which governs BOP maintenance and inspection requirements, incorporates by reference API RP 53 §§ 17.10-17.12 and 18.10-18.12. Transocean's maintenance program has a policy of compliance with API 53 that Transocean believes meets the compliance standards of BOEM regulations. *See* Transocean's Well Control Handbook, TRN-HCEC-00005402 through TRN-HCEC-00005797. In addition, API Specification 16D establishes design standards for systems that are used to control BOPs and associated valves that control well pressure during drilling operations. The specifications describe the following control system categories: control systems for surface mounted BOP stacks; control systems for subsea BOP stacks; discrete hydraulic and electro-hydraulic/multiplex control systems for subsea BOP stacks; control systems for diverter equipment; auxiliary equipment control systems and interfaces; emergency disconnect sequenced systems (EDS);

backup systems; and special deepwater/harsh environment features. The *Deepwater Horizon* BOP control system was built in compliance with API Specification 16D, First Edition, which was in effect at the time of its manufacture.

The requirements of MODU Code of the International Maritime Organization (IMO) (1989 ed.), and the Marshall Islands (the flag state for the *Deepwater Horizon*) are the same as the requirements of the coastal state (here, the United States).

Transocean's maintenance philosophy combines knowledge and experience from a variety of sources including:

- Original Equipment Manufacturer (OEM) recommendations
- Legislation
- Industry practices (API, IADC, etc.)
- Internal and external equipment alerts and product information bulletins
- Actual equipment performance
- Change requests and recommendations from the field
- Periodic reviews by Transocean
- Risk-based assessment of criticality
- Class society and flag state requirement
- Operator-driven requirements
-

Transocean thus applies an ongoing maintenance schedule that is not based on a fixed time interval and is often more proactive or frequent than a fixed time schedule.

2. **After the deployment of the Deepwater Horizon BOP stack (BOP) that was on the rig in April 2010, what actions did Transocean direct, oversee, take or otherwise provide for related to any inspections or tests of the BOP stack to ensure that it met or exceeded all operational requirements, including legal requirements and industry standards?**

   a. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to any such actions; and**

   b. **Provide the Committee with the applicable legal requirements or industry standards and the results of tests or other activities used to determine that the BOP met or exceeded such requirements or standards.**

Please see the response to Question No. 1 above, including the responsive, non-privileged documents produced. The BOP rams and annulars have been tested regularly since it has been in use aboard the *Deepwater Horizon* and most recently passed tests on April 10, and April 17, 2010. The BOP blind shear rams passed a pressure test on April 20, 2010. *See* TRN-USCG_MMS-00000001 through TRN-USCG_MMS-00011648 (BOP testing results since 2002); TRN-HCEC-00065071 through TRN-HCEC-00066721 (communications between

Transocean and MMS officials regarding the *Deepwater Horizon* in the Gulf of Mexico and BOPs).

3. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to tests of the Deepwater Horizon BOP stack this year.**

The BOP was tested regularly throughout 2010 and passed those tests. The BOP passed its most recent tests on April 10, 2010, and April 17, 2010, and the blind shear rams of the BOP passed pressure tests on April 20, 2010. Transocean produces responsive, non-privileged documents TRN-HCEC-00000001 through TRN-HCEC-00000094 and TRN-HCEC-00031831 through TRN-HCEC-0032092 (IADC Daily Drilling Reports, Daily Operation Reports and Morning Reports documenting the results of the BOP tests conducted in 2010).

As described in our August 18, 2010 letter to BP, a copy of which was provided to you and Ranking Member Inhofe, Transocean also has requested additional records from BP which may have been transferred back to BP shore based records.

4. **Describe whether Transocean requested any exceptions or waivers from the Minerals Management Service's BOP testing requirements, the date and reason for any such request, the requested duration of the exception or waiver, the standard that would have applied absent any such exception or waiver, the Minerals Management Service's response to the request, and whether BP used or relied on the exception or waiver.**

    a. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to any such request for any exceptions or waivers from BOP testing requirements.**

Exceptions or waivers from MMS requirements are obtained, if at all, by the well Operator, here BP. To Transocean's knowledge, BP requested and received an exemption from the MMS/Department of Justice to utilize a digital method of BOP pressure testing in this and other BP operations, and Transocean believes that BP secured MMS approval for that on or about June 2008. This is also referenced in email documents from 2007 provided to the Joint U.S. Coast Guard/BOEM Board of Investigations by BP. *See* BP-HZN-MBI 00032634.

Transocean recorded the results of the 2010 BOP pressure tests on IADC Daily Drilling Reports dated January 1, 2, 8, 15 and 26; February 7–9, 12, 17 and 24; March 4, 15, 26 and 27; and April 3, 9, 10, 17 and 20. In addition to these, Transocean produces responsive, non-privileged documents, including a complete set of the IADC Daily Drilling Reports for the *Deepwater Horizon* at the Macondo well site, from January 2010 to April 20, 2010; *see* TRN-HCEC-00000001 through TRN-HCEC-00000094, TRN-USCG_MMS-00011510 through TRN-USCG_MMS-00011648, TRN-USCG_MMS-00026048 through TRN-USCG_MMS-00026273.

5. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to Transocean's failure to implement any recommendation made to address potential problems with the Deepwater Horizon BOP, including a description of the reasons for any such failure.**

Transocean does not believe that it failed to implement any recommendation made to address potential problems with the *Deepwater Horizon* BOP. Transocean believes the BOP was properly maintained, inspected and operated. With respect to evaluations and recommendations regarding this BOP, Transocean produces responsive, non-privileged documents including the 2010 independent report by ModuSpec. *See* TRN-HCEC-00090686 through TRN-HCEC-00090797.

Transocean also references excerpts from the testimony of BP witness Mr. Neil Cramond at the August 23, 2010 proceeding of the U.S. Coast Guard Marine Board of Investigation. Mr. Cramond testified that in March 2010 "BP commended Transocean" for promptly addressing maintenance items raised in BP's audit, and he testified that "the *Deepwater Horizon* [was] tight, staunch, strong and fit for the work that it was performing" at the Macondo well starting in January 2010. *See* Tr. at 123-24, 128. Please see also the March 29, 2010 email from Angel Rodriguez, of BP, commending Transocean.

6. **Describe whether Transocean had any knowledge of, or if Transocean directed, oversaw, took or otherwise provided for actions that resulted in modification of the Deepwater Horizon BOP stack from January 2005 to the April 2010.**

   a. **For any such modifications to the BOP stack, describe the purpose of the modification, the date of the modification, whether the modification was ever altered, and if the modification was present when the blowout occurred on the Deepwater Horizon in April 2010;**

   b. **Describe whether Transocean informed or requested permission from the Minerals Management Service concerning any such modifications and, if so, any response from the Service; and**

   c. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to any such modifications;**

BOEM regulations require that a BOP include four (4) remote-controlled, hydraulically operated preventors, consisting of one annular, two pipe rams and one blind-shear ram. 30 C.F.R. § 250.441. The BOP on the *Deepwater Horizon* was fitted with seven (7) preventor cavities on the stack and initially had seven preventors (five ram preventors and two annulars), all of which exceeded regulatory requirements. A 2004 modification requested by the Operator converted one of the ram preventers, the lowermost ram preventer, from a conventional well bore sealing ram to a BOP test ram, which allowed for more efficient testing of the BOP. *See* TRN-HCEC-

00064131 through TRN-HCEC-00064132 (October 11, 2004 letter agreement in which BP requested the modification and related responsive, non-privileged documents TRN-HCEC-00077341 through TRN-HCEC-00077609, TRN-HCEC-00077673 through TRN-HCEC-00077677, and TRN-HCEC-00077681 through TRN-HCEC-00077687).

As the Operator, BP presumably coordinated with the Minerals Management Service on that conversion. The BOP rams have been tested regularly since that conversion in 2004.

The following is a list of modifications made to the BOP used by the *Deepwater Horizon* and the dates of those modifications based on information Transocean has located and compiled to date. The list is in chronological order and includes the 2004 addition of a test ram at the request of BP.

- January 1, 2003: Three high-shock flow meters were installed in the BOP control pods to replace the ultrasonic flow meters currently in place.
- January 1, 2003: Retrievable control pods were replaced with non-retrievable control pods.
- July and August, 2004: Modifications were made to reduce unnecessary components on the BOP including some hoses and valves. At the same time, a new rigid conduit manifold was installed and the RMJBs, or riser-mounted junction boxes, were removed.
- November 2004: The lowest variable-bore ram on the BOP stack was modified by inverting it from its original position to make it a test ram.
- Approx. 2004-2005: ROV stab panel modified to consolidate functions to close and lock rams as a single function.
- July 29, 2006: The lower annular valve packing of the BOP was modified to permit stripping operations when the lower annular valve was closed. Specifically, an 18-3/4-inch annular stripper packer was installed.
- June 10, 2007: Software changes were made to allow all functions that previously had been locked out from any of the BOP control panels on rig to become unlocked whenever the EDS command was issued from any of the control panels.
- September 2008: The riser flex joint was replaced.
- August 3, 2009: The auto-shear valve was replaced with a new auto-shear valve supplied by Cameron.

7. **Did Transocean review any studies prior to the Deepwater Horizon blowout in April 2010 that called into question the reliability of BOPs, including reliability at maximum depths? Please identify any studies and summarize their recommendations.**

a. Did Transocean request or require the implementation of any of the recommendations contained in such reports to improve the effectiveness of BOPs?

b. Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to Transocean's review of such studies or use of the information in these studies in Transocean's drilling operations.

Transocean has conducted numerous studies on BOP reliability at its own expense, including an April 2000 *Deepwater Horizon* BOP control system risk assessment (*see* TRN-HCEC-00056391 through TRN-HCEC-00056860). Transocean subscribes to industry literature on a variety of topics, including BOP reliability. Transocean receives IADC publications; API updates; regulatory notices from DNV and ABS; marine notices from IMO, ISM, and SOLAS; and product bulletins from the OEMs. Given the volume of information that numerous Transocean employees fleetwide have reviewed since the *Deepwater Horizon*'s BOP was acquired in 2000, it is not possible to identify specific studies relied or not relied upon nor exact recommendations specific to BOPs operating at depths approaching maximum design tolerance.

While it is not possible to list all publicly available studies on the topic, Transocean is aware of and produces today several responsive, non-privileged documents on BOP reliability. *See* TRN-HCJ-00128198 through TRN-HCJ-00128330 ("SINTEF Report: Reliability of Subsca BOP Systems for Deepwater Application"), TRN-HCJ-00128471 through TRN-HCJ-00128565 ("OTC 14265: Surface BOP for Deepwater Moderate Environment Drilling Operations from a Floating Drilling Unit"; "IADC conference paper: Surface BOP Reliability Issues for Deepwater Floating Drilling Rigs"; "West Engineering Shear Ram Capabilities Study for MMS"; "OTC 15194: Deepwater BOP Control Systems – A Look at Reliability Issues.").

8. Describe whether Transocean has any knowledge of, or if Transocean directed, oversaw, took or otherwise provided for actions that resulted in modification to the BOPs on other rigs operating in United States waters that are similar to any modifications made to the Deepwater Horizon BOP;

a. Provide a list of each rig currently operating in U.S. waters with BOPs that have been so modified, including the name of the rig, the location and the number of individuals working on the rig; and

b. Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to such BOP modifications and any communications with the Minerals Management Service relating to such BOP modifications.

To date, fact-finding efforts have been focused on the *Deepwater Horizon*. We have not undertaken a review of modifications to BOPs on other rigs in U.S. waters, if any. As presently

phrased, the scope of the inquiry is broad. The associated review is a sizeable undertaking, requiring additional time to perform. Should it be permissible to narrow the inquiry, relevant non-privileged information may be retrieved and produced.

9. **Describe whether Transocean has any knowledge of, or if Transocean directed, oversaw, took or otherwise provided for actions that resulted in any type of analysis of the risk of BOP failure, including an "Assurance Analysis," following any modification to the BOP stack on the Deepwater Horizon, or any similar modifications of BOPs on other rigs;**

    a. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to any such analysis.**

In addition to the analyses and testing described in the above responses to Question Nos. 1, 2, 3, and 7, in 2001 Transocean prepared an "Assurance Analysis" of the *Deepwater Horizon* BOP. *See* TRN-HCEC-00011272 through TRN-HCEC-00011417, TRN-HCEC-00016647 through TRN-HCEC-00017164. Transocean is not aware of other "Assurance Analysis" conducted on this BOP or related responsive, non-privileged documents, although the BOP rams have been tested regularly since the conversion in 2005; *see* TRN-USCG_MMS-00025037 through TRN-USCG_MMS-00026273, TRN-USCG_MMS-00004963 through TRN-USCG_MMS-00011648.

10. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents that describe the design of the Deepwater Horizon BOP, including all of its related control systems.**

Please see the above response to Question No. 1, including the responsive, non-privileged documents produced.

11. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to the maintenance history of the Deepwater Horizon BOP and related control systems.**

Please see the above response to Question No. 1, and the responsive, non-privileged documents produced.

12. **Describe whether, prior to the blowout on the Deepwater Horizon, Transocean had any knowledge or information that indicated that the blind shear ram on the Deepwater Horizon BOP could not or may not have been able to shear material present in the BOP and effectively seal the well.**

a. Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to any such knowledge or information.

The BOP is designed to close around, or cut through, drill pipe in use on the well to restrict the flow of hydrocarbons; it is not designed to cut through cement, casing, tool joints, or other debris that could potentially be present when a BOP is activated. Provided the BOP was activated to function within its design specifications, there currently is no reason to believe it would not have done so. Accordingly, there are no documents responsive to this Request. The BOP has not been retrieved from the sea floor, and it is not known whether it was damaged by the surge that emanated from the well beneath the BOP or whether the surge may have blown debris into the BOP (*e.g.*, pieces of cement or casing), thereby preventing it from fully squeezing, crushing or shearing the drill pipe or closing. Transocean has asked to examine the BOP when it is retrieved.

13. Describe whether, prior to the blowout on the Deepwater Horizon, Transocean had any knowledge or information concerning the ability to add additional blind shear rams to the BOP or to space blind shear rams in the BOP relative to each other in such a way as to help ensure that at least one of blind shear rams will be able to shear on demand.

a. Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to any such knowledge or information.

Transocean does not agree with the implication that the *Deepwater Horizon* BOP could not shear on demand. Accordingly, there are no documents responsive to this request. The largest BOP stacks in use contain seven (7) cavities that are outfitted with different rams based on legal requirements and Operator specifications. For the *Deepwater Horizon* BOP, the applicable regulation, 30 C.F.R. § 250.441, requires four (4) cavities—at least one (1) annular; two (2) pipe rams; and one (1) blind shear ram. The *Deepwater Horizon* BOP contained seven (7) cavities, three beyond what is required. The BOP stack included two annulars, two pipe rams, a blind shear ram and a casing shear ram. The blind shear ram was spaced approximately 43.7 inches above the casing shear ram, and both were designed to shear drill pipe or casing up to the design parameters of the specific BOP ram.

14. Describe whether, prior to the blowout on the Deepwater Horizon, Transocean had any knowledge or information concerning:

a. Any incidents that occurred that could have damaged the Deepwater Horizon BOP or resulted in the BOP not performing as expected;

b. Pieces of rubber, potentially from the BOP's annular, coming up to the rig with the drilling fluid, following any such movement or pressure;

c. Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to any incident or the reporting of any incident described in questions 14a or 14b.

No, before the incident, Transocean employees did not know of any events that could have damaged the BOP or resulted in the BOP not performing as designed. To the contrary, daily drilling reports of the Macondo well show four instances where the BOP was called upon to function and successfully and effectively closed in the wellbore.

Transocean employees were aware of a leak on the open side of the solenoid valves of the lower test ram, but this equipment has no well control function, and the leak existed only when the valve was in the "open" function, not when the valve was in the close or "block" function as would be done in a well control situation.

Two other leaks were known to Transocean before the incident, but neither would have comprised the pressure integrity of the BOP. On February 19, 2010, a leak in the upper annular close circuit was identified in the connecting hose that leads into the surge bottle. The surge bottle is essentially a buffer chamber used to allow the close pressure on the annular to expand slightly when a tool joint passes through the closed element, *i.e.* through the annular when stripping pipe into the well. Without this ability to reduce closing pressure, high pressure would be exerted on the annular during stripping that could reduce the life of the annular or lead to a premature failure. Second, a leak on the surge bottle connection to the lower annular, was discovered in late February or early March 2010. The leaks identified were in the hose / hose connection to the surge bottle, and the leak rate was very low. Because the supply of fluid is very large, a small leak would not impede the BOP from functioning properly. Accordingly, the small leak would not change how the close circuit and surge bottle function; the surge bottle is still connected to the closed chamber and would still expand and contract as required.

To Transocean's knowledge, BP knew of these leaks. On August 23, 2010, Paul Johnson testified before the U.S. Coast Guard/BOEM that he notified BP of the leak on the test ram when in the open function. *See* Tr. at 87. Additionally, BP reported the leak in the upper annular close circuit it in its North America—North American Exploration—BP Daily Operation Report on February 23, 2010. This report has been produced by BP as BP-HZN-CEC011984 through BP-HZN-CEC011990.

We understand that in a May 16, 2010, *60 Minutes* segment, Transocean Chief Electronics Technician Michael Williams stated that a man monitoring drilling fluid saw a piece of rubber in the drilling fluid returns / mud shakers approximately four weeks before the incident. While Transocean has not located any record of this reported observation, having some rubber returns to the shakers in the drilling mud is not uncommon. The annular is roughly three feet in diameter, about eighteen inches tall, and weighs approximately 2,000 pounds. It is designed to close around the drill pipe, and drill pipe regularly moved through the closed annular, which can displace pieces of the annular rubber. The rubber used in annulars is known to be a consumable item, and rubber loss is not considered problematic if the annular holds its rated pressure. New rubber elements were installed prior to running the BOP on this well.

There are several sources of rubber down hole; annular rubber would be the most common source. The element is made up of a skeleton of metal segments with rubber molded around the segments. The segments give the element strength, and shape. Every time you operate the annular, you are squeezing / compressing the rubber element and the metal segments. In this process of compressing the element, the segments move into the bore causing the rubber to be compressed and small pieces of rubber can flake off when this occurs. Given the significant size of the annular, as noted above, the manufacturer advises that wear and tear as a result of periodic and normal use is expected, and a handful of small chunks of rubber would be immaterial to its functionality. Cameron brochures, available on Cameron's website, highlight these facts. For example, one such brochure explains that "[t]he elastomeric packing elements used in CAMERON Type D/DL annular BOPs are considered to be consumable items and will eventually wear-out as a result of repeated closures and pressure tests. Every closure and pressure test while in-service will use up some of the packing element life. The packing element subassembly should not be rejected for continued service based on cosmetic appearance. Failure of a pressure test or drift test are the only justifiable reasons for rejection." *See* In-Service Condition of CAMERON D/DL Annular BOP Packing Element Subassemblies, *available at* http://www.c-a-m.com/cam/search/showdocw.cfm?DOCUMENT_ID=8360. On April 6, 2010, the rig experienced a well control situation and the crew closed the lower annular. Subsequently, approximately 1,300 feet of drill pipe was moved upward through the closed lower stripping annular. This is a normal operation for which the annular is designed, and any rubber observed could have come from this operation. The aforementioned BOP tests on April 10, 2010 and April 17, 2010, confirmed that the annular was operating properly after any alleged rubber return incident. *See* TRN-USCG_MMS-00011510 through TRN-USCG_MMS-00011648, TRN-USCG_MMS-00026048 through TRN-USCG_MMS-00026273 (responsive, non-privileged documents recording *Deepwater Horizon* stripping activity in 2010, which is when rubber would have been returned, if at all).

15. **Please describe in detail: the process that was used to attempt to cap the Macondo well; the typical process for capping a well of this type; the decision-making process related to efforts to cap the Macondo well, including decisions related to the drilling mud being replaced with sea water; the individuals making decisions related to capping the well; a description of any tests undertaken during the capping process, the result of those tests, and the subsequent decision(s) made following any tests; if the process used for capping the Macondo well differed from typical Transocean practice or standard industry practice, and if so the reasons for any differences.**

    a. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to Transocean's decision-making process and actions to cap the Macondo well.**

With respect to the post-incident capping of the well, Transocean refers the Committee to BP, because BP and the U.S. Coast Guard directed post-incident remediation activities. Transocean supported BP's activities, including attempted caps and the capping stack procedure, and Transocean will produce the documents it possesses related to those activities if requested.

Transocean's investigation into the accident has not yet concluded, in part because Transocean needs documents and data from BP. With respect to pre-incident planned activities, BP's final activities and procedure to abandon the well were to cement the final string of casing, test that to BP's satisfaction, and then allow Transocean to remove the BOP and rig. The exact order and process for each step is set by BP and approved by the MMS. With respect to cementing of the final casing string, it is normal practice, and in fact required by regulation 30 C.F.R. § 250.442(e), to remove the drilling mud from the riser before disconnecting the riser from the well.

The well operator, here BP, creates the cement plan usually working with a cementing contractor such as Halliburton. The Operator is responsible for selecting the type and quantity of cement to be used, the number and placement of centralizers, and other aspects of a cement plan, including cement weight, density, pump rate, retarders, and other factors of a cement operation. Transocean was not involved in or aware of BP's engineering analysis or decisions regarding cementing. In the case of the *Deepwater Horizon*, nitrogen foam cement was used to cement the final string of production casing. Transocean provides responsive, non-privileged documents, including the June 8, 2010 Interim Internal Investigative Report, in which Transocean raised a question about the use of nitrogen foam cement at this depth, but noted that Transocean lacks expertise in cementing and is not a cementing contractor. The Transocean interim report is available at http://energycommerce.house.gov/documents/20100614/Transocean.DWH.Internal.Investigation.Update.Interim.Report.June.8.2010.pdf, and also is being produced to you on disc.

The Operator submits its temporary plug and abandonment plan to the MMS for approval. Based on information obtained during the U.S. Coast Guard proceedings the week of August 23, 2010, it appears that BP secured MMS approval to conduct a negative test first and then displace mud below the mud line. It appears, however, from documents and testimony that, instead, BP displaced the mud to a depth of 8,367 feet to do a negative pressure test, rather than testing and then displacing the mud. Based on information from BP and the U.S. Coast Guard, Transocean believes BP employees, including Brett Cocales, John Guide, Mark Hafle, Brian Morel, and Greg Walz participated in the decision to modify the order of work.

16. **Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to Transocean's assessment of the causes of the blowout on the Deepwater Horizon.**

Transocean is investigating and will report the non-privileged findings of the investigation when complete. For an interim report, please see Transocean's June 8, 2010 Interim Internal Investigative Report, prepared for the House Committee on Energy & Commerce, Subcommittee on Oversight and Investigations, available at http://energycommerce.house.gov/documents/20100614/Transocean.DWH.Internal.Investigation.Update.Interim.Report.June.8.2010.pdf.

17. **Provide a timeline of the events and actions that occurred relating to the Deepwater Horizon in the 48-hour period preceding the time of the blowout on the evening of April 20, 2010, and the-72 hour period following the blowout. In this timeline, include each significant decision and action taken with respect to shutting down the**

well and responding to the blowout, including the identification of individuals making such decisions and authorizing such actions. Provide documents that summarize or reflect these events and actions, including communications among Transocean officials and communications with BP, Halliburton, federal agencies, and other parties.

Transocean has not created a responsive, non-privileged timeline or other document responsive to this request in part because BP has not provided essential information, as noted in our August 18, 2010 letter to BP, copies of which were provided to you and to Ranking Member Inhofe. We are aware of a timeline created by Schlumberger, available at http://energycommerce.house.gov/documents/20100614/Schlumberger.MC.252.Timeline.pdf, as well as a timeline created by CNN, available at http://www.cnn.com/2010/US/05/26/oil.spill.investigation.timeline/index.html. Please also see the Transocean June 8, 2010 Interim Internal Investigative Report, prepared for the House Committee on Energy & Commerce, Subcommittee on Oversight and Investigations, which identifies many of the key events and actions leading up to the incident.

Questions from Senator Max Baucus:

1. **Can you explain the degree to which there is redundancy in your system designed to prevent a catastrophic failure? For example, was consideration ever given to multiple blow-out preventers on this rig given the value of the potentially affected resources?**

There are multiple BOP configurations that allow a drilling rig to operate safely, each with different advantages. The BOP stack on the *Deepwater Horizon* was fitted with seven preventors (five ram preventors and two annulars), which afforded multiple redundancies and nearly doubled the regulatory requirement of four preventers. As long as the BOP configuration meets or exceeds regulatory requirements, Transocean defers to the Operator, here BP, with respect to redundancy considerations and the configuration of BOPs deployed on their wells.

Significantly, the primary means of controlling reservoir pressure during drilling operations are drilling mud and cement and casing—not a BOP. The BOP only serves as a secondary means of controlling reservoir pressure if the drilling mud proves inadequate during drilling operations. The BOP seals the wellbore in the event of a blowout during drilling operations, and Transocean is not aware of any alternative mechanism to a BOP for sealing the wellbore in the event of a blowout during this phase.

In contrast, the sole means of controlling reservoir pressure after the drilling phase is complete and the well has been plugged or abandoned are the casing and cement. The BOP is removed from every well when the abandonment phase is complete, and, accordingly, can no longer serve as a redundant control mechanism. Therefore, the cementing and casing selected and outlined in the well design must be able to secure the well and seal it to prevent a catastrophic failure.

Moreover, the BOP may have been subjected to conditions that exceeded its design constraints such that a second BOP would not have had any positive effect; this cannot be determined without knowing more about the forces to which the BOP was subjected or what was inside the

BOP at the time of the incident. The BOP is a robust piece of equipment and is effective during drilling operations. At the same time, it should not be and has never been viewed by the industry as a "fail safe" in every circumstance. Transocean must understand what happened with the well, the cement and casing barriers, and the BOP in order to determine whether any changes might improve effectiveness and safety in the unusual circumstances of an incident like that of April 20, 2010.

2. **The Washington Post reported on May 23, 2010 that in 2004 Transocean converted a variable bore ram with a test ram on the Deepwater Horizon rig at BP's expense. The documents associated with that decision reportedly include a statement that this conversion: "will reduce the built-in redundancy" of the system, "thereby potentially increasing Contractor's risk profile." Is this report accurate? If so, on what information did Transocean base your statement that such a change would potentially increase your risk profile? Was this increase quantified in any manner? What was the cost of this change and has Transocean performed the same modification on other deepwater rigs? Was the Minerals Management Service informed of this action?**

The modification request by BP converted one of the BOP's rams, the lower-most ram, from a conventional well bore sealing ram to a BOP test ram, which allowed for more efficient testing of the BOP. Prior to the modification, the BOP was equipped with two annulars and five rams. The requested documents are produced at TRN-HCEC-00064131 through TRN-HCEC-00064132. The BOP exceeded legal requirements both before and after this modification. The statement is based on the intuitive point that removing any redundant component from a system increases the chance that it will fail, however incrementally. The modification was carried out at BP's request and expense; it appears BP agreed to an estimated cost of $135,000.

As noted previously, to date, fact-finding and investigatory efforts have been focused on the *Deepwater Horizon*. We have not undertaken a review of modifications to BOPs on other rigs in U.S. waters, if any.

BP would have communicated and coordinated the modification to secure MMS approval. Transocean cannot confirm whether this occurred. The BOP rams were tested successfully and regularly since the 2004 conversion. Additional requested documents produced at Bates labels TRN-HCEC-00077341 through TRN-HCEC-00077609, TRN-HCEC-00077673 through TRN-HCEC-00077677, and TRN-HCEC-00077681 through TRN-HCEC-00077687.

Questions from Senator Thomas R. Carper:

1. **How did MMS, Halliburton, Transocean, and BP coordinate the testing of equipment at the surface and at the ocean floor? Specifically regarding the cement casings and BOP, how often were tests done, how were results shared and how were they performed?**

With respect to the BOP, function and pressure tests are conducted per MMS requirements on seven-day and fourteen-day schedules, respectively, such that the BOP undergoes testing at least once every seven days. The 2010 IADC daily drilling reports from the *Deepwater Horizon*,

show that the BOP was tested more frequently than this minimum requirement. *See* TRN-HCEC-00000001 through TRN-HCEC-00000094. As described in our August 18, 2010 letter to BP, copies of which were provided to you and Ranking Member Inhofe, Transocean also has requested from BP, but has yet to receive, BP records of BOP pressure tests.

BOP and positive pressure tests of casing are performed in the same general manner. The Halliburton cement unit is connected to the appropriate rig manifold to allow up to 15,000 psi testing on designated components one at a time. For casing and cement positive tests, generally the blind shear ram is closed (alternatively, drill pipe can be run into the well and the pipe ram closed around the drill pipe). Halliburton then pressures the cement unit to the required testing level based on the well design—as specified by BP—to meet MMS requirements. The BOP is tested by closing the test ram or inserting a test plug into the well head to isolate the well bore from the BOP testing to prevent damages to the well. Once isolated, each component of the BOP is tested to a low and high pressure—as set and designated by BP—to meet MMS requirements for the interval being drilled.

Test results are generally recorded on an analog test chart such that the test pressure becomes steady for a designed minimum duration. For the *Deepwater Horizon*, BP utilized an MMS-approved test procedure to apply a digital signature testing method to interpret the test results. The resulting documents are available to the MMS from BP upon request or inspection. The results are signed by the Transocean subsea engineer and OIM and BP's well site leader, or his designee.

Questions from Senator Benjamin L. Cardin:

1. **Please provide e-mails or any other correspondence between the Transocean managers on the Deepwater Horizon and Transocean executives on shore, BP executives aboard the rig or on shore or project managers at MMS in the 48 hours prior to the explosion on April 20, 2010.**

The *Deepwater Horizon* maintained an onboard email system that was the sole means of email transmission for messages sent by crewmembers aboard the rig. Thus, all of the intra-rig emails sent and received by the *Deepwater Horizon* crew in the forty-eight hours preceding the incident were lost when the rig sank unless they included a shore-based Transocean recipient. When and if, non-privileged, responsive email communications that include a Transocean shore-based recipient are located, Transocean will supplement its response. BP is in possession of any emails sent between its shore-based employees and the crew of the *Deepwater Horizon*. Accordingly, Transocean refers the Committee to emails that BP produced to the Joint Coast Guard/BOEM Board of Investigation.

2. **Why was the Deepwater Horizon rig flying under the flag of the Marshall Islands? Please list all of your rigs and drill ships and the flags they fly under and indicate whether there are different safety inspection and maintenance requirements or tax liabilities depending on the flag.**

The flagging of Transocean mobile offshore drilling units, or MODUs, in foreign jurisdictions is done for logistical purposes, not for operational, safety, or tax reasons. Transocean operations

of its MODUs follow the laws and regulations of the United States and each of the approximately twenty-nine countries in which Transocean operates. The MODUs also comply with international standards, regulations and codes applicable pursuant to the International Maritime Organization (IMO). The *Deepwater Horizon* MODU, which was flagged in the Marshall Islands, complied with U.S. and international regulations. Foreign flagged MODUs operating in U.S. waters meet or exceed all functional standards for U.S. flagged MODUs. There is no material difference in terms of safety inspections or maintenance requirements. When Transocean rigs are operating in U.S. waters, each rig is inspected by the U.S. Coast Guard, regardless of the flag country for the rig.

The *Deepwater Horizon* was flagged in the Marshall Islands for several reasons. The global nature of the industry requires that drilling contractors such as Transocean maintain maximum flexibility to respond to customer requests and move MODUs to various locations around the world, as they are needed. Foreign flagging supports this operational flexibility for a number of reasons.

First, a MODU flagged in the United States must be repaired in U.S. shipyards or significant U.S. customs duties are assessed on the value of the work performed even though it is outside of the United States. It is often not feasible or possible to transport rigs to the United States for repairs, and that would be an unreasonable logistical restriction for rigs operating around the world. Significantly, when Transocean MODUs are operated in U.S. waters, they are repaired in U.S. shipyards, regardless of the flag country. The *Deepwater Horizon,* for example, was and would be repaired in U.S. shipyards throughout its work in the Gulf of Mexico and on the OCS; it would not be repaired in the U.S. while operating in the Far East or other foreign venues.

Second, a MODU flagged in the United States must have a U.S. citizen as the Master. When Transocean MODUs are operating in U.S. waters, all of the Masters are citizens of the United States, regardless of the vessel flag. All of the Transocean members of the *Deepwater Horizon* rig crew on April 20, 2010 were U.S. citizens. When the MODU is operated in other locations, however, such as Africa or the Far East, complying with this requirement is difficult, if not impossible, given local employment requirements, work/visa requirements of the U.S. and foreign countries, and Transocean's international work force.

Third, a U.S.-flagged MODU must be inspected annually by a member of the U.S. Coast Guard. When Transocean rigs are operating in U.S. waters, each rig is inspected by the U.S. Coast Guard, regardless of the flag country for the rig. However, when a rig is operating in non-U.S. venues, complying with this requirement is difficult because of travel requirements, rights to work, and other logistical issues. Members of the U.S. Coast Guard are often not available or permitted to travel to foreign destinations to conduct official annual inspections of MODUs, and requests to bring members of the U.S. Coast Guard into such countries for official business presents additional logistical barriers.

With regard to taxes, we are not aware of any U.S. federal income tax benefits or drawbacks resulting from the operation of a drilling rig off the coast of the United States that is flying under the flag of a foreign country. Transocean's U.S. federal corporate income tax returns that include the operations of our rigs off the coast of the U.S. do not include benefits or drawbacks resulting from the fact that the rigs operate under the flag of a foreign country.

Because Transocean owns more than 130 rigs (information about which, including flagging, is available on our website at http://www.deepwater.com/fw/main/List-by-Name-16.html), Transocean responds below with respect to drilling rigs owned by various Transocean entities that are operating in the Gulf of Mexico and are flying under the flag of a foreign country:

- *Deepwater Nautilus,* flying under the flag of Panama
- *Discoverer Clear Leader,* flying under the flag of the Marshall Islands
- *Discoverer Enterprise,* flying under the flag of the Marshall Islands
- *Discoverer Deep Seas,* flying under the flag of the Marshall Islands
- *Discoverer Spirit,* flying under the flag of the Marshall Islands
- *Transocean Amirante,* flying under the flag of Panama
- *GSF Development Driller I,* flying under the flag of Vanuatu
- *GSF Development Driller II,* flying under the flag of Vanuatu
- *GSF* G.R. *Luigs,* flying under the flag of Panama
- *Discoverer Inspiration,* flying under the flag of the Marshall Islands
- *Discoverer Americas,* flying under the flag of the Marshall Islands
- *GSF Development Driller III,* flying under the flag of Vanuatu
- *Deepwater Pathfinder,* flying under the flag of Panama

3. **Who made the decision—and why—to replace drilling fluid with seawater despite the fact that two negative pressure tests had failed? Please provide copies of emails or any other written correspondence and transcripts of any phone calls between Transocean and BP, Schlumberger, Halliburton, or MMS officials on and off the rig regarding the negative pressure tests and the decision to replace the drilling fluid with seawater.**

Transocean does not agree that "two negative pressure tests had failed." With respect to Operations, BP established and provided its procedure to cement the well, conduct testing and displace the drilling fluid to sea water. It is the Operator's role to review the results of tests and declare if each test passes or fails. Accordingly, BP's Well Site Leader and BP on shore engineers decided that there was a good negative test. Some of these discussions and documents are contained in the proceedings of the U.S. Coast Guard, including testimony of BP employees.

Displacing drilling mud in the riser (above the mud line) with sea water is a normal and required step in the abandonment process. *See* 30 C.F.R. § 250.442(e). Standard industry practice, however, is to not displace drilling mud with sea water until the Operator is confident that tests have proven that the cement and casing are capable of controlling pressure from the reservoir.

For purposes of this response, we have assumed that this inquiry is limited to emails, written correspondence, and phone calls that took place before and up to the time of the incident. Transocean is not aware of any responsive, non-privileged emails, other written correspondence or transcripts of phone calls prior to the incident regarding the negative pressure tests or the decision to replace the drilling mud with seawater.

Questions from Senator Jeff Merkley:

1. How many times have BOPs successfully cut off oil flow after a blowout when operating offshore?

Transoccan possesses "well control" data collected from its rigs since 2005. A "well control" event and a "blowout" are very different. In a well control situation, the flow of hydrocarbons is successfully restricted such that no "blowout" occurs. Not every well control event is actually a kick with an influx of hydrocarbons. Data collected from 2005 through 2009 includes reported events in which the BOP was closed in a reaction to indications of an underbalance in the well; thus it includes ballooning events and events for which subsequent investigations indicated that no underbalance actually existed. In a "blowout" by contrast, hydrocarbons bypass control devices and reach the surface/rig. While well control events are not uncommon, blowouts are extraordinarily rare.

Transocean has attempted to compile numbers on well control events as defined above on all wells on which drilling services were performed by Transocean and Transocean legacy rigs between 2005 and 2009. While operating on 4,966 wells, Transocean rigs experienced 556 well control events. For these 4,966 wells and 556 well control events, there were zero instances of blowouts; all wells were controlled and returned to a static condition (excluding instances where shallow gas was encountered prior to installation of the BOP). Because every response to a well control event involves the use of the BOP, each of these 556 well control events reflects successful use of the BOP.

- 329 of these events were kicks in which an influx was taken. The other events are usually the result of ballooning, discussed below, and precautionary closures in which the BOP was closed to determine whether a kick had occurred.

- 142 events were due to ballooning formations, also referred to as fracture charging, wellbore breathing, loss / gain events, in which the influx is generally drilling fluids, and was preceded by a period of drilling fluid losses. These events are included in the statistics because such events are generally treated as well control events until ballooning is confirmed.

- 306 well control events (including 185 kicks) occurred on exploration wells. The large majority of kicks were taken during drilling operations as new formations with changing pressures are exposed as part of the drilling process. 242 events (including 128 kicks) occurred on development wells.

Additionally, various publicly available sources provide industry-wide statistics and data similar to that requested by the Committee and, thus, may assist the Committee. Transocean refers to the following sources:

- SINTEF Offshore Blowout Database (*available at* http://www.sintef.no/Home/Technology-and-Society/Safety-Research/Projects/SINTEF-Offshore-Blowout-Database/). The database contains 51 different fields describing each blowout/well release, the fields are grouped in

six different groups: category and location; well description; present operation; blowout causes; blowout characteristics; and other.

- OCS-Related Incidents—Loss of Well Control Statistics and Summaries (*available at* http://www.boemre.gov/incidents/blowouts.htm). Detailed information regarding the incidents are provided in Excel spreadsheets for calendar years 2006 through 2009. Certain well control events are required to be reported to the MMS, pursuant to 30 C.F.R. § 250.188. Well control events that must be reported include: (1) an uncontrolled flow from the well, *i.e.* a blowout; (2) flow through a diverter, *i.e.* diverting fluids from the well overboard; or (3) an uncontrolled flow at the surface due to a surface equipment failure. Consequently, the majority of well control events are not required to be reported to the MMS.

2. How many times have BOPs successfully cut off oil flow after a blowout when operating in depths like those at which the Deepwater Horizon was drilling?

Please see the response to Question No. 1. In this context, in water depths of 4,500 feet to 7,500 feet, the well control data relates to a total of 320 deepwater wells. While operating on those 320 wells, Transocean rigs experienced 85 well control events (as defined above). Before the April 20th incident, there were no blowouts; all wells were controlled and returned to a static condition (exclusive of any instances where shallow gas was encountered prior to installation of the BOP). Accordingly, the BOP was successfully utilized to control the well in each of these events.

- 51 of these events were kicks where an influx was taken.
- 24 events were due to ballooning formations, as described previously.
- 67 well control events (including 43 kicks) occurred on exploration wells. 18 events (including 8 kicks) occurred on development wells. The large majority of kicks were taken during drilling operations.

3. How many times has a shear ram on a BOP successfully sheared and sealed a pipe with fluids (whether oil or drilling mud) flowing through it in response to a potential blowout while operating offshore?

Please see the above responses. Although Transocean does not believe it has sheared tubulars during a well control event, Transocean has performed successful emergency disconnects in which the shear rams successfully sheared and sealed a wellbore.

4. How many times has a shear ram on a BOP successfully sheared and sealed a pipe with fluids (whether oil or drilling mud) flowing through it in response to a potential blowout while operating at depths like those at which the Deepwater Horizon was drilling?

Please see the above responses. Although Transocean does not believe it has sheared tubulars during a well control event, Transocean has performed emergency disconnects in which the shear rams successfully sheared and sealed a wellbore.

5. Are BOPs and their shear rams tested using actual real-world conditions? In other words, do you conduct a simulation where a riser and drill pipe have fluid flowing throw them and are successfully sheared and sealed by a shear ram?

BOPs and shear rams are qualified pursuant to API Specification 16A, which addresses the size and grade of pipe to be sheared for qualification and requires the rams to shear 5" pipe, grade G-105 for BOPs larger than 13 5/8". The specification states the test be performed with tension on the pipe and zero well bore pressure. After shearing, the well bore will be pressured to low pressure, then high pressure to verify that the ram sealed the well bore after shearing. It is recommended that three samples of the pipe be sheared and tested.

Transocean understands that shear tests are also performed by the OEM for each make and model of ram to verify the product's capabilities. This testing is believed to be performed under static conditions, at ambient pressure, in a shop test facility. Cameron, as the manufacturer of the BOP, may be a source of additional information regarding its internal testing processes, procedures, and environment. Manufacturers may execute additional shear tests on different sizes and grades of pipe and casing at the request of drilling contractors and operators. The results of the shear tests are generally proprietary to the testing entity.

6. How many times has a containment dome been successfully employed underwater?

The Operator owns the well and hydrocarbons, and pursuant to industry practice, regulations and contracts, the Operator indemnifies contractors, including Transocean as a drilling contractor, from hydrocarbon releases from a well and for necessary remediation efforts. As a result, Transocean has not used a containment dome and would defer to information from operators on past remediation activities.

7. How many times has a containment dome been successfully employed at depths like those at which the Deepwater Horizon was drilling?

Please see the above responses.

8. How many times has a top kill been successfully employed underwater?

When a kick is taken into the well bore and stopped by the BOP, there are several well-known industry standard methods available to kill the well, each involving the use of the BOP. The term "top kill" largely was developed during this intervention; however, the process of pushing hydrocarbons back into a well, *i.e.* bull-heading, is not uncommon and may be considered a common method of controlling and killing a well.

Although the term "top kill" may also be used to refer to the process of killing a producing well, Transocean generally is not involved in the production phase of a well and does not possess data relating to this usage of the methodology.

We interpret the question to refer to the use of this methodology under circumstances like that on the Macondo well. Transocean does not possess statistical data under such circumstances. As noted previously, BP, as the operator, is responsible for post-incident control of hydrocarbons flowing from the well and plans prepared for such instances.

9. How many times has a top kill been successfully employed at depths like those at which the Deepwater Horizon was drilling?

Please see Transocean's response to Question No. 8.

10. Do you believe that prior to the Deepwater Horizon blowout there was "proven technology" for handling a blowout during deepwater drilling?

Yes, both prior and subsequent to the Macondo well blowout proven technologies existed and continue to be employed to handle blowouts during deepwater drilling. There are numerous variables involved, and each well is unique. The ability to manage a blowout depends on each rig's particular setup, the ramifications of the type of blowout, and resulting damage to the rig, if any. For example, a gas kick is significantly different than a water or hydrocarbon fluids kick. Nonetheless, the aforementioned Transocean and available industry statistics demonstrate that almost all well control situations do not result in a blowout. This would not be the case if the methodologies and technologies utilized to respond to well control situations and blowouts were materially ineffective or inconsistent.

11. Do you believe that a blowout during deepwater drilling would be "unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of BP's Regional Oil Spill Response Plan which address available equipment and personnel, techniques for containment and recovery and removal of the oil spill"?

As noted above, Transocean believes in the reliability and effectiveness of the equipment and technology utilized to respond to a blowout. The Operator owns the well and hydrocarbons, and pursuant to industry practice, regulations and contracts, the Operator indemnifies contractors from hydrocarbon releases from a well and for necessary remediation efforts. As a result, the Operator, here BP, is responsible for ensuring that its oil spill response plan is sufficiently comprehensive and robust to be rapidly and successfully implemented for successful containment, recovery, and removal of any hydrocarbons discharged from the well.

12. If it is true that "all of the techniques being attempted or evaluated to contain the flow of oil on the seabed involve significant uncertainties because they have not been tested in these conditions before," do you agree that there should be a time-out on deepwater drilling until adequate technology and methods for handling blowouts or other risks can be developed?

Respectfully, Transocean does not concur that the techniques for controlling the flow of hydrocarbons have not been "tested," assuming that this inquiry refers to the BOP. As noted above, statistics relating to blowout prevention in a variety of real-world environmental conditions demonstrate that the overwhelming majority of well control events do not result in a blowout. In the rare instance of a blowout, the discharge of hydrocarbons usually is quickly remedied. Transocean, however, supports continued advancements in the technologies, tools, and methodologies employed to handle blowouts and improve spill responses. Transocean, likewise, does not agree that a moratorium on all deepwater drilling is an effective means to accomplish these objectives or to prevent future occurrences.

Transocean reserves judgment, at this time, on the appropriate measures that should be employed to achieve these objectives. Investigations are ongoing into the cause(s) of the incident and may support changes in various aspects of the drilling process. Focus on potential improvements in well design and construction may be more appropriate, as such could prevent blowouts in the first instance.

13. Do you believe your company can be relied upon to drill at deepwater depths without risk of a similar incident?

Yes, Transocean believes it can be relied upon to drill safely at deepwater depths. Transocean is proud to be an industry leader in offshore drilling technology and practices, possessing more than fifty years of experience with high-specification rigs. Transocean's fleet is advanced and versatile, consistently and safely operating in challenging conditions across the globe. Transocean holds over a dozen drilling records, achieved with minimal or no incidents. Last year, Transocean recorded its lowest ever Total Recordable Incident Rate (TRIR), a measure of the frequency of safety-related incidents. That same year, the MMS awarded one of its top prizes for safety to Transocean. In the words of the MMS, the MMS SAFE award "highlights to the public that companies can conduct offshore oil and gas activities safely and in a pollution-free manner, even though such activities are complex and carry a significant element of risk." In presenting this award, the MMS cited Transocean's "outstanding drilling operations" and "perfect performance record."

Transocean's fleet includes over twenty ultra-deepwater drilling ships and semisubmersibles, capable of working in water depths greater than 7,500 feet, and over a dozen deepwater drilling rigs, for water depths between 4,500 feet and 7,499 feet. As of January 2010, Transocean held nineteen of the past twenty-three world records for drilling in the deepest waters. The ultra-deepwater drillship *Discoverer Deep Seas* successfully set the current world water-depth drilling record of 10,011 feet in the Gulf of Mexico. Transocean's fleet also includes several harsh environment rigs, designed for the coldest climates and largest wave conditions in the world, as seen in the North Sea and Norway. With such a robust fleet, Transocean is able to tailor the vessel to the specific requirements of a given well, geographic location, and/or environmental climate. Transocean has developed training programs and safety tools and processes to complement this versatile fleet. Our commitment to safety is the underpinning of our ability to perform in these challenging operating conditions.

14. Please provide an itemized detailed list, in chronological order, of all indications of problems with the well, including problems related to well control, the well casing, or the BOP, in the last year.

At this time, the company is compiling and analyzing this information. To provide insight into the well progress, IADC daily drilling reports and BP daily reports are provided to the Committee, bearing Bates Numbers TRN-HCEC-00000001 through TRN-HCEC-00000094, TRN-HCEC-00062426 through TRN-HCEC-00062797, TRN-USCG_MMS-00011510 through TRN-USCG_MMS-00011648, and TRN-USCG_MMS-00026048 through TRN-USCG_MMS-00026273.

15. Did BP allow the use of a well casing that was inconsistent with the company's design standards and policies? If so, why?

As the drilling contractor, Transocean relies on the operator—in this instance, BP—to design the well properly and evaluate and select casing options in accordance with the operator's and industry design standards and policies. BP may also engage the services of other contractors, such as Weatherford, to provide expertise in this area. Transocean does not review or comment on the Operator's well design or casing and is not familiar with BP's design standards and policies.

16. What was Transocean's opinion on the well casing used?

As noted in response to Question No. 15, Transocean relies on the operator, here BP, to design the well properly and evaluate and select appropriate casing options. Transocean does not review or comment on the well design or casing options. Thus, at the time of the incident, Transocean had no opinion regarding the well casing. The well design and casing are being examined as part of the ongoing investigations; however, without a complete set of data and because fact finding and analysis continue, it would be premature to opine at this time.

17. Why were tests of the BOP conducted at 6,500 pounds per square inch rather than 10,000?

Respectfully, the BOP was tested at 10,000 psi on the day of the incident. The April 20, 2010 daily drilling report, which bears Bates numbers TRN-HCEC-00000091 through TRN-HCEC-00000094, reflects that the casing and seal assembly were tested between 1:00 am and 3:00 am that morning at 4,000 psi for thirty seconds, and 10,000 psi for ten seconds. Pressure was then bled off to 6,500 psi and held for five minutes. Nothing abnormal was found during this test. Notably, the regulations require a BOP to be tested to the maximum allowable surface pressure for the fourteen-day interval between tests.

18. Please provide a list of who was consulted about the use of the BOP on the day of the disaster, including use of the emergency disconnect and shearing button, as well as the times at which they were contacted and the nature of those conversations, including any decisions made.

As the operator, BP was managing operations aboard the *Deepwater Horizon*. Media reports have indicated that a rig to shore communication among BP personnel took place on April 20, 2010, regarding well abnormalities, but Transocean was not involved in this communication.

We do have information that members of the Transocean crew activated the BOP prior to evacuating the rig; however the individuals who were closest to the events were on the drill floor and did not survive the incident. As fact-finding continues, new facts and details may emerge, and the currently known sequence of events and discussions that occurred on the day of the incident may evolve.

As Randy Ezell testified, between 9:40 pm and 9:50 pm he received a call from Steve Curtis, who was on the drill floor, indicating that there was a well control situation. Ezell asked if they had shut in the well and Curtis indicated that Jason Anderson was doing so as they spoke.

Chris Pleasant testified at the U.S. Coast Guard hearing on May 28, 2010, that he saw mud coming from the well. He ran from his office towards the moonpool, then to the main deck, trying to get to the rig floor when he saw fire. He instantly ran to the bridge and announced that he was initiating EDS. Pleasant testified that he went to the EDS panel and hit the EDS button. When Captain Kuchta told Pleasant to EDS, Pleasant responded that he already had. David Sims, BP's Operations Manager, testified at the U.S. Coast Guard hearing on August 26, 2010, that Captain Kuchta instructed Pleasant to EDS at approximately 21:56 (9:56 p.m.).

19. Was the BOP acquired from Cameron, its manufacturer, in new condition? What evidence did either of your companies have that the BOP was in sound working condition and could be relied upon for use under the conditions at the Deepwater Horizon drilling site?

Yes, the BOP was purchased, new, from Cameron, during the 1999–2001 construction period for the *Deepwater Horizon*. In addition to the representations of the manufacturer, Cameron, regarding the capabilities of the BOP, Transocean performs extensive maintenance on and thoroughly tests the BOP, as outlined in responses above.

Maintenance and testing records related to the *Deepwater Horizon* BOP are provided to the Committee. *See* TRN-HCEC-00040041 through TRN-HCEC-00040217; TRN-HCEC-00040249 through TRN-HCEC-00054353 (2001–2010 repair and preventative maintenance history for the *Deepwater Horizon* well control equipment); TRN-HCJ-00043709 through TRN-HCJ-00120896 (2001–2010 BOP maintenance schedule and records).

20. Please provide the following documents:

a. Any correspondence, reports, or other documents sent by BP to or received from Schlumberger since January 1, 2009, relevant to activities on the Deepwater Horizon

Transocean is not aware of any such correspondence, reports or other documents sent or received by BP.

b. Any internal communications, communications between companies, or other documents relating to the BOP, including maintenance and performance records and including documentation of how the BOP performed or was maintained relative to the manufacturer's specifications and standards.

As Transocean understands this request, Transocean produced responsive, non-privileged documents TRN-HCEC-00040041 through TRN-HCEC-00040217, TRN-HCEC-00040249 through TRN-HCEC-00054353 (2001–2010 repair and preventative maintenance history for the *Deepwater Horizon* well control equipment); TRN-HCJ-00043709 through TRN-HCJ-00120896 (2001–2010 BOP maintenance schedule and records).

c. Any internal or external documents related to the categorical exclusion received for its activities on the Deepwater Horizon.

For this question, Transocean understands "categorical exclusion" to refer to the exclusion from certain requirements imposed under the National Environmental Policy Act (NEPA) reportedly granted to BP by the MMS for the Macondo well exploration plan in 2009. Transocean is not aware of any internal or external documents related to the categorical exclusion other than documents likely in the possession of the rims and/or BP.

d. All relevant reports and logs for the Deepwater Horizon on April 19th and 20th of this year, including daily operations logs, mud logs, driller's logs, geologist's logs, and logs maintained by BP employees.

See TRN-USCG_MMS-00011641 through TRN-USCG_MMS-00011644, TRN-HCEC-00000090 through TRN-HCEC-00000094, TRN-HCEC-00032090 through TRN-HCEC-0032093 (IADC Daily Drilling Reports and Morning Reports from April 19th–20th and April 19th, respectively).

e. Any other documents provided to any committee of Congress or Member of Congress, or documents that you provide to any committee of Congress or Member of Congress in response to requests you have already received.

The discs provided to the Committee in conjunction with these responses contain all documents and responses to requests provided to Members of Congress and Congressional committees to date.

21. Why did employees of Schlumberger leave the Deepwater Horizon without conducting all relevant tests on the cement work, including the "cement bond log" tests?

The decision to perform a cement bond log rests with the operator and cement contractor—in the case of the *Deepwater Horizon*, BP and Halliburton, respectively. As the drilling contractor, Transocean does not have a role in that decision or activity. To Transocean's knowledge, no cement bond log was performed on the Macondo well.

As far as Transocean has been able to determine, a cement bond log was called for in the BP well plan. A cement bond log uses variations in amplitude of an acoustic signal traveling down the casing wall between a transmitter and receiver to determine the quality of cement bond on the exterior casing wall. Schlumberger technical personnel were on board the *Deepwater Horizon* prior to the April 20th incident preparing for and waiting to perform a cement bond log, and Schlumberger had moved physical equipment to the *Deepwater Horizon* to perform the test. Based on records available to Transocean, those Schlumberger personnel left the *Deepwater Horizon* on the morning of April 20th, before performing a cement bond log.



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September 10, 2010

VIA HAND DELIVERY

The Honorable Barbara Boxer
Chairman, Committee on Environment and Public Works
United States Senate
410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable James M. Inhofe
Ranking Member, Committee on Environment and Public Works
United States Senate
456 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairman Boxer and Ranking Member Inhofe:

This will follow up on our responses to your August 18, 2010 requests. As we noted in response to Chairman Boxer's Question No. 5 regarding recommendations regarding the *Deepwater Horizon* BOP, BP conducted a rig and marine assurance audit of the *Deepwater Horizon* in September 2009. The BOP was inspected as part of this audit. While the BP audit was out of date at the time of the April 2010 incident --particularly in light of subsequent rig maintenance and the independent ModuSpec assessment completed in April 2010 -- Transocean provides the Committee with a copy of this audit and related documents, Bates numbered TRN-HCEC-00115553 through TRN-HCEC-00116006.

Transocean employs an ongoing maintenance program. In fact, the 2009 BP audit overlapped in part with a planned out service/maintenance period for the rig. Significantly, however, Transocean and BP agree that issues flagged in BP's 2009 audit were timely and properly addressed, and that the rig was "tight, staunch, strong and fit for the work that it was performing" in April 2010. At the recent hearing of the Joint U.S. Coast Guard/Bureau of Ocean Energy Management Board of Investigation in Houston, Mr. Neil Cramond, BP Gulf of Mexico Marine Authority and one of the BP officials who reviewed the September 2009 audit of the *Deepwater Horizon*, testified that Transocean had completed 63 out of 70 repairs identified by the audit within just five months – a 90% completion rate for which "BP commended Transocean" and its rig crew before the April 20, 2010 incident.

Mr. Cramond further testified that the remaining seven items yet to be completed at the time of the incident "were not deemed critical to the operation of the rig."

In addition, Mr. Cramond's testimony[1] confirmed that:

- There were no "major nonconformities" aboard the Deepwater Horizon as of April 2010 (page 127);
- The Deepwater Horizon was "tight, staunch, strong and fit for the work that it was performing" in April 2010 (page 128); and
- No BP employee, including either of the BP Company Men aboard the rig, reported that the vessel was not fit or that they had any concerns about the rig in April 2010 (pages 128-30).

As we discussed in our response to Chairman Boxer's Question No. 5, Transocean subsequently hired ModuSpec USA to conduct an independent condition assessment of the *Deepwater Horizon*, which was completed in April 2010. The ModuSpec assessment, copies of which we have already provided to the Committee, also confirmed that rig equipment, including the BOP, was in good condition and that all necessary and pertinent maintenance work had been performed on the *Deepwater Horizon*.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Rachel G. Clingman
Acting Co-General Counsel
Transocean Deepwater Drilling, Inc.

[1] A complete copy of the transcript of Mr. Cramond's testimony is enclosed for your reference with Bates numbers TRN-HCEC-00115735 through TRN-HCEC-00116006.

Senator BOXER. Thank you, Mr. Newman. I thought your questions were very much on point, those that you posed.

Next, we will hear from Tim Probert, President of Global Business Lines and Chief Health, Safety and Environmental Officer for Halliburton. Halliburton led the cementing efforts to temporarily cap the exploratory well involved in the ongoing oil spill.

STATEMENT OF TIM PROBERT, PRESIDENT, GLOBAL BUSINESS LINES, CHIEF HEALTH, SAFETY AND ENVIRONMENTAL OFFICER, HALLIBURTON

Mr. PROBERT. Chairwoman Boxer, Ranking Member Inhofe and members of the Committee, thanks for inviting Halliburton to testify. We will continue to work with you and your staff to collect factual data that will enable an understanding of what took place and what we collectively can do to ensure that domestic oil and gas production is undertaken in the safest, most environmentally responsible manner possible.

The catastrophic blowout and the spread of oil in the Gulf of Mexico are tragic events to everyone. On behalf of the entire Halliburton family, we extend our heartfelt sympathy to the families, the friends, the colleagues of the 11 people who lost their lives and those workers who were injured in the tragedy.

As we hope you can appreciate, neither Halliburton nor any other party can make a judgment or offer any credible theories about what happened until, at a minimum, the well owner has interviewed everyone on the Deepwater Horizon to recreate the daily log of activities for April 20th. In the absence of that information, no one should rush to judgment.

However, two things can be said with some certainty. The casing shoe was cemented 20 hours prior to the tragic incident, and had the BOP functioned as expected, this catastrophe would not have taken place.

For more than 90 years, Halliburton has provided a variety of products and services to well owners throughout the life cycle of their reservoirs in the oil and gas industry. With respect to the Mississippi Canyon 252 Well, Halliburton was contracted by the well owner to perform a variety of services. These included cementing, mud logging, directional drilling, and real time data acquisition and data delivery services for key personnel on board the rig and on shore.

Since the blowout, Halliburton has been working, at the direction of the well owner, to assist in the efforts to bring the well under control. This includes intervention support to help secure the damaged well and assistance in drilling one or more relief wells.

At the outset I need to emphasize that Halliburton is a service provider to the well owner, is contractually bound to comply with the well owner's instructions on all matters relating to the performance of work-related activities.

The construction of a deepwater well is a complex operation involving the performance of many tasks by many parties. While the well owner's representative has ultimate authority for planning and approving activities on the rig, the drilling contractor performs and directs much of the daily activity.

Cement can be used to isolate formation fluids, to prevent movement of these fluids between formations and to bond and support the steel casing. There are many external factors which affect the design and execution of a cement job. These include the variability of the hole geometry, the relative location of hydrocarbon zones, and the hydrocarbon content of associated drilling fluids.

The centralizer placement on the production casing, the drilling fluid conditioning program prior to cementing, and the cement slurry and placement design used for this well were implemented as directed by the well owner. By design, there was no continuous cement column installed throughout the entire well bore.

Approximately 20 hours prior to the catastrophic loss of well control, Halliburton had completed the cementing of the ninth and final production casing string in accordance with the well program. Following the placement of the cement slurry, the casing seal assembly was set in the casing hanger. In accordance with accepted industry practice, as required by MMS and as directed by the well owner, a positive pressure test was then conducted to demonstrate the integrity of the production casing string. The results of the positive test were reviewed by the well owner, and the decision was made to proceed with the well program.

The next step included the performance of a negative pressure test which tests the integrity of the casing seal assembly and is conducted by the drilling contractor at the direction of the well owner and in accordance with MMS requirements. We understand that Halliburton was instructed to record drill pipe pressure during this test. After being advised by the drilling contractor that the negative test had been completed, Halliburton cementing personnel were placed on standby.

We understand that the drilling contractor displaced the dense drilling fluid in the riser with lighter seawater prior to the planned placement of the final cement plug, the drilling fluid being transferred directly to a work boat alongside the drilling rig. The final cement plug would have been installed inside the production string and enabled the planned temporary abandonment of the well. But prior to the point in the well construction plan that the Halliburton personnel would have set the final cement plug, the catastrophic incident occurred. As a result, the final cement plug was not set.

Halliburton is confident that the cementing work on the Mississippi Canyon 252 Well was completed in accordance with the requirements of the well owner's well construction plan.

Before closing, though, I would really like to respectfully address an issue Senators Lautenberg and Udall raised about the spill in Australia.

A commission of inquiry is still underway. But I can tell you that Halliburton performed the cement job according to the well owner's direction. And public testimony tells us that the well control event occurred some 5 months after the well completed cementing operations. We understand that neither the drilling contractor nor the well owner performed integrity testing on that cement job, and a subsequent event caused that incident.

Thanks for the opportunity to share Halliburton's views, and I look forward to answering your questions.

[The prepared statement of Mr. Probert follows:]

Prepared Statement

Tim Probert
President, Global Business Lines and
Chief Health, Safety and Environmental Officer
Halliburton

Before the

Committee on Environment and Public Works
U.S. Senate

May 11, 2010

Chairwoman Boxer, Ranking Member Inhofe, and Members of the Committee:

Thank you for the opportunity to share Halliburton's perspective as you assess the economic and environmental impacts of the tragic Deepwater Horizon accident in the U.S. Gulf of Mexico. We look forward to continuing to work with you, your colleagues, and your staff to understand what happened and what we collectively can do in the future to ensure that oil and gas production in the United States is undertaken in the safest, most environmentally responsible manner possible.

At the outset, I want to assure you and your colleagues that Halliburton has and will continue to fully support, and cooperate with, the ongoing investigations into how and why this tragic event happened. We have already made our senior personnel available to brief Members and staff and we have produced thousands of pages of documents in support of current investigations. Halliburton had four employees stationed on the rig at the time of the accident. They returned to shore safely and each has and will continue to be made available to assist the investigative efforts. We are mindful, however, that Halliburton cannot make any judgment or offer any theories about what happened until at a minimum the well owner has completed interviewing everyone on board to re-create the daily log of activities, including those that occurred after we successfully completed the cementing operations of the production casing string.

The April 20th catastrophic blowout, explosions and fire of the Deepwater Horizon rig and the spread of oil in the Gulf of Mexico are tragic events for everyone connected to the situation. The deaths and injuries to personnel working in our industry cannot be forgotten. Halliburton extends its heartfelt sympathy to the families, friends and colleagues of the 11 people who lost their lives and those workers injured in the tragedy.

Background on Halliburton

As a global leader in oilfield services, Halliburton has been providing a variety of services to the oil and natural gas exploration and production industry for more than 90 years. Halliburton's areas of activity are primarily in the upstream oil and gas industry. They include providing products and services for clients throughout the life cycle of the hydrocarbon reservoir--from locating hydrocarbons and

managing geological data, to directional drilling and formation evaluation, well construction and completion, to optimizing production through the life of the field. The company is also engaged in developing and providing technologies for carbon sequestration and we are a service provider to the geothermal energy industry.

Halliburton is the largest cementing service and material provider in the oil and gas industry. Halliburton provides zonal isolation and engineering solutions for the life of a well. The company safely conducts thousands of successful well service operations each year and is committed to continuously improve its performance. The company views safety and environmental performance as critical to its success and these are core elements of our corporate culture. Halliburton has much to offer to help our nation meet its energy security needs.

With respect to the Mississippi Canyon 252 well, Halliburton was contracted by the well owner to perform a variety of services on the rig. These included cementing, mud logging, directional drilling, and measurement-while-drilling services. In addition, Halliburton provided selected real-time drilling and rig data acquisition and transmission services to key personnel both on board the Deepwater Horizon and at various onshore locations.

Halliburton's Particpotion in the Remediation Efforts on Mississippi Canyon 252 Well

Since the blowout, Halliburton has been working at the direction of the well owner to provide assistance in the effort to bring the well under control. This includes intervention support to help secure the damaged well and planning and services associated with drilling relief well operations.

Halliburton has deployed survey management experts to assist in planning the path of the relief wells and has mobilized its technology group to work in collaboration with another industry partner to combine our technologies, in an effort to develop an integrated ranging system to expedite the intersection of the original well.

Operations Preceding the Catastrophic Loss of Well Control on Mississippi Canyon 252 Well

I need to start this section with an important statement of disclosure. Halliburton, as a service provider to the well owner, is contractually bound to comply with the well owner's instructions on all matters relating to the performance of all work-related activities. It is also important to understand the roles and responsibilities of the various parties involved in the construction of a well. The construction of a deep water well is a complex operation involving the performance of numerous tasks by multiple parties led by the well owner's representative, who has the ultimate authority for decisions on how and when various activities are conducted.

Attached to this testimony is an illustration showing the approximate depths and positions of the casing and liner strings set in this well. In addition, the approximate position of the various cement placements is illustrated, which is consistent with the well design. It should be noted that cement is used at specific designated spots and is not designed to be a complete barrier through the entire wellbore.

Cement can be used to isolate formation fluids, to prevent movement of these fluids between formations and to bond and support the casing. A mixture of cement, water and chemicals is combined

in a slurry that can be pumped into position around the outside of steel liners and casing. There are many external factors that impact the design and execution of a cement job. These include the variability in the hole geometry, relative location of hydrocarbon zones, hydrocarbon content and the prior condition of the wellbore and associated fluids as determined by the drilling fluid provider. Casing strings are typically run with devices to centralize the casing concentrically in the wellbore and prevent incomplete displacement of drilling fluid, or "channeling".

While every effort is made to complete a cement job with the highest levels of mechanical and hydraulic integrity, the above mentioned well conditions may prevent this. Confirming cement integrity after placement would require the well owner to direct the wireline provider to obtain cement evaluation logs. Based on the findings of these logs, the well owner can elect to perform remedial action by perforating the casing and "squeezing" cement into remaining voids to improve the integrity of the original cement.

The centralizer placement on the production casing, the drilling fluid conditioning program prior to cementing and the cement slurry and placement design used for this well were implemented as directed by the well owner. However, as shown in the attached diagram, by design there is no continuous cement column throughout the entire wellbore.

Approximately 20 hours prior to the catastrophic loss of well control, Halliburton had completed the cementing of the ninth and final production casing string in accordance with the well program.

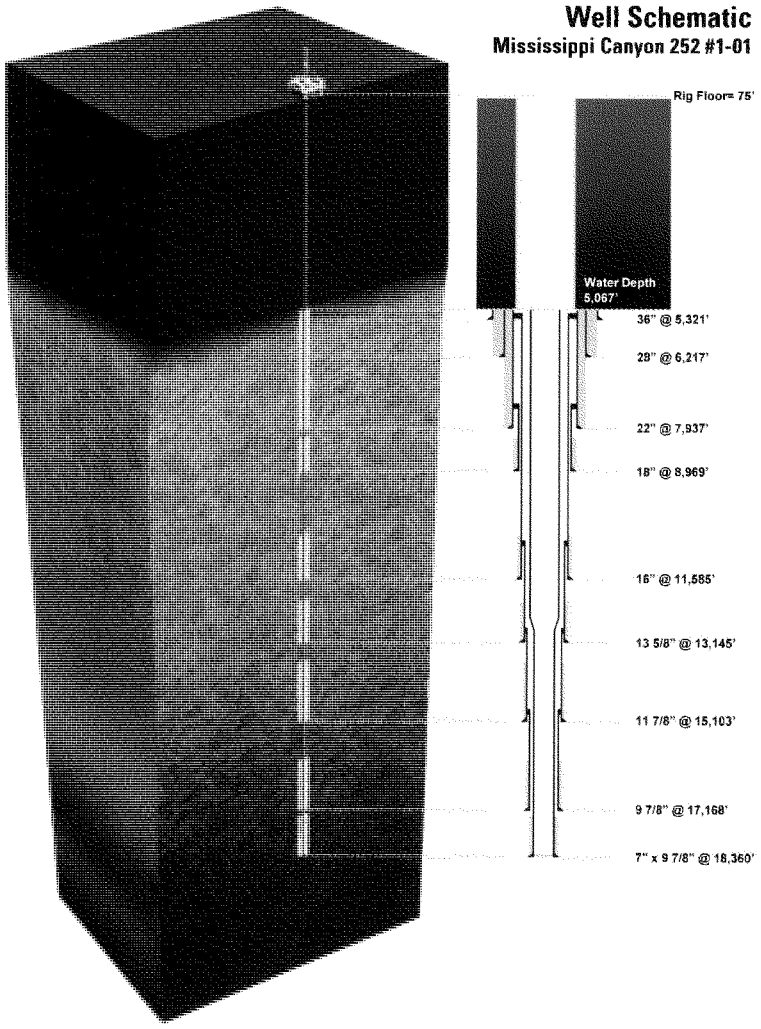
Following the placement of 51 barrels of cement slurry, the casing seal assembly was set in the casing hanger. In accordance with accepted industry practice, as required by MMS and as directed by the well owner, a positive pressure test was then conducted to demonstrate the integrity of the production casing string. The results of the positive test were reviewed by the well owner and the decision was made to proceed with the well program.

The next step included the performance of a "negative" pressure test, which tests the integrity of the casing seal assembly and is conducted by the drilling contractor at the direction of the well owner and in accordance with MMS requirements. We understand that Halliburton was instructed to record drill pipe pressure during this test until Halliburton's cementing personnel were advised by the drilling contractor that the negative pressure test had been completed, and were placed on standby.

We understand that the drilling contractor then proceeded to displace the riser with seawater prior to the planned placement of the final cement plug, which would have been installed inside the production string and enabled the planned temporary abandonment of the well. Prior to the point in the well construction plan that the Halliburton personnel would have set the final cement plug, the catastrophic incident occurred. As a result, the final cement plug was never set.

Halliburton is confident that the cementing work on the Mississippi Canyon 252 well was completed in accordance with the requirements of the well owner's well construction plan.

Thank you for the opportunity to share our views.


Well Schematic
Mississippi Canyon 252 #1-01
Rig Floor= 75'
Water Depth
5,067'
36" @ 5,321'
28" @ 6,217'
22" @ 7,937'
18" @ 8,969'
16" @ 11,585'
13 5/8" @ 13,145'
11 7/8" @ 15,103'
9 7/8" @ 17,168'
7" x 9 7/8" @ 18,360'

RESPONSES OF TIM PROBERT, HALLIBURTON

TO

MAY 11 HEARING QUESTIONS FOR THE RECORD

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

U.S. SENATE

Senator Barbara Boxer

Question 1. Describe the process that Halliburton used to cement the Deepwater Horizon oil well that experienced a blowout on April 20, 2010, including the:

a. Date and time of each cementing job;

b. Applicable standards and industry practices that applied to each cementing job;

c. Testing procedures used to ascertain the adequacy of each cementing job; and

d. Results of any tests conducted on any cementing job.

e. Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, arid any other documents relating to each cementing job and any assessment of such cementing job.

Response:

The production casing was the ninth casing string run and cemented on the Mississippi Canyon 252 well. The production casing is the only tubular that intersects the productive intervals in this well.

a. The production casing cement job (7" x 9 7/8" tapered casing string) was performed on the evening of April 19th and was completed in the very early morning of April 20th, 2010.

b. All work was completed under the direction of BP, the well owner. Halliburton's Management System (HMS) process was employed to manage design and delivery of the service and materials. Laboratory testing was performed under the following API standards:

1. 10B-2 Testing of well cements;

2. 10B-3 Testing of deepwater well cement formulations; and

3. 10B-4 Preparation and testing of foam cement slurries at atmospheric pressure.

In addition Halliburton's Global Laboratory Best Practices – Volume 4, Cementing, updated March 2010, were adhered to.

c. Cement was tested in Halliburton's Gulf Coast laboratory in Lafayette, Louisiana. With reference to laboratory test report 73909/2, dated April 12th, 2010, the following physical tests were performed:

1. Thickening Time;

2. Mud Balance Density;

3. Mixability;

4. UCA Compressive Strength;

5. Crush Compressive Strength;

6. FYSA Viscosity Profile and Gel Strength;

7. Non API Rheology, at surface and bottom hole circulating temperature; and

8. Foam Mix and Stability

For further background for this question as well as for the other ones below that refer to the company's work on the final casing string, please refer to these attachments:

Editor's Note: The attached documents referred to throughout are labeled Business Confidential. They are available in the Committee's files.

- Lab Results, 9 7/8" x 7" Production Casing (April 12, 2010) [HAL_0044651-HAL_0044652];
- 9 7/8" x 7" Production Casing Design Report (April 15, 2010) [HAL_0010592-HAL_0010720];
- 9 7/8" x 7" Production Casing Design Report (April 15, 2010) [HAL_0010699-HAL_0010720];
- 9 7/8" x 7" Production Casing Design Report (April 18, 2010) [HAL_0010988-HAL_0011020];
- 9 7/8" x 7" Production Casing (April 18, 2010) [HAL_0044606-HAL_0044617];

- 9.875" x 7" Foamed Production Casing Post Job Report (April 20, 2010) [HAL_0028310-HAL_0028323];
- Email from Brian P. Morel, BP, to Jesse Gagliano, HAL, et al (April 15, 2010) [HAL_0010648-HAL_0010650];
- Email from Bryan Clawson, Weatherford, to Brett W. Cocales, BP, copy to Jesse Gagliano, HAL (April 15, 2010) [HAL_0010643];
- Email string between Halliburton and BP individuals (April 13, 2010-April 15, 2010) [HAL_0010559-HAL_0010563]; and
- Email string between Brian P. Morel, BP, and Jesse Gagliano, HAL (April 16, 2010) [HAL_0010815-HAL_0010817]; and
- Email string between Halliburton and BP individuals (April 18, 2010 and May 1, 2010) [HAL_0044604-HAL_0044605].

Question 2. Describe Halliburton's role in drilling the well that blew out in the Timor Sea.

a. Describe all procedures that Halliburton implemented following the Montara oil spill to improve the safety and effectiveness of cementing jobs on offshore oil rigs; and

b. Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to the implementation of such procedures following the Montara spill.

Response:

Halliburton was contracted to provide cementing services and materials to PTT for use on its Montara project in the Timor Sea. The official Australian enquiry board has not yet released its findings. No root cause has been determined. As a result, Halliburton has taken no action in response.

Question 3. Please describe in detail: the process that was used to attempt to cap the Macondo well; the typical process for capping a well of this type; the decision-making process related to efforts to cap the Macondo well, including decisions related to the drilling mud being replaced with sea water; the individuals making decisions related to capping the well; a description of any tests undertaken during the capping process, the result of those tests, and the subsequent decision(s) made following any tests; if the process used for capping the Macondo well differed from typical Haliburton practice or standard industry practice, and if so the reasons for any differences.

a. Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and any other documents relating to Haliburton's decision-making process and actions to cap the Macondo well.

Response:

Halliburton was contracted by the well owner to perform a variety of services on the Deepwater Horizon drilling rig, including cementing work on the Mississippi Canyon 252 well. Halliburton's scope of work, however, did not include well capping. The well owner is responsible for all planning, testing, and execution of capping operations. Halliburton has provided cementing and directional drilling services as part of the well owner's relief well and top kill activities. This work has been performed under the direct instruction of the well owner.

Question 4. A May 27, 2010 news report states that "[i]n an April 18 report to BP, Halliburton warned that if BP didn't use more centering devices, the well would likely have 'a SEVERE gas flow problem.' Still, BP decided to install fewer of the devices than Halliburton recommended--six instead of 21."

a. Describe the decision-making process that resulted in the decision to install less centering devices in the well than recommended; and

b. Provide the Committee with all documents, including any draft and final memos, emails, notes, logs from electronically-conducted meetings, correspondence, reports, press releases, public statements, test results, and other documents related to the decision relating to the centering devices.

Response:

The well owner was responsible for making all final decisions with respect to implementation of its well plan. Halliburton can only address the recommendations we made. Halliburton cannot speak for the well owner with respect to its decisions, including its apparent decision to ignore Halliburton's advice to use 21 centralizers.

- The job was originally planned to incorporate 6 rigid centralizers, which were loaded onto the rig.
- After loading casing and centralizers onto the rig open hole logging was performed. A calliper log describing the geometry of the hole was included in the logging suite.
- Halliburton conducted computer software simulations using input, including the calliper, provided by the well owner to determine the optimum number of centralizers.

- The results of this simulation indicated that 21 centralizers would be required to center the casing and minimize the effects of cement channelling.
- The results of the computer simulations were communicated to the well owner.
- Based on Halliburton's simulation the well owner transported 15 bow spring centralizers to the rig.
- The well owner made changes to the recommended number of centralizers for the 9 7/8 x7" production casing. The well owner chose to run only the 6 originally planned rigid centralizers.
- When informed of this decision, Halliburton's engineer again modelled the casing cement job using the well owner's decision to run less than 21 centralizers.
- The results indicated that cement channelling would likely occur with 7 centralizers, which the Halliburton engineer communicated to the well owner's drilling team.
- The well owner ignored Halliburton's advice and used only 6 centralizers.

With respect to the foregoing, please see the attached documents:

- Lab Results, 9 7/8" x 7" Production Casing (April 12, 2010) [HAL_0044651-HAL_0044652];
- 9 7/8" x 7" Production Casing Design Report (April 15, 2010) [HAL_0010592-HAL_0010720];
- 9 7/8" x 7" Production Casing Design Report (April 15, 2010) [HAL_0010699-HAL_0010720];
- 9 7/8" x 7" Production Casing Design Report (April 18, 2010) [HAL_0010988-HAL_0011020];
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- 9.875" x 7" Foamed Production Casing Post Job Report (April 20, 2010) [HAL_0028310-HAL_0028323];
- Email from Brian P. Morel, BP, to Jesse Gagliano, HAL, et al (April 15, 2010) [HAL_0010648-HAL_0010650];

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- Email string between Brian P. Morel, BP, and Jesse Gagliano, HAL (April 16, 2010) [HAL_0010815-HAL_0010817]; and
- Email string between Halliburton and BP individuals (April 18, 2010 and May 1, 2010) [HAL_0044604-HAL_0044605].

Senator Thomas R. Carper

Question: How did MMS, Halliburton, Transocean, and BP coordinate the testing of equipment at the surface and at the ocean floor? Specifically regarding the cement casings and blowout preventer, how often were tests done, how were results shared and how were they performed?

Response:

All integrity testing of casings and blow out preventers are the responsibility of BP, the well owner. Halliburton acted only as directed by the well owner to provide pressure pumping services as it would as part of any well integrity testing. Coordination of surface and subsurface integrity testing is governed by the well owner's well construction plans as reviewed and approved by the Minerals Management Service. BP and Transocean would thus be in a better position to answer.

Senator Benjamin L. Cardin

Question 1. In the schematic drawing of the cementing job that accompanied your testimony, an open annulus is depicted above the bottom plug between casings 8 and 9. Drilling experts have indicated that an open annulus as depicted would be a key design flaw that easily could have allowed natural gas to shoot to the surface undetected. Is the drawing an accurate depiction of the well and the cementing job? If so, why wasn't that annulus closed with a liner hanger?

Response:

This illustration, prepared in advance of the hearing with insufficient time to review, is not an accurate representation of the conditions included within the well plan. The well owner's well plan provided for a casing hanger and seal assembly to provide a barrier between the 9 7/8" x 16" casing annulus. A revised drawing is provided to replace the previously submitted inaccurate depiction of the well, please see attached file "Schematic Poster.pdf" [HAL_0048858].

Question 2. Press reports indicate that Halliburton used a new cement mix with nitrogen which generates more heat than other mixes. Is this true, and why was this particular mix used? Was this mix used because it cures more quickly than other mixes in an attempt to save time and cut costs? Has it been used in other wells?

Response:

Please refer to the following chart depicting Halliburton's Foam Cement Global experience:

Why Foam Cement?

GEOGRAPHICAL REGION		MEASURED DEPTH OF FOAM JOB (ft.)	
		Greater than 15,000 ft	Greater than 18,000 ft
Gulf of Mexico Region (USA)	Offshore	51	13
Mexico	Offshore	8	3
Norway	Offshore	103	25
United Kingdom	Offshore	2	0
Midcontinent Region (USA)	Onshore	20	3
Permian Region (USA)	Onshore	6	1
Rocky Mountain Region (USA)	Onshore	22	3
Mexico	Onshore	58	31
	TOTAL	270	79

Halliburton has performed foam cement jobs for over 25 years. The table above provides information on deep foamed cement jobs for which Halliburton has records in its current electronic system.

- Foam Cement: stable mixture of cement slurry, foaming agents, and inert gas (nitrogen)
- Foam cement benefits:
  - Ability to manage density
  - Compressible fluids best mitigate flow
  - Improves displacement efficiency
  - Mechanical properties are applicable for production long string or liner
- Alternative lightweight systems:
  - Hollow micro-spheres
    - Logistical constraints
    - Density fixed at load out
    - Exploration well-parameters unknown
  - Water extended
    - Lower compressive strengths
    - Flow control limitations

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HALLIBURTON

Question: Has Halliburton sought permission or approval from MMS to use this mix?

Response: It is the well owner's responsibility to obtain all necessary permission and approvals from MMS. Halliburton had no contact with MMS regard the use of this mix.

Question: Please provide copies of emails or any other written correspondence and transcripts of any phone calls between Halliburton and BP, Schlumberger, Transocean, or MMS officials on and off the rig regarding the decision to use this mix.

Response: Please refer to attached documentation:

- Lab Results, 9 7/8" x 7" Production Casing (April 12, 2010) [HAL_0044651-HAL_0044652];

- 9 7/8" x 7" Production Casing Design Report (April 15, 2010) [HAL_0010592-HAL_0010720];
- 9 7/8" x 7" Production Casing Design Report (April 15, 2010) [HAL_0010699-HAL_0010720];
- 9 7/8" x 7" Production Casing Design Report (April 18, 2010) [HAL_0010988-HAL_0011020];
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- Email from Brian P. Morel, BP, to Jesse Gagliano, HAL, et al (April 15, 2010) [HAL_0010648-HAL_0010650];
- Email from Bryan Clawson, Weatherford, to Brett W. Cocales, BP, copy to Jesse Gagliano, HAL (April 15, 2010) [HAL_0010643];
- Email string between Halliburton and BP individuals (April 13, 2010-April 15, 2010) [HAL_0010559-HAL_0010563]; and
- Email string between Brian P. Morel, BP, and Jesse Gagliano, HAL (April 16, 2010) [HAL_0010815-HAL_0010817]; and
- Email string between Halliburton and BP individuals (April 18, 2010 and May 1, 2010) [HAL_0044604-HAL_0044605].

Question 3. BP decided to use a type of casing for the well that provides a single barrier against gas leakage if the cement doesn't seal properly. Other casings typically used in the industry provide two such barriers. Did BP's decision to use this casing have any bearing on Halliburton's decision to use the different cement mix? In light of the BP decision, would it have been prudent to rely on a more "tried and true" cement mix? Please provide copies of emails or any other written correspondence and transcripts of any phone calls between Halliburton and BP, Schlumberger, Transocean, or MMS officials on and off the rig regarding the characteristics of and interaction between the particular casing and cement mix used.

Response:

The well owner maintains all well design responsibilities. Foam cement is recognized within the industry to provide a viable method to deliver lightweight cements for use in oil

and gas wells. A review of our database reveals the following applications of foam cement under similar bottom home conditions.

GEOGRAPHICAL REGION		MEASURED DEPTH OF FOAM JOB (ft.)	
		Greater than 15,000 ft.	Greater than 18,000 ft.
Gulf of Mexico Region (USA)	Offshore	51	13
Mexico	Offshore	8	3
Norway	Offshore	103	25
United Kingdom	Offshore	2	0
Midcontinent Region (USA)	Onshore	20	3
Permian Region (USA)	Onshore	6	1
Rocky Mountain Region (USA)	Onshore	22	3
Mexico	Onshore	58	31
	TOTAL	270	79

Halliburton has performed foam cement jobs for over 25 years. The table above provides information on deep foamed cement jobs for which Halliburton has records in its current electronic system.

Senator Jeff Merkley

Question 1. Why did employees of Schlumberger leave the Deepwater Horizon without conducting all relevant tests on the cement work, including the "cement bond log" tests?

Response: Like Halliburton, Schlumberger would have been contracted directly by the well owner to undertake certain work in executing the well owner's well construction plan. Halliburton had no contractual relationship with Schlumberger with respect to any services provided to the well owner. All requests for services to be performed by Schlumberger would come from or be under the direction of the well owner.

Question 2. Please provide any logs, testing results, or other reports on the cementing work from the final week leading up to the disaster.

Response: Please refer to the attached files for post job reports and correspondence:

- Lab Results, 9 7/8" x 7" Production Casing (April 12, 2010) [HAL_0044651-HAL_0044652];
- 9 7/8" x 7" Production Casing Design Report (April 15, 2010) [HAL_0010592-HAL_0010720];
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- Email string between Halliburton and BP individuals (April 18, 2010 and May 1, 2010) [HAL_0044604-HAL_0044605].

Senator BOXER. Thank you very much.

Mr. McKay, we have heard from the media that there is a lot of BP video of the spill, and there have been requests to see it to look at the spill volume because it seems we cannot get a true picture. But we have heard 4 million gallons. Is that your estimate of what we have spilled so far?

Mr. MCKAY. I think the estimate is 5,000 barrels a day for the last 20 days. So, if that, doing the math, if that is right, 42 gallons per barrel, so I would have to do the math. But as far as videos, there are some videos and pictures that are on the United, the Unified Area Command site. I believe they are actually trying to add to that in terms of a——

Senator BOXER. I understand it is far more than has been released. Would you get back to this Committee? We would be interested in viewing those and making those public. Would you get back to us on how many of the videos have still not been shown to the public? I mean, get back to us on how much footage that has not been shown to the public.

Mr. MCKAY. OK.

Senator BOXER. And make that available to us.

Mr. MCKAY. Yes. Everything goes through Unified Area Command. Yes.

Senator BOXER. All right.

Mr. Probert, I was taken by your testimony. It seems to me that you are blaming the well owner in all the cases here. And in other words, you do not do any testing unless they ask you? You do not test the cement; you do not, if they do not ask you, you do not do it? You take no responsibility?

Mr. PROBERT. I think that I certainly, I certainly was not intending to suggest that in any way. I was simply trying to clarify the roles of the parties.

There are two tests which are undertaken on the integrity of the well itself. One is called a positive pressure test, which tests the integrity of the production string of casing itself. The second is called a negative pressure test and that tests the integrity of the seal assembly, which is the top of the casing string where it sits in the wellhead.

With respect to the cement itself, it is obviously an engineered product and that it can, subsequently, be tested when it has been pumped into the well bore using a variety of techniques.

Senator BOXER. And do you recommend that test be done?

Mr. PROBERT. That testing is done at the discretion of the well owner.

Senator BOXER. That is the point I am getting at. So, let us just say the well owner does not do it. Do you feel you have any responsibility to urge them to do it given what did happen in Australia?

Mr. PROBERT. The MMS is fairly clear on this point. If it is felt, for example, that the integrity of the cement is in question, such as there is an event called loss returns and that means that during the pumping on a cement job no returns are received at the surface, that would mean——

Senator BOXER. Sir, I am sorry. I have so little time. So, I guess my question is, if you felt that the well owner was not testing the cement, would you feel any obligation to request that they do so?

Mr. PROBERT. We would feel an obligation if we felt that the integrity of the cement was in question, yes.

Senator BOXER. That was my question. Thank you.

Mr. McKay, prior to the incident on the Deepwater Horizon rig, BP was quite confident in its ability to deal with an oil spill there. In February of this year BP submitted to MMS an initial exploration plan for the area where the Deepwater Horizon incident occurred. And in that plan BP said, due to the distance to shore, 48 miles, and the response capabilities that would be implemented, no adverse impacts are expected for beaches, for wetlands, for shore birds and coastal nesting birds, for coastal wildlife refuges, and for fisheries. Your words then.

However, BP's certainty in its ability to deal with a spill is in sharp contrast to what is being said now that an actual spill has occurred. Yesterday, BP released a statement regarding its effort to control the leak that said, "All of the techniques being attempted or evaluated to contain the flow of oil on the seabed involve significant uncertainties," and these are your words again, "because they have not been tested in these conditions before."

Well, I will tell you that just putting those two statements side by side, it is a stark difference in what you said before and what you are saying now. How do you reconcile the stark difference in what you said in trying to get this project going without a big, long environmental impact statement, which you got, and what you are saying now, that these conditions have never occurred before?

Mr. MCKAY. We obviously did not expect a situation like this. The conditions that we are working in are very unique. It is in 5,000 feet of water. It is the first time something like this has happened. This is an unprecedented accident. Obviously, when that document you are quoting was turned in, we were not expecting this.

I think the spill response plan has actually been a good foundation to deal with this. It is, if we look at what we are doing, fighting this thing as aggressively as we can offshore with dispersants, in-situ burning, skimming resources, those resources have come to bear and the booming to protect shoreline have come to bear the costs of a spill response plan that was in place, and enacted and approved in 2009 of last year.

The subsea interventions that we are doing are the first of its kind——

Senator BOXER. Well, I know, I know that you are working very hard now. I am not questioning that at all. I am just saying, when you look back to the documents that you filled out, when you were asking for no long environmental impact statement, you wanted to be exempt from it all, and you got all of that, you got all of that, you said then, it is unlikely that we are going to have an impact because we are using proven equipment and proven technology.

My time has run out. But I want to say that we cannot have a world where people say one thing before they get a permit and then just act like they never said it. You said we will not have a problem. And then we have a tragedy like this. And I am just saying we need to do better.

That is why I am supporting separating out the oversight of moving forward with these drilling projects from the safety oversight.

We need to have it done in two separate places and have an independent agency because this is just unacceptable to say two starkly different things about the same project.

It is just—it does not build our confidence in the future right now, and frankly I do not see how we could possibly approve anything like this until we figure this thing out. We cannot have companies saying one thing to just get fast approval and then acting like they never said it.

Senator Inhofe.

Senator INHOFE. Thank you, Madam Chairman. Let me just refer to my opening statement. I implied, and I really believe that you guys, your time would be better spent right now down there trying to contain this mess than it is up here at hearings.

However, when I said that, I would compliment our Committee and the Chairman because they had already decided to have Committee hearings over in the House Energy, in Congress, Committee and then the Senate Energy and Natural Resources Committee. I think that kind of forced us to do it, or we would not be doing our jobs.

So, anyway, I still stand by the statement that I would rather you go ahead and get that done. Then the blame game can take place later.

The Senator from Pennsylvania implied that a lot of the technologies and the things that were being done have not really changed over the years. And it is my understanding, because we are trying to really get into this thing and learn what it is all about, Mr. McKay, the use of dispersants, I understand that the type of dispersants that you are using is this biodegradable, it is a technology that is, something that is newer than the dispersants that have been used before.

Would you comment on this technology, and has this improved over the past period of time?

Mr. MCKAY. The dispersants were are using were pre-approved by the EPA for over-flight and they are——

Senator INHOFE. The dispersants that are used now are not the same ones that were used like——

Mr. MCKAY. These are the very latest versions of dispersants. They are biodegradable. When we talk about technology, it is partly the dispersants, it is partly the method by which you are deploying them and what scale and how they are being deployed. And on the surface, as you know, I will not go into detail, we have got an air force flying with dispersants.

The other thing we are doing with subsea dispersant, which is a new technology and has not been done before and the EPA is monitoring very closely, is to inject dispersants at the source, effectively. We do believe that will allow less dispersant to be used per unit of effected oil. So, this is being done in trials now. We hope to go to——

Senator INHOFE. And with the EPA and the Coast Guard——

Mr. MCKAY. And the Coast Guard.

Senator INHOFE. They are involved in this thing, too.

Well, the MMS has been beat up pretty bad. I think one of the reasons for that is that they have come out and said we have done

something, you know, right in terms of trying to monitor these things.

I remembered, and I asked the staff to get this for me, it is dated January 29, 2009, when we made a big issue of the problems that exist with the MMS. And Secretary Salazar, he launched this reform, and he put Tom Strickland in charge of it. Frankly, I thought that that pretty much had worked.

And Mr. Newman, the safety record, I thought it was pretty impressive that the MMS has conducted 26 inspections on Deepwater Horizon in the past 5 years. Is that unusual? Is that what has been happening in the past? And then also, what is the story on the SWAT teams referred to by Salazar? I am not sure if that is an inconsistency, if perhaps that is saying we are doing something now that we should have done before. Would you try to explain that?

Mr. NEWMAN. I think there are two parts to your question, Senator. One has to do with the relationship, in this case, between Transocean, the drilling contractor, and the MMS. And the way I would characterize our relationship with the MMS is they show up on our drilling rigs regularly, unannounced, they conduct thorough inspections of the drilling rigs, they know what to look for, and they are thorough and rigorous about looking for that.

Senator INHOFE. All right. But when you say they come up unannounced and they—what is the kind of frequency we are looking at?

Mr. NEWMAN. I think the frequency you cited was 26 times on the Deepwater Horizon in the last 5 years. They are out there once a month, every other month. They are out there routinely.

Senator INHOFE. And they, apparently you were the recipient of an award that was for "Outstanding Drilling Operations and Perfect Performance." Anyway, these efforts were out there, and you have been, does that imply, that would imply to me that you have been complying with the recommendations that the MMS had?

Mr. NEWMAN. Yes, Senator.

Senator INHOFE. OK.

Mr. McKay, it is confusing to a lot of us. We look at the BOP stats here, and I know you cannot see that but you know what it is. You live with this on a daily basis. When we are dealing with this, they apparently have different rams that were on the BOP stacks. Do you want to just briefly, briefly, discuss the different purposes of each one. Why do you have more? Is this redundancy? How many are on there? And how does it work?

Mr. MCKAY. Yes, let me walk through that a bit, and then perhaps Mr. Newman can help me since it is their BOP. They have different sets of rams, or valves, in a sense valves that can close around different sizes of pipe, also different types of rams that can sheer pipe and seal, also different types of rams that can actually just cut pipe to get it out of the way. So, there are various types of rams in BOPs, and this one had each one of those types of rams.

Senator INHOFE. OK.

Mr. Newman, do you want to make any comment about that?

Mr. NEWMAN. I would be happy to tell you about the BOP on the Deepwater Horizon, Senator. The BOP on the Deepwater Horizon, there are two basic closing mechanisms. One is a mechanism the

industry refers to as a ram-type preventer. That closes large blocks. The other one is an annular-type preventer which squeezes a doughnut around any pipe that would be in the well bore.

The Deepwater Horizon was fitted out with five ram-type preventers, and these ram blocks can have openings in the center. So, that would facilitate the rams closing around pipe. Sometimes the rams have sharp edges.

Senator INHOFE. So, it is a redundancy. I appreciate that very much.

My time has expired, but I do want to ask a question for the record, and you can respond to it later concerning the cementing, for Mr. Probert.

Thank you, Madam Chair.

Senator BOXER. Thank you, Senator.

Senator Lautenberg.

Senator LAUTENBERG. Thank you, Madam Chairman. And thank all of you for your testimony. One thing is certain, that each one of you must feel terrible torment about what is going on. And I know that you do.

But the fact of the matter is you had the responsibility to make sure that everything was just right in the processing here. You all know that you are in an industry that can produce wonderful things, but also within the orbit in which you are working you can also be witness to terrible, terrible situations, as we have seen here, the Deepwater Horizon.

I would ask each one of you, and I know there are parts to the puzzle that each one of you puts together, and I would ask you first, Ms. McKay, is BP the party responsible for the leak?

Mr. MCKAY. We do not know who is responsible for what yet. The investigations will look at the processes, the equipment and the decisions that were made——

Senator LAUTENBERG. OK. I do not want to cut you off, but I want to try to move along.

Mr. Newman, is your company responsible for the eruption that occurred from the rig?

Mr. NEWMAN. Senator, until we understand the root cause of the event, I do not think it is appropriate to speculate on who or what might be responsible.

Senator LAUTENBERG. Yes, well, I know that everybody, there is a bit of, if you will forgive me, a bit of a handoff that I think is taking place.

Mr. Probert, do you——

Mr. PROBERT. I think everyone is working very hard together, collectively, to pull the facts together so we can really diagnose exactly what did take place.

Senator LAUTENBERG. I will tell you what I draw. The conclusion that I draw is that nobody assumes the responsibility, whether it is yet or because of the time. The fact is that what it says to me is that these projects, as valuable as they are, bring with them a level of danger that is terrific, a very heavy risk to the nearby seashores, communities, States, et cetera.

And that is what concerns me about this willingness or intention to continue new drilling. We do need to have an oil supply. We do need to have it available to the public. But we also need, just as

intensely as we do investing in these drilling programs, we, just as intensely, do we have to find alternative, renewable sources that are sustainable. And I do not see it.

I come out of the business world. I spent 30 years in the corporate world at a company that today has 40,000 employees, and I was one of the founders of that company. And I know how to— what I recognize on a balance sheet or P&L statement. And I just mention for interest here that BP in the quarter just ended at the end of March had a 133 percent gain, for a quarter, profits of $3.2 billion. Is there any challenge to that, Mr. McKay, at all?

Mr. MCKAY. No.

Senator LAUTENBERG. And I heard the Secretary of the Interior declare publicly that BP was going to be responsible for the clean up there and for whatever resources it took. So do it.

I then heard, and I do not remember whether it was you, sir, or someone else in the company who said reasonable claims, that is what you are doing. Is that correct?

Mr. MCKAY. Legitimate claims.

Senator LAUTENBERG. Legitimate claims. So, that is already an area of protection that you are putting around this thing. But we will go, we will make the judgment about the claims that are legitimate and those you are willing to pay. But it says also that there are a lot of claims that might not be legitimate, and you are going to reserve the opportunity to make your decisions when the situation occurs.

Mr. MCKAY. Can I clarify the intent?

Senator LAUTENBERG. Please do.

Mr. MCKAY. The intent is to be fair, responsive and expeditious and to address all claims. It is— we are not using legal words. This is what we mean. We are a responsible party as a leaseholder, and we are going to live up to every single responsibility under that and we have publicly said——

Senator LAUTENBERG. Well, at some point, one or more, well, all of you will be involved in anything that occurs by way of expense.

Mr. Newman, I think I read correctly when——

Senator BOXER. Last question, Senator, please.

Senator LAUTENBERG. When you said that you had completed your task before the explosion occurred. Am I right?

Mr. NEWMAN. Senator, I indicated that drilling operations, the process of actually deepening the well, had completed on April 17th.

Senator LAUTENBERG. OK.

Madam Chairman, I ask unanimous consent that my full statement be inserted in the record, and I ask you whether we are going to have a chance to ask further questions. I know that you have another panel coming.

Senator BOXER. Well, here is the situation, colleagues, so we can make a decision, all of us together. We have four votes scheduled, and pretty soon, too. We expect them to start around 4:30. So, we are going to have to recess at that point. My hope was, because we have a whole other panel, to try and complete this round and have everybody do some written questions. And I am sure, gentlemen, you would be very pleased to answer those, correct? And that

would be very helpful. But we can probably go until about 4:45, so why do we not keep moving on.

Senator Vitter.

[The prepared statement of Senator Lautenberg was not received at time of print.]

Senator VITTER. Thank you, Madam Chair. Thank you all for testifying.

As I said in my opening statement, between the task of stopping the flow and cleaning up the oil, there is a critical challenge that I am very focused on with folks in Louisiana which is blocking the oil as much as possible before it hits land, in particular before it gets into marshland. A barrier island's beach is one thing—not that I am trivializing that impact, but once it gets behind them into Louisiana marshland, it is a very delicate and specific ecosystem. It is a lot more complicated.

In that effort, boom and related supply is critical. That is the currency, as you know, of the entire effort. I have two questions, Mr. McKay, related to that. First is this. On Friday I sent Admiral Allen a letter, I copied Tony Hayward, among others. It pointed out that, according to the latest Unified Command statistics, there was an enormous inequity in terms of boom going to States.

Mississippi was getting about 1 mile for every 1.32 miles of vulnerable coastline, just taking a 200-mile radius from the event. That covers all of their coastline. Alabama was 1 mile to every 1.76 miles of coastline. Louisiana was 1 mile of boom for every 13.5 miles of coastline. And that is counting all of Mississippi and Alabama's coastline as vulnerable, and just about half or less of Louisiana's. It is an order of magnitude difference.

What is being done to correct that?

Mr. MCKAY. Two pieces to your questions. One is the supply chain for boom is being enlarged, effectively, so that we can sustain boom. I do not have a foot number, but it is going to be a sustainable amount of boom that we think that we can continue to do this for quite a period of time. Second, there is several billion feet of boom being flown in.

Third, I spoke to Unified Area Command yesterday, I think it was, about shifting and redeploying as we need to to protect as the sheen and things move around. So, I believe Commandant Allen and the others in Unified Area Command are looking at this. And then we are working, as you may know, with your parish presidents and the area contingency plans to kind of effectively shift and get that over there.

Senator VITTER. OK. If your team could get, I am going to submit this letter for the record about the inequity, and if your team could get an up-to-the-minute response about what shift is going on, that would be great.

With regard to the overall supply line of boom and related materials, let me just say that the experience on the ground, on the front line, if you will, is still very frustrating and very uncertain in terms of that actually showing up. So, I just commend that to you as well.

Mr. McKay, a related point. As you know, there has been a major proposal to do emergency dredging to build up and extend barrier islands off Louisiana, to close smaller gaps between sections of bar-

rier islands, as part of this protection. It is basically a lot more effective than boom, which is in limited supply anyway. Does BP have a specific response to that? Because obviously all of these efforts are very time sensitive.

Mr. MCKAY. Again, I believe that proposal and that plan are being reviewed, as we speak, in Unified Area Command. So, that is the mechanism, the structure, that we are operating under, and I believe, as I understand it, over the last couple of days they have been reviewing. So, I do not have the latest up to date information today, but they are reviewing it.

Senator VITTER. Well, that is certainly true. As I understand it, the Federal agencies, including the Corps, which has to issue a permit, including EPA, are fine with this and are essentially awaiting a decision on movement from BP. So, I think that is a broad but accurate statement of where it is. So, when can we expect a clear reaction decision from BP?

Mr. MCKAY. I will take that back for immediate understanding.

Senator VITTER. OK. And again, if you all can respond directly to me and others about that, that would be great.

Another very important, if I could just wrap up quickly——

Senator BOXER. Yes.

Senator VITTER. Another big concern, Mr. McKay, as you can imagine, is using as much local labor and assets in the response as possible because these are the people hurting from the spill. And BP has made a commitment to that.

The problem is in practice we are seeing a lot of cases where it is not happening. And it is eerily reminiscent for us, quite frankly, to a lot of the response after Katrina and Rita where all these enormous mega-companies came in from out of State and did an enormous amount of the work and occasionally hired locals five levels down the chain as subcontractors.

Let me just give you one concrete example. Grand——

Senator BOXER. Senator, we have a vote that started and Senator Cardin and others are waiting. So, you can come back and talk on——

Senator VITTER. Well, can I wrap up this question?

Senator BOXER. Well, I thought you were wrapping up.

Senator LAUTENBERG. [Off microphone.] You need to get regular order, Madam Chairman.

Senator BOXER. I am trying to get regular order, if I can.

Senator VITTER. What is BP doing to prevent what has been happening in the last few days of local labor and resources not being exhausted before being brought in from elsewhere?

Mr. MCKAY. We recognize the issue and have been working on it and will continue.

[The referenced letter follows:]

DAVID VITTER
LOUISIANA

DEPUTY WHIP

Armed Services
Banking, Housing and Urban Affairs
Commerce, Science, and Transportation
Environment and Public Works
Small Business and Entrepreneurship

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IMMEDIATE ATTENTION REQUESTED

Admiral Thad W. Allen
Commandant of the United States Coast Guard
Coast Guard Headquarters
2100 Second Street, SW Stop 7101
Washington, DC 20593-7101

Dear Admiral Allen:

I write to express my very strong concern regarding the positioning and deployment of boom along the Gulf Coast and the apparent huge disparity that presently exists and disadvantages Louisiana.

According to the latest Coast Guard figures available, and based on rough estimates, one mile of boom has been deployed to Louisiana for every 13.4 miles of coastline within 200 miles of the ongoing oil discharge. This 1/13.4 ratio compares to 1/1.32 for Mississippi and 1/1.76 for Alabama. Like Louisiana, Florida has a similarly low ratio.

Because this calculation only accounts for coastline within 200 miles of the spill site, it does not include Louisiana's entire coast. It does, however, include the entire coastlines of Mississippi and Alabama, so the calculation is plainly very fair and conservative.

Please look into this apparent disparity. I look forward to hearing from you regarding any updated figures and how this situation will be corrected quickly.

Of course, a big part of the solution is procuring much more boom overall. Already, lack of available boom is slowing efforts in St. Bernard Parish, which I visited this morning. I have had a telephone conference about this with Admiral Watson, but he did not identify an adequate plan for ramping up procurement in those meetings. I am aware that 876,936 feet of boom has been deployed. With significantly more available and with Louisiana's coast being the closest to the spill site, I urge you to direct as much boom as possible as soon as you can.

Thank you for your leadership and your immediate attention to this crucial challenge.

Sincerely,

David Vitter
United States Senate

CC:
The Honorable Governor Bobby Jindal,
Honorable New Orleans Mayor Mitch Landrieu,
Plaquemines Parish, President Billy Nungesser,
St. Bernard Parish President Craig Tafaro,
St. Tammany Parish President Kevin Davis,
Terrebonne Parish President Michel Claudet,
Lafourche Parish President Charlotte Randolph,
Jefferson Parish President Steve Theriot,
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Senator BOXER. All right. If Senator could have it in writing, then we are all interested in that as well.

Senator Cardin.

Senator CARDIN. Well, let me again thank the three of you for being here.

Mr. McKay, I want to talk a little bit about BP's initial exploration plan. I say that because we understand the risks that are involved in any type of operation. But it is important that accurate information is made available about the potential risk, about the potential environmental damages, and the capacity to respond to that.

The plan that you submitted in part is used by the agency to determine whether the environmental waiver should be granted or not. So, Chairman Boxer read part of what was included in BP's initial exploration plan as related to our beaches. But let me just say, and we will relate it to water quality, and I am quoting from your report, it is unlikely that an accidental oil spill release would occur from the proposed activities. In the event of such accidental release, water quality would be temporarily affected by dissolved components and small droplets.

You then go on to talk about the fish habitat. In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry-wide standards for use of proven equipment and technology for such responses.

My question to you is, would you say that the risk assumptions regarding the impacts, I am not talking about the likelihood of the event but the impacts of such events, were accurate?

Mr. MCKAY. Obviously, in hindsight, it—we did not expect something of this magnitude and this impact, and the permit is what it said. It was unlikely. And I believe it was unlikely. But we have an unprecedented——

Senator CARDIN. There are two questions here. One is the likelihood of this event occurring, the second is the impact of such an event. And what I am trying to focus on, in the event this were to occur, do you believe that you accurately portrayed the impact to the environment of such an episode?

Mr. MCKAY. I am saying, based on the available data going into that, that was an accurate representation.

Senator CARDIN. And that is based upon, as I understand it, proven equipment and technology to deal with an episode.

Mr. MCKAY. Yes. That was predicated on spill response technology.

Senator CARDIN. And the proven equipment and technology, as I understand it, includes the blowout preventers. And it is because of blowout preventers being repeatedly described, the blowout of any oil spill as unlikely. And is it not accurate that industry touted these blowout preventers as failsafe?

Mr. MCKAY. We do consider the blowout preventers to be one of the last, you now, there are multiple barriers and the blowout preventer is an important and——

Senator CARDIN. Are they failsafe?

Mr. MCKAY. They are fail-closed is how they are supposed to operate.

Senator CARDIN. Yet MMS accident reports state that blowout preventers have failed or otherwise played a role in at least 14 accidents. Is that not correct? Most of them have occurred since 2005. A 2003 report by Transocean noted that poor BOP reliability as a common and very costly issue.

My question to you is, was it accurate to portray that the proven equipment would prevent this type of an environmental disaster? Was that accurate?

Mr. MCKAY. I believe given the data at the time it was accurate. Obviously, obviously, this is an unprecedented event, accident, and it is going to be reviewed in every way it can possibly be reviewed to understand what——

Senator CARDIN. I am losing your response here. I understand the risk issue. I am talking about the environmental damage. You rely upon the blowout issue that has been proven in the past not to work. I do not know how you could accurately portray to the regulatory agency the minimal risks in the event of a blowout.

Mr. MCKAY. All I can say is there have been 43,000 wells drilled in the Gulf of Mexico in the last 50 years. The data that goes into that recognizes some of the history in the Gulf of Mexico.

Senator CARDIN. One last question in my 42 seconds that remain. Was the report Friday accurate that MMS has granted another environmental exception for a Deepwater Horizon that will be 4,000 feet deep? That you are being given another environmental waiver?

Mr. MCKAY. You may be referring to the relief well for our crisis response here. I do not know. The Horizon is sunk, so I——

Senator CARDIN. Are you seeking further environmental waivers at this point?

Mr. MCKAY. The environmental—the way the environmental waivers work or the exclusions work, is that when the lease-sell was done, there was an EIS done, an environmental impact statement done at the lease-sale——

Senator CARDIN. My question was simple. Are you seeking further environmental waivers at this point?

Mr. MCKAY. We are seeking what would be an industry standard exclusion because that work has been done through the lease-sale and the grid environmental assessments prior.

Senator CARDIN. Thank you.

Senator BOXER. Here is where we are. There is a lot of interest, so I am going to have to ask you to stay, gentlemen, until we come back.

But we will have time for Senator Alexander, and then we will go vote, and then we will return with Senator Merkley, Senator Barrasso and Senator Carper. OK.

Senator ALEXANDER. Thanks, Madam Chair.

Mr. McKay, I heard an interview a few days ago by the Chief Executive of BP, and I believe he described the intricacy of this drilling as similar to open heart surgery at 5,000 feet. Is that correct? Is that an apt description?

Mr. MCKAY. The description was about using remote operated vehicles at 5,000 feet and doing connections and cutting hydraulic lines and rethreading things, yes.

Senator ALEXANDER. But that is a pretty good way to think about it? I mean, it is an intricate operation, and it would be like open heart surgery at 5,000 feet?

Mr. MCKAY. It is not a bad analogy for the work that was——

Senator ALEXANDER. If you had open heart surgery, would you want your doctor 5,000 feet away? I would not, either. I am wondering, even the most skilled physician, or the most skilled operator, would have to be very skilled to be always successful at 5,000 feet. Would there not be substantially less risk of an incident like this with drilling that was not in such deep water?

Mr. MCKAY. Let me just mention what we were doing. We were working on a piece of equipment that had failed. And we were working on a piece of equipment that had hoses that were leaking, and we were refurbishing and reworking those hoses. That was in response to trying to get that blowout preventer closed. So, that is not normal operation.

Senator ALEXANDER. Well, someone was drilling at 5,000 feet. Was that Mr. Newman?

Mr. MCKAY. We are the lease operator. Transocean drills the well, owns the blowout preventers——

Senator ALEXANDER. So, you were in—I mean, I think it is an apt description, the idea of being a mile away and drilling at 5,000 feet and being able then to deal with the intricate things that would have to be done that deep. It is quite a remarkable achievement.

But I wonder, as a matter of policy, if we would not be wise to consider whether, just as we might in medical policy, that we would ask doctors to get a little closer to their patients if they were going to perform such an intricate operation, should we not ask explorers for oil to get a little closer to the oil before they try to do these intricate operations? Would it not be better—is it a good idea to drill at these, 5,000 feet?

Mr. MCKAY. I think there have been over 3,000 wells drilled in deep water, and this is the first accident of this kind. So, we have got to—the really important thing here is to understand what happened so that it cannot happen again. I have confidence that we will understand that. I really do.

Senator ALEXANDER. How many wells are there in the Gulf of Mexico?

Mr. MCKAY. There have been over 42,000 wells drilled in the last 50 years in the Gulf of Mexico.

Senator ALEXANDER. And what percent of the United States' production of oil comes from the Gulf of Mexico today?

Mr. MCKAY. Between 25 and 30 percent.

Senator ALEXANDER. So, nearly one-third of all the oil that the United States produces today comes from the Gulf of Mexico. What would happen if we suddenly closed all that down? What would happen? What would the price of gasoline be in the United States?

Mr. MCKAY. I cannot predict what the price would be. It would——

Senator ALEXANDER. Would it not be much higher?

Mr. MCKAY. Less supply is not good for price.

Senator ALEXANDER. Yes. The Oil Pollution Act, I believe you said this, BP is the responsible party by legal definition. Correct?

Mr. MCKAY. We are a responsible party, yes.

Senator ALEXANDER. And that means that you pay all response costs associated with the accident, and that includes costs borne by the Federal Government, the State and local governments and those of any contractors that are legitimate. Is that correct?

Mr. MCKAY. That is correct.

Senator ALEXANDER. And in addition, liabilities, you might have another liability of up to $75 million on top of that.

Mr. MCKAY. We have said, in regards to the $75 million, we expect to exceed that, and that is effectively irrelevant.

Senator ALEXANDER. Yes. There is something called the Oil Spill Liability Trust Fund. What costs would the Oil Spill Liability, what is that, and what costs would the Oil Spill Liability Trust Fund pay in addition to the ones you just described?

Mr. MCKAY. That would be—I think that is in place for folks who cannot pay. So, we would not be accessing that.

Senator ALEXANDER. Thank you, Madam Chair.

Senator BOXER. Thank you, Senator.

So, we appreciate your patience. We are going to vote and come back and do another round of questioning, starting with, let me say it again, Senator Merkley, Barrasso and Carper will be the first three.

We stand adjourned until after the votes, and thank you very much.

[Recess.]

Senator BOXER. We are going to resume.

And I appreciate the opinions of the people in the audience. We have a policy in here of no signs, but I do appreciate your being here, and I welcome you to this hearing.

So, here is where we are. We are going to continue this, and start off with Senator Klobuchar.

Senator KLOBUCHAR. Thank you very much, Chairman Boxer.

Mr. McKay, after going to the site, and again, I appreciated the hard work that all of your employees are doing to try to stop this, but I was just struck as to why there was not a back up of any kind. And I know that in certain countries, like Norway and Brazil, they require precautions to avert a catastrophe. And this rig lacked a remote control shut off switch, a back-up system that could close the well.

Why was there not any kind of redundancy or back-up system beyond the blowout preventer?

Mr. MCKAY. There are multiple barriers—safety barriers—in a well. There are drilling fluids that will withstand and hold back the hydrostatic pressure. There are casing and cement jobs that are put in place to secure the well. There are well controlled procedures on a rig to deal with a kick, if it happens. Then there is a blowout preventer which is intended to be a fail-close device.

You mention Norway and Brazil, and I think you are referring to acoustic remote control, effectively. On this particular well—and perhaps Mr. Newman can help me if I say it wrong—we had the shut-down systems on the rig, there were three of them, three buttons to hit, let us say. And then there was something called a dead man's switch, so that, if it loses connectivity of the rig, it should

shut in and fail-close. And then there is manual intervention with the ROVs that were accessed and that did not work.

So, obviously we will need to look back at all this after we get through it. But I do not think the acoustic switch would have done—we had three switches on the blowout burner.

Senator KLOBUCHAR. And how many times have these, whatever, supposedly fail-safe blowout preventers proven effective? And what confidence do you have that a similar failure will not happen on another rig that is currently in operation?

Mr. MCKAY. They are used around the world, on every well, essentially, and they are very effective, and they are—it is very rare that anything goes wrong with them.

I would say what we are doing is—I really do believe that we are going to get to the bottom of what happened here. And the really important thing for us is to share with the MMS, any other Government agencies, and the rest of industry to try to understand what has happened here as quickly as we can, because what we are doing is some incremental testing.

And I know the—Secretary Salazar will be looking at what type of incremental testing or other procedures need to be put in place. But the learnings here are going to be really important in terms of what to do going forward.

Senator KLOBUCHAR. Well, that is for certain. And you know, one of the issues here is that we now learn from this. But the people from that area, and hopefully it will be limited to a certain area, are going to learn a lot more, and that is that they are going to have huge damage to their economy, huge damage to their livelihoods, to their environment.

And I know that you indicated that BP will absolutely be paying for the cleanup operation. How do you compensate the American people for lost tourism, lost tax revenue, lost fishing trips, lost endangered species, wildlife, critical habitat? Are you going to be able to compensate them?

Mr. MCKAY. Our statement and intent have been very clear from our CEO. We are going to pay all legitimate claims. I am as frustrated as anybody that we have got this happening. As I said, I am from the Gulf Coast. I understand the hardship that people are going through. We are going to be fair, responsive, expeditious, and do the right thing here. And we have been clear about that from the outset. And we can put blame and fault and everything off to the side. We are a responsible party, and we are acting that way. We intend to continue doing that.

Senator KLOBUCHAR. Well, we are going to hold you to this, clearly. And my concern, Minnesota is a long way away from the Gulf, but it is where the Mississippi River starts, and my concern—and I hope to God that this gets stemmed and one of these things you are trying out works. But we are very concerned about the damages.

Yesterday, USA Today reported that oil executives, including BP, argued against having the Mineral Management Agency adopt regulations that would require drillers to perform independent audits and hazard assessments designed to reduce accidents caused by human errors. One of the reasons for BP's opposition was that the new rules would have been too costly.

A week after this disaster in the Gulf, you announce record quarter profits of more than $6 billion. And I know that Senator Menendez mentioned the last year profits of what was $16 billion. Do you still think that stronger safety regulations, given the amount of damage we are facing, are too costly?

Mr. MCKAY. I am not familiar with us saying the regulations would be too costly. But what I do really believe is that, as we get through this incident, there will be a need to look at the regulations and how they work going forward. We have to—we must learn from this. This resource is so important to develop safely. We will learn from it. And I am confident we will figure out what has happened here and be safer for it.

Senator KLOBUCHAR. OK.

And again, just so you know, for the record, Chairman Boxer, I would like to put this USA Today article in the record because it does say they also said the new rules would have been too costly. That is from the newspaper article. I am sure there is some back up source for it. But if I could put this in the record?

Senator BOXER. Without objection. So ordered.

Senator KLOBUCHAR. OK, just to summarize. My time is up here. You are committed to paying for this. And again, I know that we will have—there will be disputes going forward about what that means, but it is a—that is a very important commitment. And second, that we are going to discuss stronger safety regulations obviously going forward and you are supportive of doing that.

Thank you very much.

[The referenced article follows:]

Oil companies had opposed stricter regulations
May 11, 2010
By Alan Levin, USA TODAY

The company that owns the offshore well spewing crude oil in the Gulf of Mexico and other major oil companies spearheaded a campaign to thwart a government plan to impose tighter regulations aimed at preventing similar disasters, according to government records.

Tighter regulations would have required that drillers perform independent audits and hazard assessments designed to reduce accidents caused by human errors, but the federal Minerals Management Service (MMS) has so far not imposed the rules in the face of near unanimous opposition from oil companies.

Oil executives — including BP, which leased the rig that exploded April 20 — argued that the industry had a solid environmental record and most companies had voluntarily adopted similar safeguards to protect against a major spill. They also said the new rules would have been too costly.

Since the spill, BP has changed its position on the MMS proposal, BP spokesman Andrew Gowers said. The company expects tighter safety rules and will not oppose them, he said.

Oil industry safety experts and environmentalists say the tougher regulations are needed and might even have prevented the spill threatening hundreds of miles of coastline.

The failure of the government to adopt measures demonstrates the chokehold that the companies have on federal regulators, who seldom impose rules in the face of intense opposition, the safety experts said.

"Whenever the oil industry sees some proposal they don't like, they kill it," said Richard Charter, senior policy adviser for marine programs at the environmental group Defenders of Wildlife. "They throw their money around."

The MMS is still considering the comments as it works toward a final rule, said spokeswoman Eileen Angelico. Interior Secretary Ken Salazar, whose department oversees the MMS, is also considering new safety standards in the wake of the spill, spokesman Matt Lee-Ashley said.

In its June 17 proposal, the MMS said that an extensive analysis showed that existing regulations do not address the most common causes of oil spills and serious accidents on deep-water platforms: human errors, poor communication and corporate failures. The MMS focuses instead on inspecting equipment, which rarely triggers spills, the agency said.

To attack such problems as human error, the proposal would have required companies to take dozens of steps to enhance safety in work rules, training and communication between different companies on the same job.

A who's who of the oil and gas industry wrote to oppose the proposed rule during a comment period. The government put the letters online.

Large companies such as BP, Chevron and ExxonMobil said they generally supported such programs but preferred that they be voluntary and more flexible. Some oil companies also said the measure would be more costly to the industry than the MMS estimated.

"We believe the industry's current safety and environmental statistics demonstrate that the voluntary programs ... continue to be very successful," wrote Richard Morrison, a vice president at BP America.

The industry is not flatly opposed to the safety measures, said Andy Radford, senior policy adviser for offshore issues at the American Petroleum Institute.

Senator BOXER. Thank you.

Senator Barrasso.

Senator BARRASSO. Thank you very much, Madam Chairman. I wanted to continue some of the questioning, Madam Chairman.

Specifically, Mr. McKay, when the explosion occurred, I am just trying to get into the response the plans. When the explosion occurred, did you have a plan in place, a specific plan in place to respond to this massive oil spill? And then specifically, was this a specific plan for this platform? Because the press seems to indicate that there was not such a plan.

Mr. MCKAY. We had a very specific plan that was authorized in terms of the Gulf of Mexico Spill Plan, June of last year, by the MMS. That plan was activated immediately. The first spill response portions of that were called in 2 hours after the explosion.

That has been the foundation for the response plan. And it has actually worked. And Admiral Allen would be the person to speak about it best, I think. But yes, we had a very detailed plan. And that is still continuing.

Senator BARRASSO. I think what I just heard you say is it has actually worked. And I do not—maybe you could be a little more explicit in that because I think most people looking at this do not think it worked. So, what you think of as a plan for response versus what really happened and where we are today.

Mr. MCKAY. Well, any sort of response plan is a model. You cannot—there is no way to predict the individual incident that may occur. The model worked in the sense that resources were known where they were, organizations were known how to react, the resources were put together, boom disbursements, skimmers, in-situ burning, pre-approved priorities, pre-approved dispersants, area contingency plans in the States were activated.

You know, the plan is about a document this thick, and the plan has been exercised. Of course, it is being flexed and moved and made more robust in certain areas, but the foundation of this was in place.

Senator BARRASSO. Looking at the Financial Times, it says a spreading stain, BP oil spill, the impact of the fatal Gulf of Mexico explosion will go beyond the damage to the environment. And I am trying to get an assessment of what we knew about the spill and at what point.

It says the first estimate was still deceptively reassuring, suggesting that the leak was just 1,000 barrels a day. And that was the date. And then 8 days later, April 28th, more than a week after the accident, the U.S. Coast Guard said it believed that the flow was five times greater than previously thought, now at 5,000 barrels per day.

At what point did you realize that a massive spill was occurring, at that level?

Mr. MCKAY. Well, the volume estimates are based on, effectively, surface expression because you cannot measure what is coming out at the seabed. So, this is based on NOAA models and Coast Guard, NOAA and BP estimates, effectively from surface information, over-flights and things like that, and then backed into in terms of the volume. So, there is no certainty around that number. There

is a large uncertainty band at 1,000, there is an uncertainty band around a 5,000. It is the best estimate currently.

Senator BARRASSO. I want to ask the three of you about chemical dispersants, if you have experience in that area of expertise. I believe they are effective tools in containing oil spills. They are being used now, I think, intermittently, at the source of the leak.

There have been some concerns that using them at this depth has not been tested. Has this worked well? Should we continue to use dispersants aggressively? And I will ask all three of you, if you feel comfortable addressing it.

Mr. MCKAY. Dispersants have been very effective on this particular oil. It is a very light oil and they have been effective. The subsea dispersant, there have been three tests. They have looked promising. We had a 24-hour test, it ended at 4:40 this morning, or yesterday morning, I cannot remember. We would like to continue injection.

I believe the EPA—I do not know the status, but I believe the EPA is looking to extend that injection status and allow us to continue. We think there are two benefits. One, we get it on the oil immediately. Second, we think that it has the ability to utilize less dispersant per effected volume of oil.

Senator BARRASSO. Mr. Newman, any experience with that?

Mr. NEWMAN. We do not have any relevant experience or expertise with respect to dispersants.

Senator BARRASSO. OK.

Mr. Probert.

Mr. PROBERT. No relevant information regarding dispersants either.

Senator BARRASSO. Thank you, Madam Chairman.

Senator BOXER. Thank you.

Just so everybody knows, I am making sure everybody gets a first round, and then we are going to do a second round. So, it will be Senator Udall, and if no Republican shows up, it will be Senator Carper, and then we will go to, I guess, me, and then Senator Lautenberg. Is that all right? Or I can give my time to you, Senator, if you need.

Senator LAUTENBERG. [Off microphone.]

Senator BOXER. If you need my time, I am happy to yield it to you because I can be here. It is fine. OK?

Senator LAUTENBERG. OK.

Senator BOXER. OK. So let us go, Senator.

Senator UDALL. Thank you. Thank you, Madam Chair.

I would like to focus in on the, what I call the cementing dispute. Mr. Newman's testimony states that "the one thing we know with certainty is that on the evening of April 20th there was a sudden catastrophic failure of the cement, the casing, or both." And then Mr. Probert's testimony states, "Prior to that point, when Halliburton personnel would have set the final cement plug, the catastrophic incident occurred. As a result, the final cement plug was never set."

Mr. McKay, the Wall Street Journal reported today that BP asked permission from the MMS to remove the mud before finally plugging the well, and after the mud was taken out, the blowout occurred. The article quotes petroleum engineering experts that

this procedure was unusual. So, the Wall Street covered this. They checked with petroleum engineers. A very simple question. Is this procedure unusual?

Mr. MCKAY. I have not read the cementing procedures, so I cannot answer whether that particular procedure is unusual. It is not unusual to displace certain weight fluids with other fluids. I do not know in this case. It will, obviously, be a part of the investigation that is live right now, to see if that procedure is valid and whether decisions made around that procedure were valid.

Senator UDALL. But I still want to try to get you to answer the very, very simple question because you set the final cement plug, and then you take the mud out. And the understanding is, and what they are saying is unusual, is that it happened the other way around. You asked permission to take it out before the final cement plug was set. Is that unusual? You have petroleum engineering experts. You probably have the best ones in the world. Is it unusual?

Mr. MCKAY. I am actually a petroleum engineer. I cannot say in this case whether it is unusual or not. I have not reviewed that procedure.

Senator UDALL. You do not, there is not a standard in the practice for doing it this way?

Mr. MCKAY. There are various ways to do cementing procedures in terms of setting plugs before you leave a well. So, I have not had a review of that.

Senator UDALL. And you would not call it unusual to take the mud out first before you put the final cement plug in?

Mr. MCKAY. I do not know enough right now to call it usual or unusual in this situation.

Senator UDALL. Mr. Newman, do you have an answer to the question, you know, is this an unusual procedure?

Mr. NEWMAN. Senator, as part of the well abandonment process, two things have to happen. A cement plug has to be placed into the casing, and the mud has to be displaced from the riser. I do not have any basis on which to characterize the particular order of those two steps as either usual or unusual. They both have to happen.

Senator UDALL. And what order does it normally happen in? Normally, you do put the plug in place, and then the mud is removed. Is that not the case?

Mr. NEWMAN. As I said, I do not have any basis for characterizing it as normal or abnormal. Both things have to happen and——

Senator UDALL. They do not happen in any order, in any particular order?

Mr. NEWMAN. I am not aware of any drivers that would dictate in which particular order those two operations were, are performed in. Both of them have to happen as part of the abandonment process.

Senator UDALL. And there is no standard in the industry for this, for this kind of procedure and this kind of cementing? How you would normally do it.

Mr. NEWMAN. I do not believe that there is a dictated standard for the order in which those two steps are performed.

Senator UDALL. Mr. Probert, do you have an answer to the question? The very simple question is, is this an unusual procedure?

Mr. PROBERT. I do not believe that it was an unusual procedure. It, the well——

Senator UDALL. You do not believe it was an unusual procedure?

Mr. PROBERT. I do not believe that it was an unusual procedure.

Senator UDALL. OK.

Mr. PROBERT. The process that was undertaken was consistent with the well plan, which was established. And to the best of our knowledge at least, this process and this order has been performed previously in the Gulf of Mexico.

Senator UDALL. The same order that occurred on the well that blew out?

Mr. PROBERT. Correct.

Senator UDALL. Yes. And without any problem?

Mr. PROBERT. To the best of my knowledge, that would be correct, yes.

Senator UDALL. Now, the MMS and the industry have been developing standards for well cementing for several years, but they have not become final. Do these standards allow for removing the mud before the final cement plug?

Mr. PROBERT. There are two sets of recommended practices which were developed by the MMS and API. The first set was released, in fact, about 2 years ago. The second set is still under discussion with industry experts, the API and the MMS. But I am afraid I cannot comment specifically on what the content of those may be.

Senator UDALL. OK, I will come back on the second round.

Thank you, Madam Chairman.

Senator BOXER. Yes, you certainly can.

Senator Carper followed by Senator Lautenberg.

Senator CARPER. Good. Gentlemen, thank you for joining us today and your responses to our questions. I have a short comment and then a question, if I could, and this would be for, again for you, Mr. McKay.

One of the concerns that I have is that the American people might somehow be left at the inn paying for this disaster. We talked a little bit about that already today. But I think in your testimony you said that BP is committed to paying legitimate claims.

Last week your colleague, the CEO of BP, is it Tony Hayward? Yes. Mr. Hayward was asked whether the company expected to pay, to spend money beyond the $75 million liability limit that is set by a law. Mr. Hayward said, I believe, that the cap was largely irrelevant and that all legitimate claims would be honored.

It is my understanding, however, that under current law that any amount that BP spends over that $75 million is eligible for reimbursement from the Federal Government's Oil Spill Liability Trust Fund, and if we exhaust the Trust Fund, then any additional funds will have to come from the U.S. Treasury. Some would say, in effect, you have every incentive to pay over your liability cap because under current law you will not have to bear any of that additional cost. However, you could receive a fair amount of credit even without paying that cost.

If citizens are receiving checks in letters from BP, they will have, they may have no idea that the Federal Government actually will be footing the bill at the end of the day. The American people, I do not think, should be left subsidizing that kind of effort, if there is such an effort.

Today I am asking the General Accountability Office to examine how the Federal Government is protecting against fraudulent claims to the Oil Spill Liability Trust Fund. In addition, I am asking them to analyze BP's claims review process to try to make sure that it is rigorous enough to protect the Trust Fund and the American people.

That leads me to a question. And the question is this. And again, this is for you, Mr. McKay. Could you just comment on how stringent BP's claims process actually is? And finally, can the Federal Government expect an invoice from BP sometime, maybe next year, if you do actually exceed that $75 million liability cap?

So, two parts. Can you talk to us about the rigor of the evaluation process for going over claims, and second, if the cost runs over the $75 million liability cap, can the Federal Government expect a request for picking that up, picking up the tab?

Mr. MCKAY. The claims process is designed to be very responsive and expeditious. The claims that are happening right now are mostly fisherman and folks who are impacted directly by loss of work right now. And those are being paid as fast as we can possibly pay them, on the spot, effectively, if they have got some substantiation for, you know, this amount of work over this amount of time.

Senator CARPER. You said some substantiation. Will you just drill down on that for just a minute, please?

Mr. MCKAY. I'm sorry?

Senator CARPER. Could we just drill down on that term some substantiation, please?

Mr. MCKAY. What I am saying is, we are paying people that say they are working, they cannot work because of this impact, and they can say, here is where I work or here is what I do. And we are being very, very aggressive and responsive about this.

The—we have been very clear, and you are exactly right. Tony Hayward has said, we are going to pay all claims that are legitimate. We are, just so you know, just to be exceptionally clear, we have said the $75 million is irrelevant. And we have said we are not going to access the $1.6 billion Fund.

So, the bill to the Federal Government, no. And we are a responsible party in this. We plan on living up to that. And that means paying for the clean up and all the operations that are occurring as well as the legitimate claims that are, because of the impact of this. And we have been very clear about that.

The claims process is, right now, at the very front line of people being directly affected right now. It could affect tourism, it could affect hotels, those kinds of things. And the claims process is set up to evaluate those as quickly as possible. You know, income statements from last year, occupancy rates, those kinds of things, to help understand the quantification of the damages.

There is also the Natural Resource Damage Assessment Study that is going on with NOAA, that we are paying for, which will

help to understand the injuries to resources, natural resources in the area, the restoration of those and the costs to do that.

Senator CARPER. All right. Those are the questions I had. Those are the answers I was hoping for. Thank you.

[The prepared statement of Senator Carper follows:]

STATEMENT OF HON. THOMAS R. CARPER,
U.S. SENATOR FROM THE STATE OF DELAWARE

I want to thank the Chairman for holding this hearing. My heart goes out to the folks impacted by this accident in the Gulf—to the families of the workers that were injured or died and to the fishermen that may lose everything.

Before the accident in the Gulf, I had been open to limited expansion of offshore drilling as part of comprehensive energy and climate legislation as long as:

- One—drilling could be done in an environmentally sensitive manner, and
- Two—States and neighboring States had a say if drilling occurred near their shores.

Unfortunately, the devastating spill in the Gulf has raised serious questions in my mind about our ability to safely drill offshore.

I support the Administration's decision to pause any new offshore drilling efforts until the Administration and Congress can investigate this incident fully.

I am also interested in hearing more about President Obama's proposal to split the agency that oversees offshore oil drilling into two agencies—one that enforces safety, and one that oversees leases.

We need to put a stop to the leak, clean up the spill, find out what happened, and decide what new safeguards need to be put into place to prevent this type of disaster before we move forward.

From today's hearing, I want to know why more layers of safety procedures were not in place to protect from failure.

I want to know what incentives are needed to change the oil industry's culture into a safety culture.

I also want to ensure any claims made out of the Oil Spill Liability Trust Fund aren't fraudulent or abusive—and if this Committee needs to revisit the liability caps we put into place 20 years ago.

The accident in the Gulf has shown me that our dependence on fossil fuels is much more costly than we ever anticipated.

Senator BOXER. Thank you.

Senator Lautenberg.

Senator LAUTENBERG. Madam Chairman, thank you very much.

I wanted to just get a couple of things squared away. And I ask whether or not, can anyone, all three of you, can you separately guarantee that a spill like this will never happen again in U.S. waters on your watch?

Mr. McKay.

Mr. MCKAY. I cannot guarantee that.

Senator LAUTENBERG. Mr. Newman.

Mr. NEWMAN. Senator, we will work very hard to understand what happened this time around, and we will implement whatever recommendations come out of that analysis such that this does not happen again.

Senator LAUTENBERG. So, that you, you cannot guarantee it now, that it will not happen again?

Mr. NEWMAN. I cannot guarantee it.

Senator LAUTENBERG. Mr. Probert.

Mr. PROBERT. I think, as others have said, we will work very, very hard. We will learn from this incident. We will continue to improve our processes and practices. But I am afraid that, with the best will in the world, I do not think any individual could guarantee that we will not see another oil spill as a result of drilling activity.

Senator LAUTENBERG. This, in all fairness, confirms our concerns about deep water drilling off the coasts. Because with it comes an automatic understanding. Pay attention. We are going to do our best to get a product that can be used by the American people, but there is significant risk associated with it. We cannot guarantee, we will not guarantee, the fact that we cannot see something like this happen again.

Mr. McKay, in the plan you filed with the Federal Government for Deepwater Horizon, you outlined a worse case scenario for a blow out of 162,000 gallons of oil spilling a day. But the spill now exceeds 200,000 gallons each day according to the Government and the Wall Street Journal. It has reported estimates higher than possibly 1 million gallons a day.

Now, did you deliberately moderate the worse case scenario, or is it just impossible to predict the consequences of a rig blow out?

Mr. MCKAY. I believe that permit was 162,000 barrels a day was the worse case scenario, and I believe that was the application.

Senator LAUTENBERG. Is that true? I am asking you. That, I am asking myself, because if that is the case, then I apologize for that error.

Mr. Probert, this is the second time in the past year that there has been a major blow out and a spill on an oil rig where Halliburton was responsible for the cementing. You, in your testimony, repeatedly pointed to the well owner and said Halliburton did everything according to their specifications.

Now, that suggests that BP's specifications called for cementing to be done that would cause its half-billion dollar rig to explode and collapse. And you had no choice but to follow those specifications, is that correct?

Mr. PROBERT. Oil rigs do not explode as a result of a failure of a cement job. What I said in my testimony I will stand by, which is that Halliburton executed its cement job consistent with the design which was agreed with the well owner. And I think we are still struggling to understand, as we have told you several times, that we still have data to collect to really be able, to be in a position to assess exactly what did take place on April 20th so that, collectively, the industry can put the steps in place to make sure that it never happens again.

Senator LAUTENBERG. Mr. McKay, your company says that BP stands for Beyond Petroleum. Yet, BP's investments in clean energy have recently declined, and they are dwarfed by its investments in fossil fuels. And I have mentioned before the good fortune that you have had, or the good skills that your company has had, to increase your earnings by over $3 billion in a quarter. It is shocking and wonderful, I say with some envy.

But I look at what the American public is paying for those profits. This spill has shown the true costs of depending on oil to meet our transportation needs. Does this spill not show a more urgent need for big investments in clean alternatives to oil?

Mr. MCKAY. We are investing quite a bit in alternative energy. We have committed to do $8 billion over 10 years, and we are on track to do that. We have concentrated, in the last year and a half, on investments in the United States on wind, solar and biofuels and carbon capture. And those businesses are growing.

Senator LAUTENBERG. How about the—has there been any decline in investments in other sources of energy besides oil?

Mr. MCKAY. Our investments in alternative energy probably declined a little bit last year but the economy dropped so horrifically that a lot of our partners could not fund, so the projects were delayed. But the intent has not changed.

Senator LAUTENBERG. OK, it was wonderful that your company was able to grow by $3 billion in a quarter. That is quite fantastic when things are in the kind of condition that they are in our economy and in our world.

Thank you.

Senator BOXER. Thank you, Senator.

Since the relief well cannot be built for 90 days; is it 90 days you figure? Or more? How much oil do you estimate will spill between now and 90 days if, God forbid, we have not figured out another way to go to cap this well?

Mr. MCKAY. Well, assuming that the rate is 5,000 barrels a day, that would be——

Senator BOXER. Give me a number please, if you could do the math for me.

Mr. MCKAY. That would be 450,000 barrels.

Senator BOXER. 450,000 barrels would spill before you do the relief well?

Mr. MCKAY. We, we are drilling, we are drilling two relief wells.

Senator BOXER. Right.

Mr. MCKAY. It will take—it will take about 90 days to get to the 18,000-foot level to be able to kill this well.

Senator BOXER. Well, I just want to go back to Senator Lautenberg's question. It was a pretty clear question. What can you say about other spills like this? He did not just say other spills. He said like this. And all of you said, it was almost the most discouraging thing I ever heard, we cannot promise anything.

How much are you spending, Mr. McKay, on finding new ways to respond to oil spills? In other words, you said you are spending $8 billion over 10 years for clean energy. By the way, that does not rack up very well with the fact that you, that your profit was $5 billion in the quarter, just in one quarter. And you are spending $8 billion over 10 years. That is obviously your decision. But I am asking you, how much are you spending on new ways to respond to oil spills?

Mr. MCKAY. Well, we are spending a lot of money right now understanding how to handle this and——

Senator BOXER. Yes, I know. But what are you spending to try to come up with new ways to handle oil spills?

Mr. MCKAY. Other than what we are doing right now, I cannot give you a number.

Senator BOXER. OK. Well, how would you describe your safety record as a company, BP?

Mr. MCKAY. In 2005 we had an accident at Texas City which was horrific. To give you a little background, I know we need to go quickly, that changed the foundation of the company. Leadership has been changed up and down the chain. Tony Hayward has come in. The company has been—in effect the core of the company is being re-founded on safety and operational excellence. I think a lot

of progress has been made. Our safety record in the Gulf of Mexico has been very, very good prior to this incident.

Senator BOXER. So, how would you describe your safety record as a whole?

Mr. MCKAY. In terms of statistics, it is according to what measure you want to use. But it is within the bandwidth of all the super majors.

Senator BOXER. OK. I am going to put in the record this article from May 8, 2010, for BP a history of spills and safety lapses.

[The referenced information was not received at time of print.]

Senator BOXER. And I am going to ask you a few questions about this and how you could say that, you seem satisfied. You are not satisfied?

Mr. MCKAY. I am never satisfied.

Senator BOXER. So, you are not satisfied with the safety record even though you say it is no worse than your counterparts?

Mr. MCKAY. I thought you were asking me to try to quantify in some ways.

Senator BOXER. I was just asking a human question, you know, in other words, how do you feel? Well, I feel pretty good today, you know.

Mr. MCKAY. No, I do not feel good at all today.

Senator BOXER. No, I do not mean that. I am saying, I am asking you a conversational question.

Mr. MCKAY. No——

Senator BOXER. I am not in a court of law. I am just asking you to describe your safety record. Well, let me be specific because I am going to ask you about a few things.

In February 2010, 19 members of the House sent a letter to the Mineral Management Service questioning BP's safety practices on its Atlantis platform in the Gulf of Mexico. The letter asks MMS to describe actions it will take in response to allegations by an oil industry whistle blower and a Houston-based oil industry safety expert that BP has skipped necessary engineering inspections and provided inaccurate engineering documents to the rig operator. These documents are critical to the safe operation of the oil rig. And that is a letter, February 2010.

In October 2007, BP pled guilty to a criminal violation of the Clean Water Act, paid $12 million in fines as well as $8 million to address natural resources damages for oil spills that occurred in the North Slope of Alaska due to poor maintenance of a severely corroded pipeline. Also in October 2007, BP pled guilty to a felony and paid $50 million in fines for its actions in a 2005 Texas refinery explosion that killed 15 people and injured 170 more.

In October 2009 the U.S. Department of Labor's Occupational Safety and Health Administration, OSHA, issued $87 million in proposed penalties to BP for the company's failure to correct potential hazards faced by employees as outlined in a settlement agreement BP entered with OSHA following the 2005 Texas refinery incident that you referred to. The fine is the largest in OSHA's history. The prior largest total penalty, $21 million, was issued in 2005. And then are other reports that there were multiple smaller fines.

Here is what is very concerning to me. None of you can give us assurances that something like this cannot happen again. Your statements to the MMS when you were making the case for quick approval of this particular project stated, very clearly, that even if there was a blowout, you use those words, there would be no problem because of the technology, the cleanup technology that you have.

All of this, I have to tell you, is falling like a house of cards. There is just nothing there underneath your statements. If you look at your record, and you look at your statements, and you look at what is happening, it is very, very disturbing.

Do you feel that we ought to now have a reform where we separate out the safety inspections from the permitting process? In other words, right now the permits are issued, and the safety inspections and everything, the EIRs, are all being done by MMS. Do you think we should separate out the functions so MMS deals with the mineral extraction and works with you on that, but there is an independent body that looks at your safety record and what you would do in the case of a spill? Would you support that type of reform?

Mr. MCKAY. I would support working with any Government agency to make sure that this business gets safer based on what we learn here.

Senator BOXER. So, you would not oppose that proposal?

Mr. MCKAY. I would not oppose anything that comes out of this and makes this operation safer than before.

Senator BOXER. Good.

Do you feel the same way, Mr. Newman?

Mr. NEWMAN. I would be supportive of continuing to work with the Administration and Congress, understanding what may come out of this investigation, and implementing any recommendations that will improve the safety of our business.

Senator BOXER. And you, Mr. Probert?

Mr. PROBERT. I think the industry has worked very hard on its safety over the course of the last decade or so, which is one of the reasons that it makes this incident such a tragic and be disappointing. But certainly, our company would definitely support anything that we can do to create a safer environment to operate in in the exploitation of oil and gas.

Senator BOXER. All right.

Senator Udall, do you have another round?

Senator UDALL. Yes.

Senator BOXER. Go ahead.

Senator UDALL. Thank you, Madam Chair.

I am having a hard time on this cementing issue with the answers that are out there. Can you all tell me, did you, each of you, just answer yes or no, did you read this Wall Street Journal article that I am reading here?

Mr. MCKAY. No.

Senator UDALL. The one from today, right? It is a front page story in the Wall Street Journal, and I think the headline is something along the line of two oil firms tie rig blast to plug. Front page 1 of the Wall Street Journal, in today's Wall Street Journal. Did you read it, Mr. McKay?

Mr. MCKAY. No.
Senator UDALL. Mr. Newman.
Mr. NEWMAN. Yes, Senator, I did read the article.
Senator UDALL. OK.
And Mr. Probert.
Mr. PROBERT. Yes.
Senator UDALL. Yes. So, two of you read it. Can you tell me, is there anything in that article that you disagree with strongly, that is just flat wrong?
Mr. PROBERT. I would need to go back and read that article again to make sure that I assessed all the facts or non-facts in it, as the case may be, to give you an accurate response.
Senator UDALL. But there is nothing that hits you right now in terms of that, you read it sometime today——
Mr. PROBERT. I think there were certainly some things in that article which would need to be questioned, yes.
Senator UDALL. Well, I would like you, in your supplement to the questioning to the Committee to, we will submit question along that line.
Mr. PROBERT. I would be very happy to provide a response.
Senator UDALL. Yes. Thank you.
Mr. Newman.
Mr. NEWMAN. Our understanding——
Senator UDALL. Same question about disagreeing.
Mr. NEWMAN. Our understanding—it has been a busy day, Senator, I do not recall, when I read the article, I do not recall reacting strongly negatively to anything that was written in the article. But I would like to go back and reread the article and refresh my memory.
Senator UDALL. OK. Well, then I will submit additional questions and we will make that a part of the record.
Mr. McKay, did your well plan call for removing the mud before capping the well?
Mr. MCKAY. As I said earlier, I have not had a chance to review the well plan or the procedure of that particular well.
Senator UDALL. And Mr. Newman, do you know what was provided in the well plan as far as removing the mud before capping the well?
Mr. NEWMAN. Senator, I have not seen BP's well plan for this well.
Senator UDALL. And Mr. McKay, did you have to ask MMS for permission to follow this procedure that we are talking about, and if you did, why did you do that?
Mr. MCKAY. I am sorry, I have not read that procedure, and I do not know what we filed, or if it is a procedure, I would imagine that MMS has looked at it. But I am not sure.
Senator UDALL. But you do know whether or not you asked permission to do it in the way that you did?
Mr. MCKAY. I am sorry; I do not know.
Senator UDALL. OK. OK.
Mr. Probert, I am asking now about Halliburton's cement job in the Australian blowout. In what sequence did your company remove the mud in the Australian accident? Before or after the final cement plug?

Mr. PROBERT. A final cement plug, in this particular case, was never installed by the well owner.

Senator UDALL. It was never installed?

Mr. PROBERT. No.

Senator UDALL. And so the blowout took place before the final cement plug?

Mr. PROBERT. The blowout actually took place some 5 months after the well had been left without either blowout preventer or without well cap, at least according to the testimony which I have been able to read from the inquiry.

Senator UDALL. Now, Mr. McKay, I have heard that standards for well cementing are still under discussion by the American Petroleum Institute and the MMS. Who does most of the technical work? The America Petroleum Institute or the MMS?

Mr. MCKAY. I am not familiar with the way standards are set between the—in terms of the division of work and the technical work.

Senator UDALL. And my understanding at this point, the reason we are not able to ask about what is in the standard is the process is not public at this point. There is not a public vetting of these standards that are out there right now. At some point it will be public, but there has been a lot of work between MMS, your industry, and the American Petroleum Institute in coming up with standards that deal with the cementing. Is that correct?

Mr. MCKAY. I am sorry, I am just not familiar with the cement standards that are being set by API or MMS or the industry, to be honest.

Senator UDALL. OK. OK.

Mr. PROBERT. Senator, if I could just add something to that.

Senator UDALL. Yes, please, please, Mr. Probert.

Mr. PROBERT. These proposals are not standards. They are recommended practices.

Senator UDALL. Recommended practices.

Mr. PROBERT. There is a set which was issued approximately 2 years ago. There is another set which is under development right now and seeking input from appropriate parties which would be API, MMS and industry experts to continue to improve those processes through time.

Senator UDALL. Mr. Probert, in the ones that were set a couple of years ago, in those standards, and speaking specifically, I am asking specifically about the plug and the order of removing the mud, and this I have talked about earlier, is there a consistent standard in the industry for doing it a particular way?

Mr. PROBERT. I am afraid that I would have to probably defer to one of our cementing experts to review that data, which we would be very happy to do for you based on the recommended practices. But I am afraid I do not personally have knowledge of that directly.

Senator UDALL. Yes. But it sounds like there is a standard out there that deals with this particular issue.

Mr. PROBERT. I am afraid that I am not sure of that. But we can certainly respond to the recommended practices. RP65–1 is the document which we would refer to.

Senator UDALL. And can you answer the question that I asked, Mr. McKay? Is the bulk of the work that is done at this point on

a new standard, you are saying there was a set 2 years ago, we are going through a new standard, is the bulk of the work between API and MMS and not a public process at this point?

Mr. PROBERT. I am sorry. I did not quite understand your question. Did you say it is a public process?

Senator UDALL. It is not a public process at this point. It is not. It is not.

Mr. PROBERT. It is, I mean, at the well, we describe the recommended practices that have been circulated for comment amongst industry experts from a variety of agencies and interests.

Senator UDALL. OK.

Thank you for your courtesies, Madam Chair. Thank you.

Senator BOXER. Senator, you will be happy to know I am going to ask a round of questions about the cementing, picking up on your interest on this.

I will do the last questioning, you will be happy to know. And I know it has been a long and exhausting day for you, and I appreciate your sticking with this.

What I think my colleague is trying to do, as best we can, is, he is asking if there could be a connection between the lack of the plug and the explosion.

Mr. Probert, do you have any opinion on that?

Mr. PROBERT. Well, we have discussed the concept of barriers, and clearly it is always good, it is always required to have multiple barriers in place to protect the integrity of the well bore. And the final cement plug would have been the final barrier that would have been placed in the production casing prior to disconnecting the BOP which was, of course, in itself a barrier.

Senator BOXER. The blowout preventer?

Mr. PROBERT. The BOP or blowout preventer, yes.

Senator BOXER. Well, let me just say this, Senator. In 2007, an MMS study examined 39 blowouts over 14 years. They found that cementing was a contributing factor in 18 of those incidents. In addition, cementing has been suggested as a contributing element to the Montara spill in the Timor Sea off of Australia's coast which, as I understand it, Halliburton was also involved in.

Mr. Probert, what did you learn from the Halliburton, from the Australian disaster in terms of safety and effectiveness of cementing jobs on offshore oil rigs? What did you learn from that?

Mr. PROBERT. Well, first of all, if I could just comment to the MMS study. Of the 18 blowouts which were, of the 39, which had cementing as a factor in the blowout process, only one of those occurred in water depths greater than 400 feet. And therefore, by definition, the majority of those, all except one in fact, occurred in shallow water and primarily as a result of shallow gas and salt water flows, which has long been an issue in the Gulf of Mexico shelf operations.

Senator BOXER. So, are you suggesting from that, by drawing this distinction, that it is more dangerous to do this in deeper water?

Mr. PROBERT. No, I am saying the opposite. That in fact the record of the industry in deeper water is significantly improved over shallow water operations which are subject to shallow water gases——

Senator BOXER. But you agree that in 18 of 39 blowouts over 14 years, cement was a factor? You have agreed on that. So, what have you learned from the Australian disaster?

Mr. PROBERT. Well, first let me comment. We have certainly learned from the experience from the MMS study which was focused, obviously, on the Gulf of Mexico. And though cement was a factor, there were a variety of activities that——

Senator BOXER. Well, I am asking about Australia, if I might get you back to that.

Mr. PROBERT. OK. All right. With respect to Australia, I really think we are going to have to wait until the Commission provides its findings on that particular——

Senator BOXER. And when do you expect they will be finished?

Mr. PROBERT. To the best of my knowledge, I think the testimony was collected in the last week or so, and some of that information is public, and the findings will be released, one would hope——

Senator BOXER. And this is a commission in Australia? Is this a commission in Australia?

Mr. PROBERT. This is a commission in Australia, yes.

Senator BOXER. OK. Well, we will follow that.

Mr. McKay, residents across the Gulf Coast will be significantly impacted by this spill. And we know this. All of us agree. Commercial and recreational fisherman could be out of work for months, be forced to deal with fisheries for years. Hotel and restaurant owners and others dependent on tourism could see dramatic losses. We are hoping to mitigate that. We all agree that that is our prime intent.

We have already heard concerns from local residents that the process for responding to claims and providing information to effected entities has left local business owners with lots of unanswered questions.

Given the severe economic impacts that this may bring about, what is BP doing to ensure that information is provided in a timely and accurate way and that claims are processed as expeditiously as possible? And will you commit to immediately monitor the effectiveness of the claims process and take corrective action when problems arise?

Mr. MCKAY. We are very intent on being responsive and expeditious with this. We are expanding the claims centers across the Gulf Coast. I think we have got, I think it is eight right now. We have got 21 community outreach centers by this weekend.

So, we are expanding the network, so to speak. The process is getting smoother. You know, it started in Louisiana, and it has been moving across over to Florida. So, I think there are some growing pains, to be honest, but we are working those out.

Senator BOXER. OK. So, this is my last question. It seems to us that the oil industry is truly in uncharted territory as it pushes the limits of drilling technology. When I asked you the question, what do you spend on finding better ways to react to a spill, you basically shrugged your shoulders and really did not have an answer for me.

So, it does not appear that the safety and response technology has caught up with your zeal, the industry's zeal, to move forward in these new leases, even when they have not drilled the leases they have owned for a long time.

It is really leaving great uncertainty with all of us. And it is a reason why a lot of us do feel, not all of us, that we have got to move to clean energy here. I mean, we have got to move to clean energy. I do not want my grandkids, when they are adults, dealing with the effects of people dying on a rig like this or in a mining accident. We have got to transition away from this.

And it seems to me very important that we immediately put into place more oversight over what you are doing. And I was glad that you said that, at least I took from what you said, you are a little lawyer-like in answering it, but I took from what you said that you would support efforts for stronger safety oversight.

So, I am going to be a little more specific in my question. In light of the recent oil spill and the rapidly changing drilling technologies, I know we believe we have to do anything we can to avoid another catastrophe. Right now, you cannot promise us that. You said that. You cannot promise us that.

So, given that you cannot promise us this, and I am sitting here from California that has a $20 billion-plus recreation, tourism and fishing industry and a magnificent coastline that needs to be preserved because of its beauty but also because of its economic contribution that it makes and its beauty to our State, I would be derelict in my responsibility if I did not work to increase Federal oversight and give more opportunity for the public to come out and express themselves through laws like the National Environmental Policy Act to help ensure that all aspects of a project receive the evaluation that is necessary.

I cannot rest. When I look back, Mr. McKay, and you are a very nice man, but I look back to what your company said to the MMS, no problem, just give us an expedited answer here even if a blowout occurs we can handle it, it is all going to be fine, and then this. When this happens, you say, my goodness, we are not prepared.

So, I am going to ask unanimous consent that the statement of the U.S. Travel Association, which represents a broad range of travel industry companies, such as local visitor bureaus and members of the hospitality industry, be made part of the record. They are keenly interested in the impact of this spill on tourism, and I want their views to be included here.

And it gets to my final question, which is, would you support, in your future endeavors as you move forward with more of these requests, going through the NEPA process, the entire NEPA process, and allowing the public comment, and no longer asking for expedited process when so much is at stake?

Mr. McKay, would you reform the way you have done this? You do not have a good safety record. I hate to tell you this. I read a lot of it out loud. You promised nothing like this would ever happen. You honestly did. And it has happened now.

And I am asking you, would you support making sure that when you come to, frankly, the U.S. Government, and you want to lease taxpayer owned leases, that you will allow, not only allow but support, the full NEPA process to take place?

Mr. MCKAY. We will support and conform to any regulations that we need to. The NEPA process I believe you are talking about, the way it works now is that an environmental impact statement is done with the lease-sale, and then environmental assessments are

done by grid within that, and the well sits within those. So, in effect what we are doing is utilizing the environmental assessments that have already been done. And if there needs to be another regulation or do it differently, obviously we will do that.

Senator BOXER. Well, my understanding is, but we will get back to you on this, that it is not automatic that a full-blown environmental impact statement is made and that you asked not to have that done and you asked for exemptions.

And what I am trying to get at is this. Given what has occurred here, I will not ask you this question today, I will ask you to think about it tonight, and given your safety record, which is not good, that you consider a whole new approach here, which is when you want to go into an area like this that has all of these fragile ecosystems and all this tourism and travel and recreation industry that depends on a beautiful area, that you will not ask to be exempted, that you will not make these promises which you made and now you cannot make anymore.

Will you consider the full-blown environmental process when you come back and ask for another well like this?

Mr. MCKAY. We will consider anything that would make this safer——

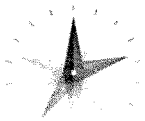
Senator BOXER. Good.

Mr. MCKAY. And we will utilize the environmental processes that we need to make sure it meets what we need to do. I know you do not want to go into it, but I think these environmental processes are in place and done by the MMS when the lease-sale is done and after that by grid, that we then tap into and utilize those environmental assessments.

Senator BOXER. Well, I think if you go back to what you did, you essentially did not address the actual threat at all. And you glossed over it, and that was very, very damaging.

We are now going to move to our next panel.

[The referenced statement follows:]



U.S. TRAVEL
ASSOCIATION

Statement for the Record of the

U.S. TRAVEL ASSOCIATION

For the Senate Committee on Environment and Public Works

Hearing on

"Economic and Environmental Impacts of the Recent Oil Spill in the Gulf of Mexico."

May 11, 2010

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The U.S. Travel Association thanks Chairman Barbara Boxer, Ranking Member James M. Inhofe, and all the Members of the Senate Committee on Environment and Public Works for holding this important hearing. The U.S. Travel Association welcomes the opportunity to submit its views to the Members of the Committee on the potential economic impacts on the travel industry of the recent oil spill in the Gulf of Mexico, and how state, local, and federal entities – in coordination with private business – can better respond in the future to similar emergencies.

The U.S. Travel Association is the national, non-profit organization representing all components of the $704 billion travel industry. We represent over 2000 members ranging from travel service providers, airlines and travel associations, to hotels and destinations. Our mission is to promote travel to and within the United States. Travel annually generates $1.7 trillion in economic activity and sustains 7.7 million direct travel generated jobs in the United States. In addition to those directly employed by the industry, millions of Americans are indirectly employed as a result of the business generated by travel, including caterers, audio/visual companies and retailers. In 2009, travel spending by U.S. and international visitors resulted in more than $111 billion in tax revenue for federal, state and local government.

Because of the direct link between the vitality of the travel industry and the overall strength of the economy, any disruption or impediment to travel in the United States can have broad and far reaching consequences. In order for travel to thrive – and by extension the economy – many destinations rely on a clean, sustainable, and growing natural environment.

From pristine beaches to expansive national parks, the natural environment attracts tourists, generates business, and contributes to the livelihood of millions of Americans. But man-made environmental catastrophes such as the Deepwater Horizon oil spill threaten to damage or

permanently destroy these sanctuaries and, in the process, cause significant economic harm. Unfortunately, examples of this strict cause and effect relationship – between the environment, travel, and the economy – can be seen throughout recent history.

One such tragedy, that bears a striking resemblance to the current situation in the Gulf of Mexico, is the 1998 Exxon Valdez Oil Spill that dumped over 10 million gallons of oil into the Prince William Sound. In 1990, a study examining the impacts of the Exxon Valdez Oil Spill on Alaska's tourism industry found that 43 percent of businesses in the spill-affected areas felt that their business had been "significantly or completely" affected by the oil spill and 59 percent reported spill-related cancellations. The same study found that visitor spending in the summer following the oil spill dropped by 35 percent in the most spill-affected regions and lost $19 million in direct visitor spending statewide.

While the full impacts of the recent oil spill in the Gulf of Mexico are still unclear, it remains certain that the travel industry in the Gulf Coast states of Louisiana, Mississippi, Alabama, and Florida could suffer sharp declines if adequate steps are not taken to stop the spread of oil to the coastline, mitigate the environmental damage already caused by the spill, and accurately communicate the full extent of the damage to the general public. Any decline – no matter how small – in leisure or business travel in the Gulf Coast region would have significant economic impacts.

In 2008, travel expenditures in Louisiana, Mississippi, Alabama, and Florida accounted for $94 billion dollars in direct spending. In the same year, travel expenditures generated $13.6 billion in tax receipts, $24 billion in payroll, and sustained 1 million travel-related jobs. Using the 2008 data as a baseline, even a 1 percent drop in travel to the Gulf Coast region as a result of the

recent oil spill could lead to the loss of $942 million in travel expenditures, $136 million in tax receipts, $241 million in payroll, and the loss of 10,280 jobs.

It is important to note that at present, the Gulf Coast tourism industry largely reports that their destinations and coastal attractions remain unharmed and open for business. Yet, anecdotal evidence of travel cancellations to the Gulf Coast region has begun to surface most likely due to media generated hysteria.

As was the case in the 2009 outbreak of the H1N1 flu virus and the 2005-2006 outbreak of the avian flu virus, travel to and within the United States suffered sharp declines because of an over-reporting in the news media of the threats posed by a "worst-case scenario" outbreak of the viruses – rather than accurate reporting of the limited danger posed by the outbreaks at that time. It is essential for the national and international news media to maintain an objective and reliable voice throughout any disaster and refrain from promoting unwarranted fear in the general public, which only serves to amplify the severity of a disaster.

Federal, state, and local policy makers should also consider how their actions and words impact travelers during emergency relief and disaster response efforts. For example, state of emergency declarations are often not the result of an assessment of danger posed to the public, but rather a procedural step enabling state and federal resources to be used accessed for disaster relief. Such declarations – when separate from an assessment of danger – can cause unjustifiable fear in the general public and result in an unnecessary slow-down of travel and economic activity.

Lastly, as the situation in the Gulf of Mexico continues to unfold, the U.S. Travel Association urges the responsible parties and Congress to consider the full economic impacts of the oil spill

on the travel economies of the Gulf Coast when compensating for damages, and providing disaster relief. We also encourage Congress and the Administration to ensure that losses incurred by affected destinations due to a decline in traveler visitation are accounted for in disaster relief assistance and payment of damages. Compensation funds will be badly needed in marketing efforts to attract travelers back to a region after a spill-affected property or natural resource has been restored.

If the responsible parties, Congress, and the federal government fail to mitigate or appropriately respond to the negative impacts of the oil spill on the travel industry, the country risks further job loss, financial hardships, and prolonged economic stagnation during an already troubling time.

We thank the Committee for holding this hearing and giving us the opportunity to comment. Additionally, we look forward to working with you on these and other important issues in the future.

Senator UDALL. Madam Chair, can I just put this Wall Street Journal article into the record that I referred to? Thank you.

Senator BOXER. Yes, you can put that Wall Street Journal article into the record.

[The referenced article follows:]

THE WALL STREET JOURNAL.
WSJ.com

BUSINESS

MAY 11, 2010.

Two Oil Firms Link Rig Blast to 'Plug'

By RUSSELL GOLD, STEPHEN POWER And VANESSA O'CONNELL

Executives from BP PLC, Transocean Ltd. and Halliburton Co. began pointing fingers on Monday over who bears ultimate responsibility for the April 20 oil-rig explosion that took 11 lives and is spilling oil into the Gulf of Mexico. The question will loom large at a Senate hearing Tuesday that will hear from executives of the three companies.

BP, Transocean and Halliburton are set to blame each other in Congressional hearings for last month's big oil-rig explosion and spill. Neil King, Bob O'Brien and Neal Lipschutz discuss. Also, Kara Scannell weighs in on Congressional hearings intended to find out what caused Thursday's sudden market plunge.

BP, the well owner, blames the failure of a big set of valves on the sea floor, known as the blowout preventer, to halt the blowout once it started.

A different account comes from Halliburton, a contractor in the drilling. This account is corroborated to some extent by Transocean, as well as by two workers on the drilling rig, The Wall Street Journal has determined.

This account describes a failure to place a cement plug within the well. The plug is designed to prevent gas from escaping up the pipe to the surface.

Before such a plug is placed, the job of keeping underground gas from coming up the pipe is done by heavy drilling fluid inside the well, commonly known as "mud." The plug is normally put in before the mud is removed, but according to the account of Halliburton, Transocean and the two workers, in this case, that wasn't done—drilling mud was removed before a final cement plug was placed in the well.

It is not clear why such a decision would have been made. Rig owner Transocean says that BP, as owner of the well that was just being completed, made key decisions on how to proceed. BP declined to comment on this account of the drilling procedures.

Tim Probert, Halliburton's president of global business lines, plans to testify Tuesday that his company had finished an earlier step, cementing the casing, filling in the area between the pipe and the walls of the well; pressure tests showed the casing had been properly constructed, he will testify.

At this point it is common practice to pour wet cement down into the pipe. The wet cement, which is heavier than the drilling mud, sinks down through the drilling mud and then hardens into a plug thousands of feet down in the well.

The mud then is removed and displaced by seawater; the hardened cement plug holds back any underground gas.

In this case, a decision was made, shortly before the explosion, to perform the remaining tasks in reverse order, according to the expected Senate testimony of Mr. Probert, the Halliburton executive.

"We understand that the drilling contractor then proceeded to displace the riser with seawater prior to the planned placement of the final cement plug...," Mr. Probert says in the prepared testimony, which was reviewed by The Wall Street Journal. The "riser" is part of the pipe running from the sea floor up to the drilling rig at the surface.

Lloyd Heinze, chairman of the petroleum engineering department at Texas Tech University, agrees that this is an unusual approach. "Normally, you would not evacuate the riser until you were done with the last plug at the sea floor," he said in an interview.

A worker who was on the drilling rig said in an interview that Halliburton was getting ready to set a final cement plug at 8,000 feet below the rig when workers received other instructions. "Usually we set the cement plug at that point and let it set for six hours, then displace the well," said the worker, meaning take out the mud.

According to this worker, BP asked permission from the federal Minerals Management Service to displace the mud before the final plugging operation had begun. The mud in the well weighed 14.3 pounds per gallon; it was displaced by seawater that weighed nearly 50% less. Like BP, the MMS declined to comment on this account.

As the heavy mud was taken out and replaced with much lighter seawater, "that's when the well came at us, basically," said the worker, who was involved in the cementing process.

The worker's account is corroborated by an email account sent by another person on the rig. He said that engineers wanted to flood the well with sea water before setting the final plug. As they were taking out the mud, the blowout began with a flood of drilling fluid being pushed out of the well, followed by a series of explosions.

Halliburton's Mr. Probert's prepared statement says: "Prior to the point in the well construction plan that the Halliburton personnel would have set the final cement plug, the catastrophic incident occurred. As a result, the final cement plug was never set."

Halliburton says it was following Transocean's orders and is "contractually bound to comply with the well owner's instructions on all matters relating to the performance of all work-related activities."

Transocean Chief Executive Steven Newman is expected to tell the Senate the explosion occurred "after the well construction process was essentially finished." His prepared testimony then blames the blowout on a failure of the well's lining, saying the blowout had to be caused by "a sudden, catastrophic failure of the cement, the casing or both."

When asked Monday night, Transocean agreed that the cement plug had not been placed in the well but that it had started the process of removing the mud, which it said was at BP's behest.

Such plugs are placed only temporarily. The idea is that the well owner can later reopen the well and begin producing oil from it.

The chairman of BP unit BP America Inc., Lamar McKay, is expected to testify that "we are looking at why the blowout preventer did not work because that was to be the fail-safe in case of an accident....Transocean's blowout preventer failed to operate." According to his prepared statement, reviewed by the Journal, he will say, "All of us urgently want to understand how this vital piece of equipment and its built-in redundancy systems failed and what measures are required to prevent this from ever happening again."

Mr. Newman of Transocean says in his prepared testimony that it "simply makes no sense" to blame the blowout preventer. At the point that the blowout occurred, "the well barriers—the cementing and the casing—were responsible for controlling any pressure from the reservoir," his testimony says.

Two Senate panels, on Energy and Natural Resources and on Environment and Public Works, are to hear the testimony. In addition, the U.S. Coast Guard and the MMS are holding hearings Tuesday and Wednesday in Kenner, La.

BP's efforts to control the leaking oil haven't worked so far. As a result, reverberations from the disaster could affect BP's global ambitions to expand its already large footprint in deep-water drilling. No other company has invested as heavily as BP has in the high-risk, high-reward business of deep-water oil exploration.

BP Chief Executive Tony Hayward said Monday that the global oil industry "has drilled over 5,000 wells in greater than 1,000 feet of water and has not hitherto had an issue of this sort to contend with."

—Neil King Jr. and Rebecca Smith contributed to this article.

Senator BOXER. I just want to say to the three of you, you gave us your whole day since 2:30. I know you had given prior testimony, is that correct, to the Energy Committee? I know it has been a long and difficult day for you.

I appreciate your being with us, and I hope we can work together so that we do not have to have any more of these moments in time where we say, oh, my God, what have we done, and how do we fix it, and what if we cannot? We just have to not have a repeat of this. And that is my goal, and you said it was your goal. So, let us hope we can find common ground.

Thank you very much. And we will call the next panel forward. The next panel.

We have Dr. Steve Bortone, Director of the Gulf of Mexico Fishery Management Council. Keith Overton, who is Chairman of the Board of the Florida Restaurant and Lodging Association. Dr. Eric May—who Senator Cardin really wanted to introduce, but he had leave—is a distinguished research scientist with the Living Marine Resources Cooperative Science Center at the University of Maryland.

Meg Caldwell, a member of the Stanford Law School faculty where she directs the Environmental and Natural Resources Law and Policy Program. And Lieutenant General Thomas G. McInerney, who is a retired member of the United States Air Force, the Department of Defense Coordinator during the response to the *Exxon Valdez* spill from March 24 to September 15, 1989. He will testify today regarding lessons DOD learned in responding to the *Valdez* spill.

I want to say to all of you, I know this has been a very long and difficult day, and I so appreciate your staying here with us. So, we will get right into your testimony.

Dr. Bortone, Executive Director of the Gulf of Mexico Fishery Management Council.

STATEMENT OF STEPHEN A. BORTONE, PH.D., EXECUTIVE DIRECTOR, GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

Mr. BORTONE. Thank you very much, Madam Chairman.

I represent the Gulf of Mexico Fishery Management Council as its Executive Director. The Councils were established, eight of them, in 1976 as part of the Fishery Management Council Conservation and Management Act.

It is the Council's responsibility to submit fishery management plans designed to manage fishery resources from State waters out to the 200-mile limit. The Gulf Council has 17 voting members from each State in the Gulf, and it is composed of State fishery agency representatives and individuals from the commercial, recreational and scientific sectors.

Since reauthorization of the Act in 1996, the Gulf Council has successfully improved fish stocks, many of them so that they are no longer categorized as over-fished, and has improved the status of the stocks of many other important species, such as red snapper. Current fishery management plans are in place to rebuild several stocks so that they are no longer over-fished. We were on our way to achieving this goal.

The recent and continuing uncontrolled release of unrefined oil into the northern Gulf of Mexico off Louisiana causes the Gulf Council members and me some concern. There are a number of short-term effects that are likely to cause harm to several fisheries and the ecosystem in which they occur.

During the spring and early summer months many commercial and recreationally important reef fish species, such as groupers and red snapper, spawn in the area currently subjected to oil release. Eggs are released into the water column where there they are fertilized and float at or near the surface for 20 to 40 hours, depending upon the species.

These newly hatched fish live as larvae at or near the surface for another 20 to 50 days. Subsequent to their larval stage, they settle out of the water column and become inhabitants of sea grass beds, coral reefs and other hard bottoms. Released oil floats to the surface and thus affects the life and condition of early life stages of these and other species, including the forage fish upon which they depend.

Of additional concern is that many of the dispersants being used can also affect the health and condition of these species. Dispersants can make oil easier to ingest as the oil is often formed into smaller, bite-sized particles. Additionally, some dispersants can make oil more biologically available, and that oil is more easily taken up by fish when emulsified.

The short-term impacts of the oil release will likely have immediate effects on the number of eggs and larvae of numerous fish species, not only those that are important to our fisheries.

An extensive red tide event that occurred in the year 2005 in the Gulf of Mexico. Only now are we seeing the results and impacts of that. In other words, the 2005 year class has been affected. This indicates to me that a major event like this in the Gulf of Mexico is going to have long-term effects on our fisheries.

Gulf fisheries is composed of a diverse range of fish species for both commercial and recreational sectors. As an industry the commercial industry annually produces 1.3 million pounds of fish a year, and shellfish, in the Gulf, with a dockside value of about $660 million. Over 3.2 million individuals annually participate in its recreational fisheries. Around the Gulf Coast the economic well-being of many communities is related to providing services to these fishing-related sectors.

The uncontrolled release of oil in the waters of the northern Gulf has already had an impact on the fishery-based economy of the region. Emergency fishing closures already implemented by the Fisheries Service was purposeful and done to protect lives and increase the safety of marine products. Lost revenues from the immediate closure are obvious. More significant are the long-term effects on fishing and fishing-related activities when a continued closure of a significant part of the Gulf of Mexico occurs.

For example, charter boat operators suffer from immediate cancellations of reservations by participants throughout the Gulf of Mexico. Just as significant is the long-term impact of giving negative impression to the public. It may take a long time for the public to get over some of those impressions and return to that industry.

The charter boat fishery will likely suffer a bad year. It is also probable it will suffer a bad decade as a result of this.

Commercial fishers will have to move to other areas. The impact of the oil release on their livelihoods will be potentially devastating in the long-term. If what occurs is projected on the larvae and eggs of many of the species, we are going to have to impart some more restrictive management measures in order to assure that these fisheries are rebuilt properly.

We anticipate that in the short-term there will be an effect on eggs and larvae in the Gulf. This will result in long-term negative effects on abundance and health of the fisheries. The event will have long lasting impacts on the economic station of a host of sectors and communities that currently participate in and directly assist the fishing-based industries of the Gulf of Mexico.

Thank you.

[The prepared statement of Mr. Bortone follows:]

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Introduction

The Gulf of Mexico Fishery Management Council is one of eight regional Fishery Management Councils established by the Fishery Conservation and Management Act in 1976. It is the Gulf Council's responsibility to submit fishery management plans designed to manage fishery resources from where state waters end (3-9 nautical miles from shore), out to the 200-mile limit of the Gulf of Mexico (i.e., the Exclusive Economic Zone or EEZ).

The Gulf Council has 17 voting members from each state bordering the Gulf of Mexico and includes state fishery agency representatives and individuals, nearly equally distributed, from the commercial, recreational, and scientific sectors of the region. Since the reauthorization of the Act in 1996, the Gulf Council has successfully removed fish species from being categorized as "overfished" and has improved stock status on other important species such as red snapper. Current fishery management plans are in place to rebuild several fish stocks so that they are no longer overfished. We are well on our way to achieving this goal.

Fisheries impacts

The recent, and continuing, uncontrolled release of unrefined oil into the northern Gulf of Mexico off Louisiana causes the Gulf Council members and me great concern. There are a number of short-term (i.e., days, weeks, and months) effects that are likely to cause harm to several fisheries and the ecosystem in which they occur. During the spring and early summer months, many commercially and recreationally important reef-associated fish species, such as the groupers and red snapper, spawn in the area currently subjected to the oil release. Depending upon the species, eggs are released into the water column where they are fertilized and float at or near the surface for 20-40 hours before they hatch. These newly-hatched fish live as larvae at or near the surface for 20-50 days. Subsequent to their larval life stage, they settle out of the water column and become bottom dwelling inhabitants of sea grass beds, coral reefs and other hard bottoms.

Released oil floats to the surface and thus affects the life and condition of the early life stages of these and other species, including the forage food upon which they depend. Of additional concern, is that many of the dispersants being used to disperse the oil can also affect the health and condition of these fish species. Dispersants can make the oil easier to ingest as the oil is

often formed into small, "bite-sized" particles. Additionally, some dispersants can make oil more biologically available in that oil is more easily taken up by fish when emulsified.

The short-term impacts of this oil release will likely have an immediate effect on the number of eggs and larvae of numerous fish species – not only those that are important for our fisheries.

The long-term effects of red tide events demonstrate that something such as a large and persistent toxic bloom that occurred in the eastern Gulf of Mexico in 2005 is just now being observed by fishery scientists. The result of this bloom has led to noticeable reductions in the 2005 year-class. This indicates that major and significant events can have long-lasting and far reaching effects, even after several years.

Economic impacts

The fisheries in the Gulf of Mexico are supported by a diverse range of fishery species for both the commercial and recreational sectors. As an industry, commercial fishing currently produces about 1.27 billion pounds of fish and shellfish in the Gulf of Mexico with a dockside value of over $659 million. Over 3.2 million individuals annually participate in the recreational fisheries of the Gulf of Mexico. Around the Gulf coast, the economic well-being of many communities is related to providing services to these fishing-related sectors.

The uncontrolled release of oil into the waters of the northern Gulf of Mexico has already had an impact on the fishery-based economy of the region. The emergency fishery closure area implemented by the Fisheries Service was purposefully done to protect the lives and increase the safety of marine product consumers. Lost revenues from the immediate closure are obvious. More significant are the long-term effects on fishing and fishing related activities when a continued closure of a significant part of the Gulf of Mexico occurs. For example, charter boat operators suffer from immediate cancellations of reservations by participants in recreational fishing, not only in the impacted area, but throughout the Gulf of Mexico. Just as significant is the long-term negative impression by the fishing public, many of them from areas beyond the Gulf coast. The charter boat fishery will likely suffer a bad year. It may also suffer a bad decade as that is the length of time it may take for public confidence to return.

Commercial fishers will have to move to other fishing areas to ply their trade. But the impact of the oil release on their livelihoods will be potentially devastating in the long-term. If, as projected earlier, a result of oil release is a reduction in eggs and larvae of commercially important fish species, it is reasonable to assume that more restrictive management measures will have to be implemented to replenish those resources. Rebuilding fish stocks is painstakingly slow. This oil release event is likely to curtail the pace established for fish stocks currently undergoing rebuilding.

Conclusions

It can be anticipated that the release of oil will have an effect on eggs and larvae currently being produced in the Gulf of Mexico. It is likely that there will also be long-term negative effects on the abundance and health of the fishery resources that results in additional restrictions on commercial and recreational fisheries. This event will have long-lasting impacts on the economic station of a host of sectors and communities that directly participate in, and indirectly assist, the fishing-based industries of the Gulf of Mexico.

Regardless of the resulting impacts of the oil release, the Gulf of Mexico Fishery Management Council is ready to meet its obligation to assure the long-term sustainability of the fishery resources. It is hoped that the Gulf's fishery resources can persist at a level of abundance and general condition that, after the oil release ceases, will allow their replenishment at a pace that will not impede the economic recovery of the lifestyle of individuals living around the Gulf of Mexico.

Environment and Public Works Committee Hearing
May 11,2010
Follow-Up Questions for Written Submission
Questions for Bortone
Questions from:
Senator Barbara Boxer

1. Dr. Bortone, your testimony highlighted the impact this oil spill could have on a variety of commercially important fish species and the commercial and recreational fishing industries that depend on them.

Given the long-lasting impacts on fisheries that we could see as a result of this spill, how significant do you believe the economic impact will be on commercial and recreation fishing industries in the years to come? What steps can be taken to mitigate this impact?

Currently we have no data, one way or the other, that allows us to reliably predict the impact that the recent oil spill in the northern Gulf of Mexico will have on recreational and commercial fisheries. These data are currently being gathered and analyzed by federal, state, and academic institutions. I hope these data will be available in the near future to provide a projection for what the future may bring.

During the oil spill, there were no indications of unusual fish kills in federal waters. If there had been evidence of fish kills, it would be easier to conclude that there may be immediate reductions in adult populations of reef and bottom fishes in the Gulf. Spring to mid-summer is the spawning period for many recreationally and commercially important fish species in the oil spill region of the northern Gulf. It is reasonable to assume that spawning activity, and reproductive success, may have been reduced. Similarly, the eggs and larvae of these fishes normally inhabit the epipelagic zone (upper few meters of the water column) after spawning has taken place. This habitat, in the area of the oil spill, was severely impacted. Consequently, it is also reasonable to assume the health, condition, and survival of these recently spawned eggs and larvae would be negatively impacted by the oil spill. The degree of the impact and significance on the health, condition and status of future adult stocks is unknown at this time.

Given past experience with widespread environmental hazards (e.g., red tides) it is probable that there will be a negative effect on the population size of many of these species groups. Species such as mackerels and tunas are often found at the surface in the region of the oil spill and may have been especially affected. This negative affect may not be noticeable for several years, as this is when most fish would have grown to the appropriate size to enter the fishery (i.e., become fishable).

My best assessment is that we will see impacts on fish stocks 3-5 years from now. The duration of these impacts is unknown but could last as long as a decade. If there is an accumulation and bio-magnification of oil-derived pollutants and dispersants in the food chain, there could be long-lasting effects on fish stock condition and abundance. Consequently, the economic impacts could be long-term and far reaching.

The steps we should be taking are several but are essentially an expansion of those efforts currently being taken. That is, continued intense testing of fish and shellfish tissues for contaminants *should*

occur far into the future (20 years) to assure the public that Gulf seafood is safe. Continued and expanded population surveys of adult fish and their eggs and larvae should occur to provide a more complete understanding of the Gulf ecosystem and the impacts that this and other extreme events may have on their status and condition. We should expand our modeling and large-scale ecosystem monitoring capabilities. This would allow better prediction of extreme event effects. The quick, take-home lesson is that we are only at the cusp of beginning to understand the ecological service functions in marine ecosystems. Difficulties in predicting the aftermath of the oil spill underscores our primitive understanding of these systems. Lastly, we need to learn from this event so that, during future events, we would be able to more quickly mobilize our scientific response efforts as well as more fully understand the ramifications of widespread dispersant use.

Do you believe those responsible for this spill should be liable for the economic damages that it may cause?

As Executive Director of the Gulf of Mexico Fishery Management Council I will not comment on this question as this is outside the purview of my scientific expertise and is more of personal opinion.

Senator BOXER. Thank you very much for that important testimony.

Keith Overton is Chairman of the Board of the Florida Restaurant and Lodging Association and Senior Vice President and Chief Operating Officer of TradeWinds Island Resorts, the largest resort on the West Coast of Florida.

Welcome, sir.

STATEMENT OF KEITH OVERTON, CHAIRMAN OF THE BOARD, FLORIDA RESTAURANT AND LODGING ASSOCIATION; SENIOR VICE PRESIDENT AND CHIEF OPERATING OFFICER, TRADEWINDS ISLAND RESORTS

Mr. OVERTON. I appreciate the opportunity to express the views of Florida's hospitality industry related to the recent oil spill which has occurred in the Gulf of Mexico. I am humbled to be here today representing our great industry.

And I very much appreciate Mr. McKay's comments earlier that he is going to pay for all of the impacts done to the Gulf of Mexico neighboring States. That makes the content of my testimony today critically important.

My name is Keith Overton. I am the Chief Operating Officer for TradeWinds Island Resorts. Our company is anchored by two privately owned world class resorts with a total of 796 guest rooms. We are on 25 acres situated on the Gulf of Mexico and St. Pete Beach, Florida. We employ about 750 people.

We are all about entrepreneurialism through tourism. TradeWinds has become a brand name within Florida, and we have done this through our own sales and marketing efforts because we do operate independently. We have a precise understanding, as a result of that, of where our business comes from, and most importantly what influences tourism in Florida as well as to our destination.

I can tell you that, as Chairman of the Board for the Florida Restaurant and Lodging Association, I am going to provide you with a perspective that our over 10,000 members share regarding this threat to their stake in Florida's largest economic driver.

Hospitality in Florida today represents a $57 billion industry, 20 percent of Florida's economy, $3.4 billion in sales tax revenue, and more than 900,000 employees are employed there, clearly the largest employer in the State of Florida.

Tourism in Florida is clearly more important to Florida than the benefits of any offshore oil drilling near its shores. This is an unequivocal statement, and I want to make that clear. We need to have a voice in this. We need to be a part of the consideration. And I appreciate your comments, Senator Boxer, as it relates to what are measures that are going to be put into place. And I would like to address a couple of concerns here as we go.

Visions of a vacation to Florida for most travelers have been consistent and attractive for nearly a century, and the unique experiences which can be found all around our State create fond memories of sugary white sand beaches, warm sunshine, blue waters, beautiful natural resources, fresh seafood and many fun attractions and theme parks for everybody visiting.

The mere thought of oil rigs in the nearby waters off of Florida's shores and beaches changes that fantastic imagery instantly and permanently. Still yet many legislators in Tallahassee and right here in Washington, DC, have continued to push to exploit Florida's natural resources at the risk of devastating its largest economic driver. It is unfortunate that today that risk has become a reality.

I have included a page in the insert that you have from a study conducted by the Visit St. Pete/Clearwater Convention and Visitors Bureau in 2008. And basically the results of that, I think, are very indicative of all beachfront destinations when it comes to the desirability to come to Florida and visit the beach.

We have over almost 2,300 miles of coastline and the top five most influential factors in choosing a beachfront destination are safe destination, beautiful beaches, a nice environment, they want to be able to relax, and they want to be able to suntan. Clearly, those things are at risk here today.

The to-be-released 2010 Portrait of American Travelers by Y Partnership indicates that beautiful scenery and a beach experience are also both in the top five as important to American travelers who are interested in visiting Florida. Clearly, Florida stands to have many of its vital attributes tarnished as oil continues to pour into the Gulf of Mexico.

Florida's tourism continues to suffer due to a struggling economy which has resulted in cuts in spending on travel throughout all market segments. Add other factors, such as unseasonably cold winter and now the disaster in our Gulf waters that we see today, Florida's hospitality for 2010 looks to endure another decline in revenues.

Even further, a 10 percent or even smaller reduction in Florida tourism dollars could force many of our tourism-based businesses out of business. Profit margins are already thin, and the bank debt service coverage ratios are regularly at risk for many of our hotels and restaurants.

Recognizing just how fragile Florida's tourism has become, I fear the effects of this oil spill will be devastating and similar to those of the hurricanes that we saw in 2004. And what you saw then was that there were certainly parts of our State that were devastated. But there were many parts, most parts of our State, where Florida was open for business and in great health. We had a few tree limbs fall in our place, for example. But when you watched the national media and you read the newspapers, Florida was under water.

And we are very concerned that this effect is already starting to happen. We are seeing cancellations in abundance. I have a colleague who is in the Destin area who operates a hotel there, and he told me that all reservations have just stopped completely. So, we are at risk.

Imagine for a minute——

Senator BOXER. I am going to have to ask you to sum up. You are so eloquent, but I am going to have to ask you to sum up just given the time and the fact that I have a 7 that I have to be at.

Mr. OVERTON. OK. I will do that. I apologize.

Senator BOXER. You can just sum up because I think we are getting your message loud and clear, and it is a very good message. So, sum it up for us.

Mr. OVERTON. Let me just sum up by saying this. When those hurricanes occurred in 2004, Governor Bush at the time instituted an additional $25 million to Visit Florida, which is our marketing firm, and we had a total of $50 million to offset some of the concerns. It was not enough, frankly. Today, even in August and September 5 or 6 years later, we still cannot get the hotel occupancies that we need.

And I would suggest that $100 million is probably not enough even to market this devastation throughout the country and the international markets. So, in summary, I will wrap up there. And thank you very much for allowing me to speak.

[The prepared statement of Mr. Overton follows:]

TradeWinds
ISLAND RESORTS ON ST. PETE BEACH

RE: **Economic and Environmental Impacts of the Recent Oil Spill in the Gulf of Mexico**

Hearing: **Tuesday, May 11, 2010, 2:30 pm**
Room 406
Dirksen Senate Office Building

Dear Senate Committee on Environment and Public Works:

Thank you very much for providing me with the opportunity to express the views of Florida's hospitality industry related to off-shore oil drilling and, of course, the recent oil spill which has occurred in the Gulf of Mexico. As the owner/operator of the largest resort on the west coast of Florida, I am very familiar with all economic influences on our state's tourism industry. We operate two independent world-class resorts with 796 guest rooms located on St. Pete Beach, Florida. We represent entrepreneurialism in its purest form, having created our own brand and relying solely on our own sales and marketing efforts to successfully compete in a very difficult market place. Because we have no franchise or flag to channel business to us, we have developed a great understanding of where our business comes from and what influences travel to our destination.

As Chairman of the Board for the Florida Restaurant and Lodging Association, I will also convey to you today's concerns that many tourism leaders have regarding the threat to their stake in Florida's largest economic driver. Florida's hospitality industry represents:

- **A 57 billion dollar industry;**
- **20% of Florida's economy;**
- **3.4 billion dollars in sales tax revenue; and,**
- **More than 900,000 employees - Florida's largest employer.**

Florida has deservedly earned the reputation of being the vacation capital of our country and is a top destination for international travelers. Florida's image has been consistently attractive for nearly a century and continues to create fond memories of sugary white sandy beaches, warm sunshine, blue waters, beautiful natural resources, fresh seafood and a variety of unique and fun attractions for everyone visiting. The mere thought of oil rigs in the nearby waters off Florida's shores and beaches changes this fantastic imagery instantly and permanently! I have included a page from a study conducted by the Visit St. Petersburg/Clearwater Convention & Visitors Bureau in 2008. I believe the results of this study perfectly reflect the desirable attributes of all of our beachfront destinations along the nearly 2,300 miles of Florida's coastline. The top 5 most influential factors in choosing a beachfront destination are:

- **Safe destination;**
- **Beaches;**
- **Environment;**

- **Relaxing; and,**
- **Sun tanning.**

It is clear that off-shore oil drilling along Florida's shoreline, even absent a disaster such as the one that recently occurred, will negatively affect three of these attributes in immeasurable ways, costing Florida billions of dollars. The to-be-released 2010 Portrait of American Travelers by Y Partnership indicates that 'beautiful scenery' and a 'beach experience' are both in the top 5 as important to American Travelers who are interested in visiting Florida. This further makes the point that Florida's tourism will be materially affected by the disaster that continues to pour oil into the beautiful Gulf of Mexico.

While tourism is Florida's largest industry, it has and continues to suffer due to a struggling economy, which has resulted in cuts in spending on travel throughout all market segments. When you also consider factors such as an unseasonably cold winter, Florida's hospitality in 2010 looks to endure another year of declining revenues. Even a further 10% reduction in our tourism dollars could force many tourism-based businesses out of business. Profit margins are already thin and bank debt service coverage ratios are regularly at risk for many of our restaurants and hotels. Florida's legislature understands that without the current production of tourism dollars, a state income tax could be necessary to offset budget deficits going forward. It is also clear that many valuable services and programs would be further cut or eliminated altogether.

Recognizing just how fragile Florida's tourism has become, I fear the affects of this oil spill will be devastating and similar to those Florida's tourism industry experienced after the multiple hurricanes of 2004. You will recall that some areas of the state were indeed severely affected by the storms, but most of the state was completely unaffected and was open for business as usual. However, what people saw in the national and international media was the sensationalism of the news coverage surrounding these storms, which ultimately lead to a perception that all of Florida was under water and badly damaged. Travel to Florida was severely impacted by these events and even today, six years later, we find that business and leisure travelers alike are still very hesitant to plan a visit to Florida during August and September. Imagine for a minute what is ahead for our industry as oil continues to cover the pristine natural environment in our Gulf waters.

This disaster has the potential to devastate Florida's coastal ecosystems. One can look to the Exxon Valdez spill to get a sense of the shocking ecological and economic impacts our wildlife, fisheries and fragile coastal ecosystems may bear. The tourism trade relies upon healthy, sustainable ecosystems. So, let me be unequivocally clear, the importance of tourism far exceeds any economic benefits realized by oil drilling in the Gulf of Mexico.

In that regard, I urge the committee to look beyond the catastrophic impacts of this spill, to take action now, ensuring that reforms are enacted so this never happens again. The joint Coast Guard-MMS investigation is woefully insufficient. An Independent Commission on the

BP spill must investigate the cause, response and impacts to truly assess the magnitude of the risks associated with offshore drilling.

America expects you to do this. Support ranges from Ocean Conservancy to the Center for American Progress to Newt Gingrich. Representative Capps' legislation for such a commission has been introduced in the House. I urge this committee to act with similar legislation; guarantee the truth and ensure protections for our 10,000 members in the Florida Restaurant and Lodging Association who have been devastated by this spill.

Until an Independent Commission completes its work, there must be no new drilling or exploratory drilling in the U.S. Outer Continental Shelf or in fragile regions such as the arctic. The Deepwater Horizon incident has shown spill response is sorely lacking; it would be madness for the remote people of the Arctic, inhabiting one of the last pristine ecosystems on the planet, to watch in horror what our members are enduring in the Gulf.

The marine resources, communities and particularly our members being devastated today should compel Congress to enact a smarter approach to managing activities in our oceans. As oil companies will continue to generate significant profits, while putting our wildlife and coastal economies at risk, a portion of revenues must be endowed for restoration and a transparent management regime such as Coastal and Marine Spatial Planning (CMSP). For our members and for America's treasured aquatic resources, Congress must act now, mandate a reinvestment program and manage the conflicting needs for our seas.

Tourists have a multitude of choices when traveling and our Gulf fisheries offer a unique driver that brings them to coastal communities such as mine. Our fisheries are the front line in this unfolding disaster. Many important species are spawning now or in the coming months and will spend the early part of their lives in coastal, estuarine and/or open water environments. All of these habitats, and the young species inhabiting them, will be affected by the oil spill. The pictures and video of this, which will undoubtedly begin to appear, will serve as a stark reminder to us all as to what our responsibility is to Florida's future.

The National Marine Fisheries Service, the government agency responsible for managing fish species in federal waters, has closed all recreational and commercial fishing in the areas affected by the spill, totaling nearly 5% of federal waters in the Gulf so far – an area the size of Virginia.

It is absolutely imperative that managers be given sufficient resources immediately to establish ecological baselines and track the immediate and long term impacts of the spill in order to ensure that appropriate management actions are taken to achieve sustainable fish populations in the Gulf of Mexico, something critically important to Florida's tourism economy.

NMFS and State fishery agencies should have the resources to:

- Enlist fishermen to collect information necessary to establish environmental baselines and to monitor long term impacts.
- Expand fish population assessments of both state and federally managed species.
- Intensify and modernize fisheries data collection systems. This offers opportunities to engage and employ fishermen to collect critical information on fishery health and provide timely information for management.
- Expand fisheries independent data collection systems to collect critical information necessary to assess ecological and fish population impacts.

In closing, I encourage this committee to provide all the necessary resources and funds to mitigate this disaster in the Gulf of Mexico. Please also recognize that stopping the oil from continuing to enter the Gulf waters and the clean-up process doesn't make everything better and it certainly does not address the long term effects this spill will have on Florida's tourism and natural resources. In addition to providing funding for the aforementioned resources, I ask this committee to consider that in 2005, Florida's marketing agency, Visit Florida, needed as much as an additional $25 million for a total of $50 million for marketing efforts to try to let travelers know that our state was okay and open for business after the hurricanes of 2004. I would suggest that Florida will need at least $100 million, $75 million more than we have today, to sustain the necessary marketing to overcome the damage this oil spill will continue to have on our state's tourism.

On behalf of Florida's tourism industry, I sincerely thank you for the opportunity to share our concerns and hear the actions needed to preserve Florida's tourism in 2010 and the future.

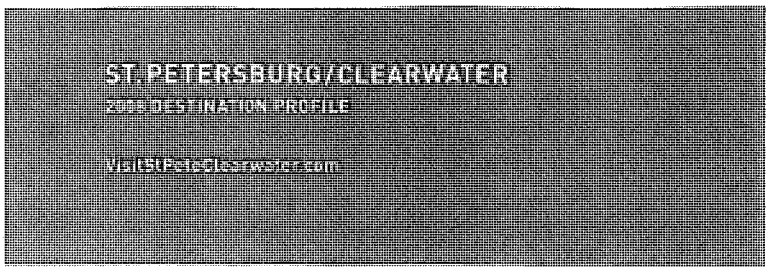
Sincerely,

Keith Overton, CHA
Senior Vice President and Chief Operating Officer
TradeWinds Island Resorts

KO/jn

Chairman
Florida Restaurant and Lodging Association





Influential Factors

Selecting a place to vacation can be difficult. Fortunately, when choosing the St. Petersburg/Clearwater area, there are so many desirable attributes that most vacationers come back year after year to experience all that the destination has to offer. Below are the factors that visitors cited as to why they chose to visit the St. Petersburg/Clearwater area from 2002 to 2008. Based on the percentages, the desire to visit our award-winning beaches continues to be one of the most influential factors.

Influential Factors

Factor	2002	2003	2004	2005	2006	2007	2008
Safe Destination	83.4%	91.4%	95.6%	98.3%	97.0%	96.6%	96.2%
Beaches	90.1%	95.3%	88.9%	90.2%	98.5%	96.5%	94.8%
Environment	90.4%	94.0%	93.4%	95.4%	94.2%	95.2%	93.8%
Relaxing	92.2%	92.8%	95.0%	97.5%	97.2%	95.0%	94.1%
Suntanning	78.6%	79.6%	85.2%	92.6%	94.2%	87.2%	83.8%
Weather	85.4%	85.1%	85.5%	84.9%	84.9%	84.3%	85.6%
Value for Money	82.2%	84.5%	85.7%	85.8%	82.2%	80.2%	85.8%
Value of Lodging	71.7%	77.7%	82.5%	82.3%	79.5%	73.8%	79.7%
Good Dining	67.5%	56.8%	59.9%	65.2%	62.0%	64.4%	71.3%
Upscale Lodging	65.7%	62.8%	57.8%	59.4%	59.1%	58.8%	61.4%



TradeWinds
ISLAND RESORTS ON ST.PETE BEACH

September 8, 2010

SENT VIA EMAIL: Heather_Majors@epw.senate.gov

Senator Barbara Boxer
c/o Heather Majors
Senate Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, DC 20510

RE: Follow Up Questions from Senate EPW Committee

Dear Senator Boxer:

I appreciate the opportunity to follow-up with you regarding our progress related to the BP oil spill. Since I testified before your committee back in May, things have gotten worse for Florida's tourism from a financial recovery perspective. The entire claims process is a complete mess. Clearly there are tourist-based businesses that are at risk of breaking many critical provisions within their loans as a result of not being able to gain access to the BP emergency money that Mr. Feinberg is now administering. Many of Florida's businesses are at risk of failure altogether as we go into our slowest months now short on cash resulting from the lost business which was clearly attributable to the perceptions surrounding the BP oil spill.

Question 1. Mr. Overton, the size and importance of the tourism industry to Florida's economy is remarkable. In the wake of this oil spill, billions of dollars and thousands of jobs are at stake.

Given the current impacts and the potential for long-term effects, could you expand on what impacts the oil spill has already had and what impacts are expected in the coming months and years on individual hotel operators, restaurant owners, and business owners that depend on Florida's coastal resources?

As you may recall, my company lost $1.7 million in revenue through June. Our revenue losses are closer to $2.3 million now. We assumed BP, who was responding to claims at that time and prior to Mr. Feinberg's group taking over late last month, would calculate a net loss based on this revenue shortfall and immediately get a check to us. Not so! We were flat denied by BP, as were many businesses from Destin southward to the Florida Keys.

The reasons given were "no oil on our beach" and "we were not close enough in proximity to the spill site". I have personally met, and corresponded with Mr. Feinberg on four different occasions since my company was issued a denial from BP. Mr. Feinberg has yet to even respond to any of my requests, despite my personally handing him a copy of our claim and getting his assurance of a follow-up call. It is with remorse that I tell you I believe the administration has made a vital error in judgment by appointing Mr. Feinberg as Claims Administrator. Mr. Feinberg's recent shift in his position on proximity only demonstrates to me that he is nothing more than a middle- man taking direction from BP. It is ridiculous that anyone would think my company's claim is not compensable. We are the largest resort on the west coast of Florida which rests on 30 acres of Gulf-front real estate. Ask anyone you know about how the oil spill affected their views on travel to the west coast of Florida and it's obvious that we were severely damaged economically. Mr. Feinberg has testified many times that he acknowledges oil doesn't have to be present on a beach for a business dependent upon that beach to have a claim. He has reversed this position and is stating proximity to the spill will now be one of the three majority factors in his ruling over claims. "Proximity" is not mentioned anywhere in the law and is irrelevant. Mr. Feinberg, in my opinion, is being influenced by BP and has subsequently now shifted his position. I have attached my correspondences with Mr. Feinberg.

Question 2. Mr. Overton, in your testimony you call for reforms to ensure that a similar spill never happens again. You also highlight that impacts will continue well after the oil spill ends. For example, tourism officials will need to spend millions of dollars on marketing efforts to assure tourists that Florida is safe to visit in the wake of the oil spill. Increased marketing efforts are just one of the many economic costs that those involved in the tourism industry will face. Others include reduced revenue, lost wages, or even job loss.

Do you believe those responsible for this spill should be liable for these costs and any other economic damages that the spill may cause?

In response to your second question, BP is now taking the approach that the only marketing which needs to be done regarding the oil spill is that which repairs its own image and perception problem. Funding for marketing Florida as a destination was modest to begin with when compared to the almost $100 million BP has deployed to repair its brand to date. These ads seem to be never ending. Contributions toward marketing dollars for Florida's tourism from BP have ceased. Everything is "all better" now when you speak to anyone from BP or the Feinberg team. The media spin is now focused on how many businesses with denied claims will just give up and go away and how BP can convince our country's citizens that this whole disaster

was a non-incident.

I know my response here is brief, but I hope you can sense my frustration. If the administration and congress genuinely meant their proclamations of holding BP accountable for the reparation to our country's economic losses, far more work needs to be done. Florida's tourism leaders have heard only empty promises.

Sincerely,



Keith Overton, CHA
Senior Vice President and Chief Operating Officer TradeWinds Island Resorts

Chairman of the Board
Florida Restaurant and Lodging Association

KO/jn

Attachments

From: Keith Overton
Sent: Monday, August 09, 2010 6:11 PM
To: Amy Weiss
Cc: Gonzalez-Rothi, Sara (Bill Nelson); Morgan, Carlye; Carol Dover; jpatronis@aol.com
Subject: Denial of Claims

Dear Amy,

You might remember me because we met in Destin at the Emerald Grand Hotel when Mr. Feinberg spoke with the various industries which had been affected by the oil spill. You may also recall that I testified before Congress on the same panel with Mr. Feinberg a couple of weeks ago regarding the claims process.

I wanted to take a moment to tell you how outraged I am that our claim (TradeWinds Resorts, St. Pete Beach, FL) was denied today by our BP adjuster. All tourism businesses in Pinellas County are being denied because of our "proximity" and being far away geographically from the oil spill. Furthermore, denials are occurring from the Destin area all the way down to the Florida Keys for the same reason. Our industry is flat out angry and ready to give up on the claims process as a result of these calls from BP proclaiming there's "no oil on our beaches", so no claim!

I realize that Mr. Feinberg 's office has not officially opened as of yet, but I was under the impression that he was already providing influence on the decisions being made by existing adjusters, which was a material reason for the claims process being so slow.

Mr. Feinberg continues to suggest that one of his objectives is to clearly settle claims without litigation. I can assure you that adjusters providing answers like this to our industry, from BP or those hired by the Administration/Mr. Feinberg, will get quite the opposite effect.

I would like to speak with Mr. Feinberg at his earliest convenience to express my dissatisfaction with the process and discuss why this is occurring. Hopefully he can provide me with some assurances that this news we are receiving is inaccurate.

I have been with Mr. Feinberg many times and heard him state that businesses located on the beaches along the Gulf Coast of Florida will have compensable claims regardless of whether oil reached their beaches or not. This was also a part of Mr. Feinberg's testimony to Congress.

Mr. Feinberg has said these kinds of claims are easy and don't require rocket science, but apparently BP does not share his sentiments! My business here at TradeWinds Resorts is not down almost $2 million since the oil spill for any other reason than negative perceptions resulting from the oil in the Gulf of Mexico and don't know how anyone with any common sense could argue this fact, much less deny a claim pertaining to it. Lastly, if our proximity to the actual oil was going to lead to a denial of our claim, why then have us send in all of our financial information, then request more information twice after that, only to then deny the claim?

I appreciate you allowing me to reach out to Mr. Feinberg through your office and I very much look forward to speaking with him as soon as possible.

My cell phone is 727-432-3428.

Warm regards,

Keith Overton, CHA
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From: Keith Overton
Sent: Tuesday, September 07, 2010 4:05 PM
To: 'kenneth@feinbergrozen.com'; 'ken@feinbergrozen.com'
Cc: 'Amy@pointblankpa.com'; 'Susan@feinbergrozen.com'
Subject: Follow-up from our Meeting in Pensacola on August 17th

Dear Mr. Feinberg,

I wanted to reach out to you in an effort to see if you have had the opportunity to review my company's claim related to the BP oil spill. As you will recall, Perry Weitz gave you a copy of our claim during our meeting and you promised to get back with me on it promptly. I have not heard anything from you or a designated adjuster to date. We are currently preparing our six month emergency claim for submittal and having some guidance on the claim we filed for April through June would be very helpful in doing so.

Thank you in advance for your time regarding this very pressing matter.

My cell phone is 727-432-3428.



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Senator BOXER. Thank you so much.

Eric May, he joins us from the University of Maryland, Eastern Shore. I am going to put into the record this eloquent introduction that Senator Cardin wants to make sure appears in the record. And we are looking forward to your comments.

Dr. May.

[The referenced document was not received at time of print.]

STATEMENT OF ERIC B. MAY, DISTINGUISHED RESEARCH SCIENTIST, LIVING MARINE RESOURCES COOPERATIVE SCIENCE CENTER, DEPARTMENT OF NATURAL SCIENCES, UNIVERSITY OF MARYLAND EASTERN SHORE

Mr. MAY. I thank you, Madam Chairman. I appreciate the opportunity to provide you with what is hopefully information that you can use in your deliberations.

I am Eric May. I am one of thousands of scientists who are directly involved in, research on, or have working knowledge about the potential effects of oil spills on marine ecosystems and the long-term consequences of such events.

I do not think any of us could give you an exact accounting of all the effects or consequences that could happen as a consequence of the Gulf oil, Gulf of Mexico spill. It is safe to say that there are going to be effects; there are going to be consequences.

The current level of discharge is 200,000 gallons of crude every day. Basically, 1 million gallons every 5 days. You can do the math. It will begin to approach, if you will, the *Exxon Valdez* at 10 million gallons, the Prestige at 20 million gallons. The thought is staggering. And basically, all of these, in aftermath, have had significant effect, not just short-term, but long-term.

I went to off the coast of Brittany 4 years post the event of the *Amoco Cadiz*. Flat fish on the bottom were still having ulcers, sole was tumors, liver tumors. A litany of health problems. So, these are not short-term effects. These are protracted effects.

Oil is still seeping out of some of the sand in Alaska. After 10 years, it seeped. So, it is not—what I am concerned about is not just short-term, long-term. We can project costs of clean up, but it is not going to be immediate.

This spill is unique. It started in April. There is only case before that a major spill occurred in April. By all counts this is the perfect environmental storm. It is an uncontrolled leak near sensitive coastal waters, initially started out in unfavorable weather conditions, and at a time when everything is maximum biological activity, spawning, larvae. A litany of events is going on now which are the most sensitive time for fisheries. It is awesome.

I attempted, in my written testimony, to give you some of the biological processes that will come into play. All of these will occur to some degree. The full extent of how they will occur will depend on how much more oil leaks into the system.

Consequence are going to be loss of species diversity, loss of keystone species upon which other species depend, bioaccumulation of toxic compounds such as metals and organics, reduction in year classes for commercially and recreationally important species, near-term economic impacts on individuals and communities that de-

pend on the fisheries, long-term economic impacts at the local and national, and I think even the global levels are going to see this.

The price of your shrimp cocktails is about to go up. The cost of getting to the restaurant to eat it is going to go up, too. We are all going to be impacted. We are all going to feel the effects.

And if you do not believe it, we can look back at some of the things that happened with the *Exxon Valdez*. Thousands of papers and hundreds of books have been written on the subject. In the 1980s, the oil companies held a forum on oil spill fate impacts on the marine environment.

The scientific body collective has been telling you, will tell you, that placing oil wells near sensitive coastlines represents a serious significant environment risk. And it is a socioeconomic risk. I tell my students in Environmental Science 101, zero risk does not exist. No matter how much, how many safeguards you put, there will always be an accident, and it will always come with a consequence.

The Gulf of Mexico is a tragedy in every sense of the word. If you go forward from this point, science can give you an idea of what will ensue, but is far from perfect in its ability to predict and provide a clear understanding.

Let us make sure that ecological impacts are closely watched. Develop better protective tools such that the risks to our natural resources, so that we can better understand what will be the consequences.

We benefit from oil. No doubt. But let us be sure that the benefits that may be derived from expansion of oil exploration are in keeping with the environmental and socioeconomic risks that are going to be faced.

I thank you for your time.

[The prepared statement of Mr. May follows:]

May 11, 2010

Testimony Before The:
Senate Committee on Environment and Public Works
Economic and Environmental Impacts of the Recent Oil Spill in the Gulf of Mexico
Room 410 Dirksen Senate Office Building

Dr. Eric B. May

Research Scientist and Lecturer
NOAA Living Marine Resources Cooperative Science Center
Department of Natural Sciences
Carver Hall
University of Maryland Eastern Shore
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410-651-8342

Good Morning, Chairman Boxer, Ranking Member Inhofe, and Members of the Committee. My name is Eric May, and I am a research scientist and lecturer at the University of Maryland Eastern Shore. Though I am part of the NOAA Living Marine Resources Cooperative Science Center and the University of Maryland Eastern Shore, I am speaking today for myself and not as an official representative of either those bodies.

Oil spills and releases represent one of the most serious and potentially devastating forces on marine ecosystems worldwide. Due to technological constraints, offshore oil wells often are placed where, should a leak occur, the likelihood of the oil reaching shorelines is high as we are seeing with the Gulf of Mexico spill. Of all marine ecosystems, near shore and land/water interfaces are some of the most complex, biologically active and fragile systems known. The degree to which these systems are impacted will depend on when the event occurs (spring, summer, fall, winter), amount of oil released, and weather conditions. My areas of expertise are in fish pathology, comparative pathology, and toxicology; and have experience with ecology, marine science and fishery management. For this document I will focus on the effects of oil on marine organisms and on potential broad ecosystem level effects. At this point it is important to mention that the nature, type and extent of damage will be directly related to the level of exposure to oil from a leak which is a function of rate and duration of discharge along with prevailing weather patterns at the time the event is occurring. It is a complicated and frustrating task to predict what the outcome may be.

Effects on Marine Organisms

The potential effect on marine organisms can be broken down as to nature of injury; and the life style of the organism (plant or animal). Injury in this case will either be physical or toxic. Physical injury will be the coating of respiratory membranes with oil, coating of hair and feathers, and coating of sediment

surfaces. Toxic injury is usually classed as acute (rapid onset and death), sub-acute (onset with delayed death) or chronic (delayed onset and delayed death or functional impairment). Toxic injury varies between the complexity of the organism i.e. jellyfish as opposed to red drum, and between related species where the sensitivity of one species may be greater than another, for example, a brown bullhead catfish as opposed to anchovy with anchovy the more sensitive species.

It is important to realize that, in the case of the Gulf of Mexico oil spill as with other similar leaks and oil spills from tankers, while the distribution of the oil is concentrated in the beginning, wind and wave action disperses the oil unevenly. Thus in a short period of time the concentrations of oil in the water becomes non-uniform with areas of concentrated oil and other areas of dispersed oil. This also holds true for the vertical concentrations of oil in the water column i.e. distribution from the surface to the bottom of the water body.

Physical Injury – The most visible group of species to be affected will be marine mammals, birds and turtles. For mammals, birds and turtles damage to the lungs due to aspiration of oils resulting in pulmonary emphysema and break down of interstitial tissue is rapid leading to death (acute) or to secondary bacterial infections and then death (sub-acute). If the individuals affected survive, chronic effects would include loss of lung function which will reduce their chances of survival. For marine mammals and birds, another effect will be the loss of oils that maintain feather and hair integrity resulting in the inability to fly for birds, and loss of insulation for birds and mammals leading to hypothermia and death, especially under cold ambient conditions. Fish too will experience physical injury with oils directly affecting the gill membranes reducing or eliminating the ability to get oxygen and remove carbon dioxide. In general the occurrence of physical injury is the first set of responses to oil spills and the most obvious with dead birds, mammals, turtles and fish seen floating on the surface or beached along the shore lines.

Toxic Injury – Toxic injury as opposed to physical injury is much less visible and more insidious in the long run. Crude oil is a mixture of thousands of different organic compounds that include alkanes, cycloalkanes and aromatics. Within these groups a myriad of specific chemical species exist, each with differing mode of action (how it works) and degree of toxicity (how much exposure is required to cause damage and/or death). The constituents of the crude oil mixture can also be broken down as to number of carbons or molecular weight which affects their physical properties in water. Classes of compounds such as volatile organic compounds (VOC), light fractions, and heavy fractions, which are based on their molecular weight or number of carbons, behave differently and will have differing effects on biological systems. To summarize the state of knowledge regarding the toxic impacts of crude oil on ecosystems, species, and life stages of individual species would be impossible during this briefing, with over 2000 articles in scientific journals since 1995, most written specific to particular species and to a specific set of constituents found in crude oil. However, and as my comments on toxic injury will follow, there are some clear and accurate generalizations that can be made which are directly applicable to the Gulf of Mexico oil spill.

Acute Effects – In the areas close to the source of the spill or leak there will be acute effects which usually lead to death quickly. For many of the microscopic free-floating animals (zooplankton) and plants (phytoplankton) there will be significant impacts as many of the compounds found in crude will affect the membranes of the animals resulting in rupture or breaching. While some phytoplankton species are resistant, these are usually confined to those with shells or resistant outer covering. For fish larvae in the area, there will be gill and skin damage; the gills will rupture and the skin which has yet to become impermeable will be degraded. As the heavier oil constituents settle to the bottom organisms living on or in the sediment (benthics) will suffer similar fates for the same reason. Juvenile, sub-adult and adult fish swimming through the area of the spill will have significant damage to gills and also rapidly die. One visible effect of oil contamination will be the appearance of dead fish on the surface of the water. As noted above with regard to physical effects; mammals, birds and reptiles will have significant damage to respiratory membranes due to the toxicity of many of the compounds that are aspirated or brought into the lungs.

Sub-acute Effects with Secondary Responses – As you move away from the epicenter of the oil discharge (source) to areas where the concentration of the oil is diminished, sub-acute responses are seen with damage to lung, esophageal, gastric and intestinal tissues. In birds, mammals and turtles esophageal, gastric and intestinal damage is usually in form of ulcers which lead to secondary bacterial infections and death. Lung tissues will exhibit emphysema and necrosis with secondary bacterial infections. In fish, debilitation of gill membranes will lead to rapid thickening of the membrane (proliferative change) which impedes oxygen movement across the membrane. Necrosis of gill, gastric and intestinal membranes will also occur with secondary bacterial infections leading to death. The external surfaces of most organisms save for plants will exhibit ulcers or erosions with similar consequences. The same sub-acute effects will be seen in most organisms exposed to the oil at concentrations where immediate death does not occur.

Chronic Effects – Unlike acute and sub-acute effects, chronic effects can manifest in weeks, months or in some cases years. Such chronic effects can be seen in brain, liver, kidney, muscle, skin, and spleen. The nature and degree to which these effects manifest will be a function of the concentration of contaminants in the water and how long the individual is exposed to the contaminants. Recorded effects include tumor formation and cancers, loss of immune response which leads to secondary infection by viruses, bacteria and protozoa, liver dysfunction, kidney failure, brain damage leading to aberrant behavioral responses. A rough picture of metabolic and physiologic processes that can occur in the animal (organismal level) due to contamination with oil is presented in figure 1. Since there are a myriad of

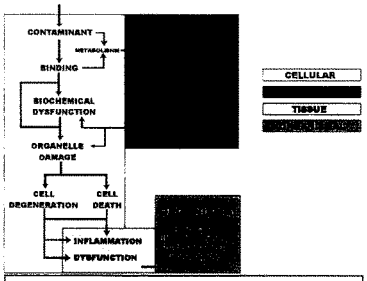


Figure 1 – Physiological process that result from the entry of a contaminant into an animal with subsequent changes that lead to deleterious responses in the organism affected.

compounds present in crude oil it is not possible to discuss all of these processes and possible outcomes as many are specific to compound and species. Responses such as cancers can take as long as 20 years to manifest in long-lived species. Chronic effects eventually will lead to the death of the individual affected, however the usual consequences for fish is that they will be eaten by a predator.

Species Sensitivity – Not all species will be affected in the same way or to the same degree. There are highly resistant species which are not affected unless concentrations are high, and highly sensitive species which are affected at exceedingly low concentrations of a contaminant. It is impossible to tell which of the many species will be affected by the spill and to what degree. It is known that oligochaetes (sediment dwelling segmented worms) are much more sensitive than some polychaetes which also are sediment dwelling. As such it can be expected that there will be loss of some species and retention of others. All of which will depend on the concentration of the oil.

Life Stage Sensitivity – As with variation in species responses, life stages too vary in susceptibility to the adverse effects of contaminants. As a rule, eggs tend to be impervious to organic compounds, however, in recent studies it has been shown that eggs of flounder exposed to contaminated sediments and water exhibit deformities, increased mortality, and reduced developmental rates. Larvae are highly susceptible to many contaminants and can be expected to suffer high mortality rates at lower concentrations than adults. In general, smaller fish are more susceptible than larger fish; however some minnows are very resistant to contaminants.

Effects on Ecosystems

Predicting the outcome following an oil leak or spill at an ecosystem level will be difficult. Depending on location, ecosystems vary from simple to complex. Land and water interfaces are some of the most complex ecosystems in the world. As above there are generalities that can be made.

Factors Influencing Susceptibility to Oil Spills – Our experiences with the Amoco Cadiz off the coast of Brittany, Exxon Valdez in Prince William Sound, Prestige off the coast of Portugal and Spain all have provided much information. The potential effects on ecosystems can be broken down as to where (open sea, near shore), type of ecosystem affected (marine, estuarine, freshwater), time of year (spring, summer, fall, winter), and latitude (northern/southern, to equatorial) an oil leak or spill occurs.

The Role of Ecosystem Complexity and Biological Activity – Ecosystems are often more complex in nearshore systems than offshore or open sea systems. Complexities of estuarine systems tend to be greater than open water marine. Colder regions such as the Arctic and Antarctic tend to have simpler systems than temperate regions (North America for example). Areas where nutrients are raised from the sea floor to the continental shelf have greater complexities than where such upwellings are absent. In general the simpler the ecosystem the more susceptible it is to catastrophic events. Seasonal fluctuations in species diversity occurs and it has been shown, for example, that in the coastal lagoons off Maryland and Virginia species, diversity is highest in the spring and early fall, probably a function of temperature. Another consideration that in some sense supersedes the above considerations is that in

early spring the biological activity dramatically increases largely due to migration and spawning activities for many marine and estuarine species of fish and for plants, emergence of shoots. It is at this time many ecosystems are at their highest vulnerability to catastrophic events. For the Gulf of Mexico oil spill it is occurring in early to middle spring where biological activity in the gulf coast zones can be expected to be very high.

Ecosystem Responses to Oil Spills – Many researchers have shown that in the years following an oil spill the diversity of bottom dwelling organisms is reduced and in some cases does not return to the previous level of diversity. The same has been shown for sediment dwelling organisms and fish that are resident to estuarine zones. In general, it can be assumed that there will be loss of diversity and a reduction in the productivity of ecosystems severely affected by oil spills and leaks. This loss of diversity can affect food supplies at all trophic (feeding) levels of the ecosystem, and thus reduce the stability of the entire system. The loss of phytoplankton which in estuarine systems are the food source of the system at the beginning and loss of zooplankton on which many species depend will result in a significant change in the character of the ecosystem.

Of particular concern is the occurrence of the Gulf Oil Spill during one of the most biologically active periods of the year. In spring most offshore species of fish have spawned or are spawning. At this time floating eggs and larvae are in the water, and particularly larvae, most susceptible to contaminants. This loss of larvae, fish and crustacean will result in lower juvenile recruitments and affect the diversity for many years to come. Many perennial dormant plants are emerging. Seeds from the previous year are germinating and shoots are emerging. Submerged aquatic vegetation is now growing and young plants developing. While most plants appear to be somewhat resistant to contaminants, early life stages are not.

Impact on the Fisheries

If we accept the concept that there will be loss of larvae and other early life stages of many of the marine organisms in the area affected then it is not a stretch to realize that important commercial and recreational fisheries will be affected to some degree. Presently commercial and recreational fishing is already impacted with loss of days fishing for commercial and likely loss of recreational fishing which will impact ancillary businesses that depend on it. Fish, shellfish and crustaceans in the gulf that have accumulated sufficient oil will be unpalatable to the human taste and cannot be sold. In the long run the impact can only be estimated. With all of the above being said, the worst case scenario is that there will be a major loss of early life stages (eggs, larvae, juveniles) which will result in a poor year class for each of the commercial and recreational species. In the case of the Gulf of Mexico oil spill a wide variety of species would be affected ranging from blue crabs whose zoea larvae are highly sensitive to contaminants from spills to reef fish whose eggs and larvae are at risk. The shrimp industry is already impacted and at a time when some shrimp species are at harvest size and others are beginning reproduction there is no question that this fishery is in danger. Oyster reproduction is in progress and the spat is at high risk to being killed from the heavier oil off shore and any of the oil moving into the shallow waters. The diversity of fish species is significant and would be greatly impacted. The impacts

will be protracted over a few too many years with few young being recruited into the adult catchable population. Thus, long after the spill, there would be much fewer catchable fish affecting harvests for the commercial fisheries and success rates for recreational anglers. The social and economic impacts would be significant since many of the coastal communities depend on the commercial and recreational fishing industry for income.

Human Health Concerns

The risk to seafood consumers of the gulf region is unknown. Many of the chemicals that make up crude oil following a spill or leak will appear in the aquatic food web. Through the processes of biotransformation, bioconcentration, and biomagnifications, chemicals move through the food web and appear in fish, and shellfish (bivalves and crustaceans) of importance as food for humans. Biotransformation is the process by which a chemical is metabolized from one form to another, which in some cases results in a product that is more toxic or carcinogenic than the original product. Bioconcentration and biomagnifications, while different mechanistically result in increased concentrations of contaminants appearing in certain species, usually species that serve as food for fish and humans. One example is the polynuclear aromatic hydrocarbons or PAHs. These have been shown to move through the food chain and appear frequently in fish and shellfish. It has been suggested that 75% of all PAHs in the environment come from oil spills and leaks. While PAHs do appear in food consumed by humans, no clear relation to the incidence of cancers among exposed individuals has been demonstrated. However given the thousands of different chemical constituents of oil, there must always be a concern for human health beyond direct exposure.

Chemical Dispersants

Chemical dispersants have been used in many of the more recent oil spills and is being proposed for the Gulf of Mexico oil spill. Their use is controversial particularly in areas of low salinity (dissolved salts). Numerous studies suggest that the effect of dispersants is to increase the rate at which the oil is biodegraded and removed from the system. A variety of dispersants have been used, organic and inorganic. The action of the dispersant is to form small oil droplets that are surrounded by the dispersant molecules. These oil droplets would then dissipate, drop to the ocean floor and be degraded. There is no real consensus in the scientific literature as to positive or negative ecological effects as a result of applying dispersants. In some cases benthic organisms were shown to have been lost in areas where dispersants were applied as opposed to areas where the oil was left untouched or skimmed. Studies on phytoplankton and zooplankton communities in areas where dispersants were applied demonstrated no effect with diversity and abundance when compared to unaffected populations where no oil spill occurred. I believe that there remains sufficient controversy over dispersant use that further research into their use is warranted, however they so far remain as one of the few tools available to mitigate oil spills.

Closing Remarks

What I have stated in the above testimony is essentially the biological basis for the expected responses to the Gulf of Mexico oil spill. The degree to which these responses will manifest will depend on how much oil is released, and prevailing weather patterns which will dictate where the oil will go; but harmful outcomes will manifest and are already manifesting along the Gulf coast. While much research has been done, it provides only minimal clues as to what the final outcome will be. Honorable senators, you are witnessing the perfect ecological storm; a spill near ecologically sensitive areas, weather patterns driving oil into those areas, and at a time when those areas are most biologically active.

That damage has been done already is not in question, it has. The question is how much. Loss of mammals, birds and larger fish along with their forage base (plankton, smaller fish, etc.) will destabilize the ecological balance upon which the Gulf of Mexico systems depend. The damage to key commercially important species such as blue crabs, shrimp, drum and others could be immense. Beyond the direct economic threat the commercial fishing industry, the protracted damage will extend to the stability of the communities which depend on the income from the industry. The recreational fisheries will be similarly affected along with a myriad of businesses that depend on the recreational anglers for their economic future.

As a consequence of the Gulf of Mexico oil spill, the "what ifs" are staggering. What if a similar spill occurs off the mouth of the Chesapeake Bay, and equally sensitive ecosystem as the Gulf of Mexico? What if a similar species occurs of New Jersey or Delaware where highly sensitive systems of coastal lagoons exist? As we promote oil exploration, and we will, let us also consider the ecological risks associated with such activities and how we can be ready for them.

Respectfully yours,



Dr. Eric B. May

Research Scientist and Lecturer
NOAA Living Marine Resources Cooperative Science Center
University of Maryland Eastern Shore

The Honorable Barbara Boxer, Senator
Chair
Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, D.C. 20510

The Honorable James M. Inhofe
Ranking Member
Committee on Environment and Public Works

Attention Ms. Heather Majors

The following are my responses to follow-up questions from Senators Boxer and Carper regarding testimony before the Senate Committee on Environment and Public Works on May 11, 2010. I apologize for the delay in these responses however I was out of the state at the time they were provided and not in easy access to my email.

In reference to the questions from the Honorable Senator Boxer:

1. Dr. May your testimony outlined a variety of toxic, physical, and chronic effects of oil spills on multiple marine species and ecosystems. While we don't yet know the full extent of the Deepwater Horizon spill, it is likely it will have an impact on marine ecosystems across the Gulf.

Question - Based on your knowledge of other oil spills, what long-term, chronic impacts are possible due to the Deepwater Horizon spill?

Response – Now that the well is at least temporarily sealed, and we can assume following the completion of the relief wells which will put a deep kill preventing any additional loss of oil to the environment, we have at present an assessment of the amount of oil that has entered the Gulf from the Deepwater Horizon Spill. That amount has been set at over 200,000,000 gallons of crude oil based on the last information that I have. That amount is staggering and well in excess of the previous record from the Ixtoc Oil Well, which discharged approximately 140 million gallons where much of the oil did not reach aquatic systems. The Deepwater Horizon Spill has created a series of firsts as oil spills go:

1. This is the first time an oil spill of this magnitude has occurred in such an ecologically active region. While the Exxon Valdez was significant and in an ecologically sensitive area, it influenced a cold water region at a time of lower productivity.
2. The spill occurred in the spring, a time of intense biological activity, with the young of many marine species in the water column, and some species of animals such as marlin, tuna, marine reptiles and marine mammals beginning to reproduce.
3. It is the first time that I can find, where such unrestricted application of dispersants has been allowed. Some of these were experimental and proprietary so what their chemical nature is I cannot say. But suffice it to say the application was conducted on an unprecedented scale.

In addition to the above, many processes are now in play. These processes can be considered in some cases to be good, in others bad. They can be summarized as follows:

1. Dispersion –The oil, as either chemically dispersed or raw is being dispersed by the actions of wind and wave. While some would adhere to the philosophy that "the solution to pollution is dilution", it is however now been shown to be a poor philosophy. The problems have historically been spread over a larger area with broader impacts.
2. Bioremediation – There are microorganisms, principally bacteria which are capable of breaking down the hydrocarbons into constituent forms, primarily carbon. In most cases this does occur under anaerobic conditions (absence of oxygen) with the resulting byproducts causing little harm. It is a slow process and given the amount of oil released will require considerable time for it to be effective. In some cases however, shallow water conditions, the process takes oxygen out of the water, and thus has the potential to create anoxic zones which will have consequences.
3. Biotransformation, Bioaccumulation, Bioconcentration, Biomagnification – These are perhaps the more insidious and serious of the processes that are occurring. Given the thousand or more hydrocarbons of which PCBs and PAHs are but a part of as well as common metals including vanadium, nickel, iron and copper which V, Ni, Fe and Cu (other metals such as chromium, cadmium and molybdenum are also seen in some cases) as well as the amount of oil discharged these may pose a far greater problem that we may have previously thought.
    a. Biotransformation – This is the process similar to bioremediation; however in this case compounds are not broken down but rather altered into another form with different pharmacological and toxic properties. This is of concern for the hydrocarbons which can be metabolized and altered.
    b. Bioaccumulation – This is the process of assimilating and retaining compounds in the tissues of plants and animals. It is a somewhat passive process with both metals and organics being absorbed into the body both through the gills and gut by diffusion. As a general rule, metals tend to accumulate in tissues that are low in fat such as muscle, kidney and spleen while organics such as hydrocarbons accumulating in tissues that are high in fat such as brain and liver.
    c. Bioconcentration – This is a restricted term that is confined to the accumulation of metals and organics from water alone. It is similar to bioaccumulation in processes involved.
    d. Biomagnification – This is the process of concentrating metals and organics through movement from one trophic level to another. In the process of ingesting animals and plants at a lower trophic level, the herbivore or carnivore magnifies the amount of contaminant.
4. Absorption – For oil that has settled or is settling to the bottom, moving onto beaches and moving into marshlands there will be absorption into sediments and soils. In the Exxon Valdez spill the oil seeped down as far as 6 feet in the rock sand beaches. Metals will partition and react with the sediments and soils and slowly be released back into the water or taken up by burrowing animals. The hydrocarbons will both react with sediments and soils as well as

partition into the organic fractions. In both cases there will be slow release into the water or uptake by plants and burrowing animals.

Given the above situation and processes in play in the Gulf of Mexico, the following can be expected to happen:

1. Biotransformation and bioremediation will be occurring. With biotransformation the hydrocarbons will be altered to different forms some toxic some not. Bioremediation through bacterial action can be expected to help the situation but not at a slow rate. There will be chemicals that will enter the food chain and begin to move through the various trophic levels and depending on circumstances exert an effect.
2. Trophic inter actions will occur. As sediments and soils begin to accumulate the oil and dispersant chemicals burrowing organisms and organisms living on the surface of sediments will begin to feel the effect. For example, with the Amoco Cadiz spill of the coast of Normandy the oils continued to affect flat fish for greater than 10 years following the spill. Ulcers and skin cancers were the primary effect. Small organisms and plants can be expected to take up the oil and as they do so serve to transfer the oils chemicals into the food web. Through the processes of bioaccumulation, biomagnification and bioconcentration the chemicals will be concentrated and depending on exposure level and duration be expected to exert systemic effects in some of the animals (herbivores and carnivores).
3. Systemic effects will be:
    a. For the young slowed growth, loss of vitality, lower survival, low hatching rates, and probably change in sex ratios due to the estrogenic activity of many of the chemicals. These will be immediate and long term in duration, possibly 5 years or more. In one study eggs of flounder were exposed to contaminated sediments for less than two hours and as a result hatching will significantly reduced, larvae and fry had lower growth rates and survival. The concentrations in the sediments were far lower than that expected as a result of the Deepwater Horizon spill.
    b. For adults loss of weight, immune suppression, altered endocrine function (many of the compounds from both the oil and dispersants are endocrine disruptors), lower reproduction, lower survival of eggs, and feminization of males. These will be long term and last for over 5 years.
4. In predators the tissue concentrations can rise to a point where there will be the appearance of organ damage including liver degeneration, kidney degeneration and neuronal damage which will lead to reduced vitality and death. Liver cancers in fish can be expected to rise.
5. Fish stocks will be affected with loss of year classes due to immediate loss of young exposed to the oils. However, the protracted effects of contaminated sediments will result in loss of eggs and larvae for many years to come. As with the Amoco Cadiz, flatfish also showed lower recruitment for over ten years following the spill. I expect that the impacts will be on the bottom dwelling species more than the fish living in the water column.

6. In a broader perspective, the entire ecosystem has been altered. Loss of species diversity can be expected and with this a greater sensitivity of the system to disturbances. This will never return to normal, if it does it will take decades.

Question – Given the long-term impacts that are possible, do you feel that it is important that planning for oil exploration, including oil spill response plans, include detailed analyses of potential impacts of an oil spill?

I have reviewed some of the pertinent documents including environmental impact statements (EIS). I am exceedingly surprised that none of the documents addressed the potential for ecological harm. It is my view that for each well or group of wells (depending on location, some EISs would be redundant since wells may be in close proximity) that a complete EIS be required which must include the potential impacts of a spill using worst case scenarios. The EIS in place assumes no spill, except for minor leakage, thus no potential economic or ecological harm. We need to assume worst case, be prepared and act accordingly including evaluating the economic and ecological harm.

In reference to the questions from the Honorable Senator Carper:

What do you think are the chances of this oil moving into the Atlantic Coast? What tools should the government be using to prevent this from happening?

In reference to both, I am not the one to respond. One of the leading experts is Dr. William Boicourt of the University of Maryland Center for Environmental Studies, Horn Point Laboratories. He can be contacted at 410-221-8426 or boicourt@umces.edu.

Thank you for your patience in waiting.



Dr. Eric B. May
Associate Professor of Fisheries Science
University of Maryland Eastern Shore.

Senator BOXER. I think that last sentence summed it up pretty well.

I am very proud of our next panelist. Meg Caldwell is a member of the Stanford Law School faculty where she directs the Environmental and Natural Resources Law and Policy Program. She also serves as the Executive Director of the Center for Ocean Solutions, and she served on the California Coastal Commission.

And you know, I would say to you, when I heard—when I first heard about the spill, they started to talk about Venice because there is a little town called Venice, Louisiana. Well, we have a Venice, California, and I will tell you just hearing Venice just brought to mind the beachfront there, and it gave me the shivers just to think that, you know, this could happen to our State. It is a frightening thought.

So, we welcome you here.

STATEMENT OF MARGARET R. CALDWELL, DIRECTOR, ENVIRONMENTAL AND NATURAL RESOURCES LAW AND POLICY PROGRAM, SENIOR LECTURER IN LAW, STANFORD LAW SCHOOL; EXECUTIVE DIRECTOR, CENTER FOR OCEAN SOLUTIONS, STANFORD UNIVERSITY

Ms. CALDWELL. Thank you.

Chairman Boxer, Senator Whitehouse and dedicated staff, thank you for the opportunity to testify on the critical connection between healthy oceans and thriving ocean and coastal economies and how oil spills affect these linked human and natural systems.

Our Nation's ocean economy employs about 2.3 million people and pumps about $138 billion into our GDP. Two major biological and economic hot spots fueling this economy are the Gulf of Mexico and the Pacific waters off our western States.

These two remarkably productive, locally valuable and globally significant ecosystems account for about 90 percent of this Nation's wild commercial fisheries. In 2004 the total value of the Gulf States' ocean economies was estimated at $29 billion, while California's was valued at about $43 billion.

Tourism and recreation are the largest portion of our Nation's ocean economy, both in terms of jobs and dollar value. This industry, like fisheries, depends on clean, healthy and safe coastal and ocean environments.

The Gulf contains the greatest expanse of wetlands in the Lower 48, over 5 million acres. Its wetlands and oyster reefs provide vital shoreline protection, water filtration, nursery habitats for fisheries, as well as foraging and nesting habitats for scores of sea birds. Approximately 85 to 90 percent of fish and shellfish caught in the Gulf and 75 percent of the migrating water fowl that traverse the U.S. depend on the Gulf's habitats, these wetlands. The true value of these Gulf wetlands has been estimated by Professor Robert Costanza on the order of $26 trillion per year. That is $5,200 per wetland acre.

The Gulf is also home to 21 species of marine mammals and is the only known breeding ground in the Western Hemisphere for the endangered Western Atlantic bluefin tuna. My colleague, Dr. Barbara Block from Hopkins Marine Station, tracks these animals with electronic tags and knows that they reliably spawn at this

time of year in the area of the spill. And current tracking bears this out.

The Gulf also serves as the world's only nesting population for the most endangered sea turtle, the Kemp's ridley. These turtles are now in the peak of their nesting season and have been observed foraging near the Deepwater Horizon oil slick.

The inshore Gulf possesses a substantial shallow shelf supporting an abundance of benthic species, such as shrimp and crabs. They are particularly vulnerable to the effects of submerged oil which can persist in sediments at toxic levels for decades, as we have learned from the *Exxon Valdez*.

As Senators Cardin and Nelson pointed out, the outer Gulf is dominated by the Loop Current, a precursor to the Gulf Stream that baths the Atlantic seaboard. Economically important species such as tuna, snapper and grouper begin their life cycle as larvae in this conveyor belt, migrating from spawning grounds to coastal and oceanic areas where they reside as adults.

Drift seaweed, called Sargassum, also forms these mats, these vast mats on the current, providing a mobile nursery for the young stages of numerous fish and sea turtle species and providing a foundation for economically important fisheries.

Containing the Deepwater Horizon spill before it reaches the Loop Current is not only a priority for the Gulf species that I just mentioned but also for the highly biologically vulnerable and economically valuable Florida Keys shallow reef habitat. And this is exactly where the current passes through on its way to the Atlantic.

The history of oil exploration, production and transportation in the U.S. includes a number of notable, serious accidents and significant consequences. As Dr. Eric May pointed out, overall, hydrocarbons have been shown to affect marine organism survival, growth, physiology, behavior, and disease resistance.

The true economic impact of just the $11 million *Valdez* spill is still unknown. But recreational fishing revenues dropped by $580 million, and tourism revenues fell by $19 million just in the year of the spill alone. Many key species and human services still have not recovered. Recent spills in California, the Cosco Busan and the American Trader, were both much smaller but resulted in millions of dollars of resource and economic damage.

We still will not know, we still do not know, the full volume, duration or extent of this current spill. But what we do know is that, because the Gulf functions as a major economic and ecological engine of national importance, we should anticipate the true direct and indirect impacts of the spill to be substantial.

In short, the Deepwater Horizon spill will leave a legacy in economic and ecological terms that may endure for decades and in ways that cannot be simply reduced to dollars.

Thank you very much.

[The prepared statement of Ms. Caldwell follows:]

WRITTEN TESTIMONY OF
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HEARING ON ECONOMIC AND ENVIRONMENTAL IMPACTS OF THE RECENT OIL SPILL IN THE GULF OF MEXICO

BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
U.S. SENATE

MAY 11, 2010

Good afternoon Chairwoman Boxer, Senator Inhofe, and members of the Committee. I am Margaret Caldwell, a member of the Stanford Law School faculty, where I direct the Environmental and Natural Resources Law & Policy Program, and Executive Director of the Center for Ocean Solutions, a collaboration between Stanford University, the Monterey Bay Aquarium, and the Monterey Bay Aquarium Research Institute (MBARI). The Center's mission is to elevate the impact of the natural, physical and social sciences on ocean policy. Thank you for the opportunity to testify before you today on the critical connection between healthy ocean and coastal ecosystems and thriving ocean and coastal economies and our recent experience with oil spills and how they affect these linked human and natural systems.

Whether we live in a Gulf state, the Atlantic seaboard, along the Mississippi, around the Great Lakes, in New England, or on the west coast of the United States, we all share a common endowment: our coastal and ocean ecosystems and the goods and services they support and provide to each and every state in our union. Even those states lacking coastlines, those of our great deserts, high Rocky Mountains and the corn belt are inseparably linked to the health of oceans through commerce, climate, food resources, the air we breathe and water we drink, as well as for the security of our fellow citizens within our nation.

The National Ocean Economics Program's 2009 report provides a window on both the significance of the nation's ocean economy and its dependence on healthy coastal and marine ecosystems. The most recent comprehensive data available (2004) show that our ocean economy employs about 2.3 million people and pumps approximately $138 billion into our GDP, roughly equivalent to the U.S. insurance industry for jobs and motor vehicle parts industry for contribution to GDP.

Tourism and Recreation is the single largest portion of our nation's ocean economy both in terms of jobs (75%) and dollar value (51%). For example, in 2008, the Gulf of Mexico alone accounted for 30% of recreational fishing trips and almost 42% of the national recreation fishing catch. Louisiana's and Texas' coastal tourism and recreation industries are valued at $2 billion each (2004), and Mississippi's coastal tourism and recreation industry is valued at $200 million (2004). The Gulf state's coastal tourism and recreation will not prosper without clean, healthy, and safe coastal and ocean environments.

The Gulf of Mexico and Western Coastal State's Waters are among our Most Important Ocean Biological and Economic Hotspots.

My focus today is on the Gulf of Mexico and my own region of the Pacific on the west coast of the U.S., where we also have significant experience with oil spills. Put simply these are two remarkably productive, locally valuable, and globally significant ocean and coastal ecosystems. So much so that natural scientists who study these regions and know their role in the global ocean sometimes refer to these two regions as the Yellowstone and Yosemite of our nation's marine environment. Together these regions account for about 90% of this nation's wild commercial fisheries (the Pacific region accounted for 73.7% and the Gulf accounted for 16% of commercial fisheries landings in 2007). Economists report similar significance of these two regions to the nation's economic health. In 2004, the total value of the gulf state's ocean economies for all ocean-related sectors (marine related construction, living resources, minerals, non-military ship and boat building, tourism and recreation, and transportation) was $29 billion (Louisiana $12 billion; Texas $8.2 billion; Florida (Gulf Coast) $5.5 billion; Alabama $1.7 billion; and Mississippi $1.5 billion). While California alone is the largest ocean economy in the U.S., valued at $42.9 billion in 2000.

The Gulf of Mexico. The Gulf contains the greatest expanses of wetlands in the lower 48 states—over 5 million acres—and supports the world's largest remaining harvest of native wild oysters. The Gulf's remaining wetlands and oyster reefs provide vital shoreline protection, water filtration, nursery habitats for commercial and recreational fisheries as well as foraging and nesting habitat for scores of sea and shorebirds. Approximately 85-90% of fish and shellfish caught in the Gulf spend some portion of their life history in the wetlands and nearshore habitats of the Gulf and 75% of migrating waterfowl that traverse the U.S. pass through the Gulf on their annual migrations. The Gulf's coastal habitats are also vital nesting areas for dozens of ground-nesting species, including brown pelicans, royal terns, and laughing gulls. Not surprisingly, the Gulf is home to over 20 coastal National Wildlife Refuges.

The Gulf of Mexico is the only known breeding ground in the Western Hemisphere for the protected Western Atlantic Bluefin Tuna (December to July). It is also one of only two nesting habitats and the primary foraging ground for the world's most endangered sea turtle, the Kemp's Ridley sea turtle. These turtles are now in the peak of their nesting season and have been observed foraging for food near the Deepwater Horizon oil slick. Additionally, 21 species of marine mammals routinely inhabit the northern Gulf, including manatees which are presently

migrating back into their summer areas along the Louisiana coast, and the endangered sperm whale.

The Gulf possesses a substantial shallow shelf area (*see* Figure 1 below) that is benthic (seafloor habitat associated) dominated. As a result, species that make their living off benthic species, such as shrimp and crabs and their prey are particularly vulnerable to the effects of submerged oil. We know from previous oil spills that sediment-associated oil persists in the marine environment for many years and can be re-released in toxic concentrations.

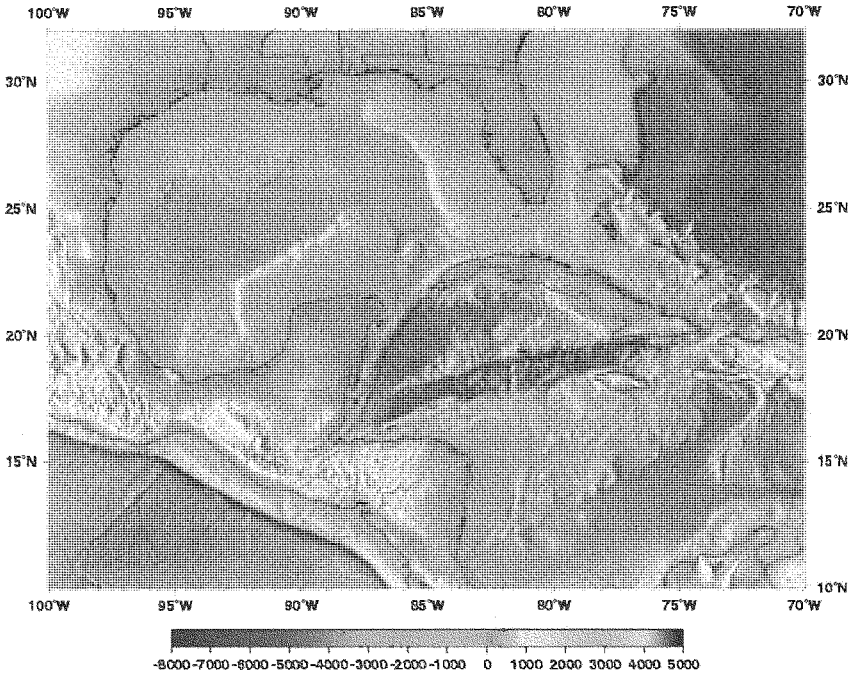


Figure 1.. Topography/Bathymetry of the Gulf of Mexico region. http://oceancurrents.rsmas.miami.edu/atlantic/img_topo2/loop-current2.jpg

The Gulf is dominated by the "Loop Current," a precursor to the Gulf Stream that bathes the Atlantic seaboard. The Loop Current (*see* Figure 2 below) flows clockwise from Texas, parallel with the shore, down to the Florida Keys, where it then flows through the Florida Straits and becomes part of the Gulf Stream. Many marine species use the Loop Current at key stages of

their life histories. Economically important species such as tuna, snapper and grouper begin their life cycle as larvae, awash in this current, taking advantage of the natural conveyer belt to migrate from spawning grounds to both coastal and oceanic areas where they will reside as adults. Some, such as lobsters, are now known to be retained by coastal eddies, cycling off the greater ocean current, thus highlighting the local vulnerability of discreet regions within the larger current system. The unique northwest Atlantic drift algae, *Sargassum*, also forms vast mats upon this current, providing a mobile nursery on par with seagrasses and mangrove wetlands in their role for nurturing the young stages of many fish species and four species of sea turtle. Drift algae also provide the singularly most important feeding habitat for other fishes such as the dolphinfish. Atlantic dolphinfish, directly dependent on *Sargassum* cycling out from the Gulf, are the most frequently taken fish on charter boats off Florida's east coast, and represent the most important offshore fishery in North Carolina. Containing the Deepwater Horizon oil spill before it reaches the Loop Current is a priority not only for these species and the human and biological communities who depend on them, but also due to the extremely high biological vulnerability and economic value of the Florida Keys' shallow coral reef habitat which the Loop Current passes through on its way to the Atlantic.

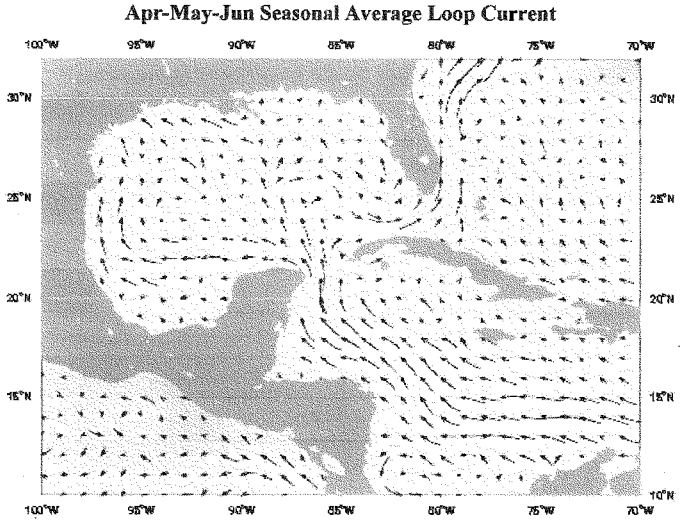


Figure 2. The average ship-drift derived surface velocities show the well-know omega-shaped flow pattern of the Loop current. The Loop Current (1) feeds the Florida Current that transports significant amounts of heat poleward; (2) transports surface waters of tropical origin into the Gulf of Mexico; and (3) is fed by the Caribbean current and the Yucatan Current. http://oceancurrents.rsmas.miami.edn/atlantic/loop-current.html.

The California Current Large Marine Ecosystem. The western states of Washington, Oregon, and California border the California Current Large Marine Ecosystem. It is one of only five large marine ecosystems on earth with seasonal upwellings of cold nutrient rich water that generate localized areas of high primary productivity. The California Current is the feeding ground of the northern Pacific Ocean for millions of marine birds, mammals, and fish, including many far-ranging, highly migratory species that annually travel far beyond our national waters, in some cases spanning the entire Pacific Ocean basin. It hosts amazing marine life, from blue and gray whales to elephant seals, white sharks, loggerhead turtles, sea otters, dolphins, and more than 80 species of groundfish. With several years of animal tagging data now logged and mapped, marine scientists are finding that many of the "bison" and "tigers of the sea" such as blue whales, orcas, and white sharks demonstrate strong fidelity to our western states' waters and use these regions as "home turf." Recognizing this natural bounty, California alone has 10 coastal National Wildlife Refuges, 4 National Parks and Recreation Areas, and over 100 State Parks in its coastal zone.

California's ocean economy ranks first overall in the U.S. for both employment and gross state product. And economic sectors that depend directly on clean ocean environments comprise the most important segments of the state's ocean economy (tourism and recreation, recreational and sports fishing, and commercial fisheries).

The Gulf and Western States of Alaska and California are home to U.S. Offshore Oil and Gas Production.

Another important commonality between the Gulf Coast states and the West Coast states, particularly California and Alaska, is that these regions are also home to our nation's offshore oil and gas industry. The Gulf of Mexico dominates the U.S. offshore oil and gas sector. The Gulf contributed 85% of U.S. offshore production in 2004, with the Central Gulf (state and federal waters off Louisiana) accounting for a full three quarters of oil and gas production. Together, Louisiana, Texas, Alaska, and California account for 90% of the employment in this sector and 95% of production.

Current and Past Ecological Consequences of Oil Spills.

The history of oil exploration, production and transportation in the U.S. includes a number of notable serious accidents with significant consequences for marine and coastal ecosystems and the coastal communities and economies linked to these vulnerable systems. While past oil spills are instructive for scoping likely effects of the Deepwater Horizon spill, I should emphasize that no two oil spills behave alike, even in similar marine environments. Oil spill impacts depend on the type, volume, season of the release, dispersal characteristics, duration of spill, and weather conditions. Before the Deepwater Horizon accident, the Exxon Valdez was the largest oil spill known to occur in U.S. waters. While we wait to see whether the Deepwater Horizon spill will eclipse the 10.8 million gallons of oil spilled from the Exxon Valdez, we have learned some important lessons from previous spills. (In a May 7, 2010 letter to colleagues, Dr. Robert W. Howarth from Cornell University observes that the average rate of spillage from the Deepwater Horizon has been estimated in the range of 170,000 to 630,000 gallons of oil per day. At the

upper range of spillage, he notes that by last week the Deepwater Horizon spill may have already matched the magnitude of the Exxon Valdez spill and at the lower rate, it will equal that spill by mid June if uncontained by that date.)

Oil spills incur direct and indirect effects on marine and coastal systems. Toxins contained in oil can directly kill organisms and can contaminate their tissues, which can then be passed through the food chain to other organisms, including humans through our consumption of seafood. In addition, when marine species come in direct contact with oil, they can experience physical effects from the oil in its various forms (liquid oil, emulsions, particles, and tar balls), including blocked or impaired feeding, decreased ability to photosynthesize or breathe, and impaired mobility and heat regulation. Nursery habitats such as the aforementioned drift *Sargassum* community of the Gulf are particularly vulnerable to hydrocarbon contamination. In fact, even prior to a major spill in the region, some 63% of post-hatchling loggerhead turtles found in association with this habitat have been observed to have tar in either their stomach or mouth. Dispersants do not actually remove oil from the system and may have their own toxic and physical effects on marine life. Overall, hydrocarbons have been shown to affect marine organism survival, growth, physiology, behavior, or disease resistance.

In 2003, scientists reported in the journal *Science*, that the ecosystems affected by the 1989 Exxon Valdez spill may take 30 years to fully recover. Last year, the Exxon Valdez Oil Spill Trustee Council's monitoring results were summarized by the Alaska's Deputy Attorney General in his draft report entitled "Legacy of an Oil Spill – 20 Years After the Exxon Valdez." His report states "the most stunning revelations of the Trustee Council-funded monitoring over the last ten years is that the Exxon Valdez oil persists in the environment (last year NOAA Fisheries estimated that about 16,000 gallons of oil remain in intertidal areas, for example) and in places, is nearly as toxic as it was the first few weeks after the spill."

What is the ecological legacy of the Exxon Valdez? Here are some important statistics:

- 250,000 seabirds died (about 40% of the pre-spill population).
- Twenty years later, Pacific herring populations remain depressed and have shown little to no improvement. Pacific herring larvae showed malformations, genetic damage and size reduction. The pre-spill annual catch average was 20 million fish. To date, the commercial fishery remains closed and Pacific herring are now being considered for listing under the Endangered Species Act. Pacific herring is also a vital food source for seabirds in the region; therefore there is great uncertainty about the region's seabird population's long-term sustainability.
- Sea otters born in Prince William Sound after the oil spill had lower survival rates than those born in other areas.
- Salmon populations experienced reduced growth rates and increased egg mortality.
- The two groups of orcas (killer whales) observed in the oil slick following the spill lost approximately 40% of their numbers by 1990. One of the pods now shows signs of recovery, while the other pod shows no signs of recovery and continues to decline.

Researchers have measured accumulations of chlorinated hydrocarbons in orcas frequenting the area.

- Two species are now listed as "not recovered" (Pacific herring and pigeon guillemots); ten species and four human services are listed as still "recovering" (killer whales, sea otters, clams, mussels, harlequin ducks, black oystercatchers, barrows goldeneyes, sediments, intertidal communities, and Designated Wilderness, commercial fishing, recreation and tourism, subsistence, and passive human uses).

The true economic impact of the spill may never be fully accounted for. We do know, however, that recreational fishing revenues dropped by $580 million and recreation and tourism revenues dropped by $19 million the year of the spill alone. Commercial fishing and recreation and tourism are still considered to be "recovering" in the spill area.

Recent spills in California—Cosco Busan (53,569 gallons, San Francisco Bay, 2007) and American Trader (416,598 gallons, Huntington Beach, 1990)—were both much smaller than the Deepwater Horizon spill. Yet both resulted in significant seabird mortality and affected large swaths of coastline. The Cosco Busan spill resulted in a one-month closure for fishing for human consumption in San Francisco Bay and coastal waters between Pt. Reyes and San Pedro Point. The spill delayed the start of one of California's most lucrative fisheries, the Dungeness crab fishery, and impacted both commercial and recreational fisheries for Pacific herring, Dungeness crab, shiner surfperch, red rock crabs, and mussels. The American Trader spill resulted in damage awards for impacts to recreational activities at $13.2 million and combined environmental impacts at $3.1 million.

Conclusion

It is still too early to tell what the extent of the ecological and economic losses caused by the Deepwater Horizon spill will be because we don't yet know the full extent of the volume of oil released and the ultimate duration of the release. Nor do we know how far the spill will spread or the concentrations of oil for specific sites. These are all critical facts for understanding the breadth of the economic and ecological losses we can expect. However, in large part due to the natural processes of ocean circulation and bioaccumulation, we can assume the geographic range of impact to be quite high. Furthermore, we know that this spill is occurring at a time of year that is critical to many of the species, industries and communities that depend directly on the health of the Gulf and the sensitive habitats that this spill will directly affect. We also know that the spill has not yet been fully contained. Unlike an oil tanker spill, like the Exxon Valdez, oil rig blowouts have no known maximum limit. Because the Gulf of Mexico and the coupled human and natural communities that border the Gulf function as a major economic and ecological engine regionally and nationally, we should anticipate the true direct and indirect impacts of the spill to be substantial. In short, the Deepwater Horizon spill will leave a legacy in economic and ecological terms that can endure for decades, and in terms that cannot be reduced to dollars.

Chairwoman Boxer and members of the Committee, thank you for the opportunity to address you today.

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Senator BOXER. Thank you very much.

Lieutenant General Thomas G. McInerney is a retired member of the United States Air Force. He was the Department of Defense Coordinator during the response to the *Exxon Valdez* oil spill from March 24 to September 15, 1989, and will testify regarding the lessons DOD learned in responding to the *Valdez* spill.

Thank you so much.

STATEMENT OF THOMAS G. MCINERNEY, LIEUTENANT GENERAL, U.S. AIR FORCE (RETIRED)

Mr. MCINERNEY. Thank you, Madam Chairman, Senator Whitehouse.

It is a privilege to appear before you and testify about DOD lessons learned as the DOD Coordinator during the *Exxon Valdez* oil spill from 24 March to 15 September, 1989, in Prince William Sound while I was the Commander of Alaskan Command.

The U.S. Government has reorganized significantly with the creation of the Department of Homeland Security and the creation of Northern Command within DOD. And these changes are all positive with respect to my comments today.

A quick refresh for the Committee on the DOD assets provided may be useful. Our initial support was an improvised command and control system called OASIS that provided the on scene Coast Guard Coordinator, Vice Admiral Clyde Robbins, and the Exxon coordinator with a visual digital map display of the oil spill location, beaches and other oil covered areas, sensitive environment and wildlife areas.

In addition, the U.S. Navy provided two amphibious ships, *Juneau* and *McHenry*, for use as boatels to house the 11,000 workers who eventually worked in the area until Exxon could provide specially constructed barges to house them.

I will now outline what I think were the most important lessons learned for military support to the oil cleanup operations based on this experience.

Northern Command should be part of any initial task force established by DHS and the oil company responsible. Rapid formation is critical to ensure success.

A joint force commander should be assigned to support the on scene Coast Guard Coordinator immediately. He and his staff should have the knowledge to provide systems and technology appropriate to support him, such as imagery from satellites or Unmanned Aerial Vehicles, or manned aerial reconnaissance surveillance such as the U–2 with its unique spectral imagery.

These new technologies should be immediately deployed to give the national command authorities and all appropriate agencies involved the situational awareness that will enable swift identification of common cleanup objectives. I cannot emphasize this enough.

The dominant responsibility of the oil company versus the U.S. Government was established for clean up, I believe, after the *Exxon Valdez* disaster. Therefore, I feel it is paramount that soldiers not be used for these manual operations.

I do not object if specifically equipped Navy ships are used, as we did in Prince William Sound, or if the Navy has specific, specially equipped skimmers to assist. I feel that these disasters im-

pact the local community so severely that the local population should benefit from the temporary jobs creation and for protection of their local environment.

I mentioned earlier the OASIS command system that was immediately established as a command and control system for cleanup operations. This was of great value for all, especially the Exxon on scene coordinator along with his Coast Guard Commander. However, once the Exxon lawyers discovered that Exxon was funding this near real time information tool, they terminated this valuable tool for fear that the U.S. Government would have too much information for later legal battles.

We should not have let this happen. But this advance command and control capability was not well understood at the time, and frankly there were too many other windmills to fight.

With reference to the current oil spill in the Gulf and the relevancy of the *Exxon Valdez* experience, I would only say that the laws and protocols were changed and are in force today, which has enabled Secretary Napolitano and Admiral Allen to work very effectively with BP.

There is no question that this oil spill is far more challenging with respect to the source from a surging well 5,000 feet below sea level. At the same time, the Gulf is not nearly as remote, and support assets are far more readily available to support the Oil Spill Task Force. This is an important plus.

I would suggest that we have not used all of our latest imagery assets such as UAVs like Global Hawk or reapers and U–2 aircraft. I would do a test immediately to demonstrate the value of continuous digital radar, infrared and electro optical displays that will show the coordinators the exact positioning of the oil slicks, location of the over 300 ships to date supporting the coordinators, fouled beaches, and sensitive areas. This real time digital picture will be of immense value, I believe, and should be considered for use by DHS in all future disaster areas.

We must develop the procedures to keep the national leadership and Governors' situational awareness. Today, we give our battlefield commanders this capability, but not our leadership in CONUS. Satellites are helpful but not continuously real time.

In summary, Madam Chairman, I believe most of the lessons learned from DOD's experience in the *Exxon Valdez* disaster have been incorporated in the Gulf today with the exception of near real time imagery for command and control for modern UAVs.

Thank you.

[The prepared statement of Mr. McInerney follows:]

TESTIMONY TO THE SENATE COMMITTEE ON ENVIORNMENT
AND PUBLIC WORKS
BY
THOMAS G. MCINERNEY LT GEN USAF (RETIRED)
May 11, 2010

MADAM CHAIRMAN AND MEMBERS OF THE SENATE COMMITTEE ON ENVIORNMENT AND PUBLIC WORKS, IT IS A PRIVILEGE TO APPEAR BEFORE YOU AND TESTIFY ABOUT DOD LESSONS LEARNED AS THE DOD COORDINATOR DURING THE EXXON VALDEZ OIL SPILL FROM 24 MARCH TO 15 SEPTEMBER 1989 IN PRINCE WILIAM SOUND, ALASKA WHILE I WAS THE COMMANDER OF ALASKAN COMMAND.

THE US GOVERNMENT HAS REORGANIZED SIGNIFICANTLY WITH THE CREATION OF THE DEPARTMENT OF HOMELAND SECUTIY (DHS) AND THE CREATION OF NOTHERN COMMAND (NORTHCOM) WITHIN DOD, AND THESE CHANGES ARE ALL POSITIVE WITH RESPECT TO MY COMMENTS TODAY.

A QUICK REFRESH FOR THE COMMITTEE ON THE DOD ASSETS PROVIDED MAY BE USEFUL. OUR INITIAL SUPPORT WAS AN IMPROVISED COMMAND AND CONTROL SYSTEM CALLED OASIS (OIL AREA SURVEILANCE INFORMATION SYSTEM) THAT PROVIDED THE ON SCENE COAST GUARD COORDINATOR, VICE ADMIRAL CLYDE ROBBINS AND THE EXXON COORDINATOR WITH A VISUAL DIGITAL MAP DISPLAY OF THE OIL SPILL LOCATION, BEACHES AND OTHER OIL COVERED AREAS, SENSITIVE ENVIORNMENT AND WILDLIFE AREAS. IN ADDITION, THE USN PROVIDED TWO AMPHIBOUS SHIPS, JUNEAU AND MCHENRY, FOR USE AS BOATELS TO HOUSE THE 11,000 WORKERS WHO EVENTUALLY WORKED IN THE AREA UNTIL EXXON COULD PROVIDE SPECIALLY CONSTRUCTED BARGES TO

HOUSE THEM.

WHAT WE DID NOT PROVIDE WAS MANPOWER TO CLEAN UP THE BEACHES WHICH BECAME A VERY CONTENTIOUS ISSUE WITH SENATORS STEVENS AND MURKOWSKI WHOM FELT THE 6TH INFANTRY DIVISION SHOULD HELP. I WAS STRONGLY OPPOSED AND PRESIDENT BUSH MADE THE FINAL DECISION WITH SUPPORT FROM SECRETARY OF DEFENSE CHENEY TO NOT USE SOLDIERS FOR THE CLEAN UP OPERATIONS. INSTEAD EXXON HIRED LOCAL WORKERS (THE UNEMPLOYMENT AT THAT TIME WAS 8% IN ALASKA) WHICH PROVED TO BE VERY SUCCESSFUL AND I BELIEVE A PRECENDANT FOR FUTURE CLEAN UP OPERATIONS. THE MILITARY SHOULD NOT DO WHAT THE PRIVATE SECTOR CAN DO EQUALLY AS WELL OR BETTER.

I WILL NOW OUTLINE WHAT I THINK WERE THE MOST IMPORTANT LESSONS LEARNED FOR MILITARY SUPPORT TO OIL CLEAN UP OPERATIONS BASED ON THIS EXPERIENCE:

1. DOD, NOW NORTHCOM, SHOULD BE PART OF ANY INITIAL TASK FORCE ESTABLISHED BY DHS, STATES, LOCAL COUNTIES AND THE OIL COMPANY RESPONSIBLE. RAPID FORMATION IS CRITICAL TO SUCCESS.

2. A JOINT FORCE COMMANDER SHOULD BE ASSIGNED TO SUPPORT THE ON SCENE COAST GUARD COORDINATOR IMMEDIATELY. HE AND HIS STAFF SHOULD HAVE THE KNOWLEDGE TO PROVIDE SYSTEMS AND TECHNOLOGY APPROPRIATE TO SUPPORT HIM SUCH AS IMAGERY FROM SATELLITES OR UNMANNED AERIAL VEHICLES (UAV'S), OR MANNED AERIAL RECONNAISSANCE AND SURVEILANCE SUCH AS THE U-2 WITH ITS UNIQUE SPECTRIAL IMAGERY.

THESE NEW TECHNOLOGIES SHOULD BE IMMEDIATELY DEPLOYED TO GIVE THE NATIONAL COMMAND AUTHORITIES AND ALL APPROPRIATE AGENCIES INVOLVED THE SITUATIONAL AWARENESS (SA) THAT WILL ENABLE SWIFT IDENTIFICATION OF COMMON CLEAN UP OBJECTIVES. I CAN NOT EMPHASIZE THIS ENOUGH.

3. THE DOMINANT RESPONSIBILITY OF THE OIL COMPANY'S VERSUS THE USG WAS ESTABLISHED FOR CLEAN UP, I BELIEVE, AFTER THE EXXON VALDEZ DISASTER AND THEREFORE I FEEL IT IS PARAMONT THAT SOLDIERS NOT BE USED FOR THESE MANUAL OPERATIONS. I DO NOT OBJECT IF SPECIALLY EQUIPPED NAVY SHIPS ARE USED AS WE DID IN PRINCE WILLIAM SOUND OR IF THE NAVY HAS SPECIALLY EQUIPPED SKIMMERS TO ASSIST. I FEEL THAT THESE DISASTERS IMPACT THE LOCAL COMMUNITY SO SEVERLY THAT THE LOCAL POPULATION SHOULD BENEFIT FROM THE TEMPORARY JOB CREATION AND FOR PROTECTION OF THEIR LOCAL ENVIORNMENT.

4. I MENTIONED EARLIER THE OASIS COMMAND SYSTEM THAT WAS IMMEDIATELY ESTABLISHED AS A COMMAND AND CONTROL SYSTEM FOR CLEAN UP OPERATIONS. THIS WAS ADAPTED FROM MY JOINT COMMAND AND CONTROL SYSTEM AND GAVE ALL PLAYERS AN EXCELLENT SA TOOL ,TO INCLUDE SECRETARY OF TRANSPORTATION SAM SKINNER AND THE COAST GUARD COMMANDANT ADMIRAL YOST, NEAR REAL TIME KNOWLEDGE ON HOW THE OPERATIONS WERE GOING FROM THEIR OFFICES IN WASHINGTON. EVERYBODY KNEW WHERE THE PRIMARY SLICKS WERE, WHAT BEACHES AND SENSITIVE AREAS WERE FOULED WITH OIL, HOW MANY SHIPS AND CREWS WERE WORKING

THE BEACHES ETC.

THIS WAS OF GREAT VALUE FOR ALL ESPECIALLY THE EXXON ON SCENE COORDINATOR, ALONG WITH HIS CG COMMANDER. HOWEVER, ONCE THE EXXON LAWYERS DISCOVERED THAT EXXON WAS FUNDING THIS NEAR REAL TIME INFORMATION, THEY TERMINATED THIS VALUABLE TOOL FOR FEAR THAT USG WOULD HAVE TOO MUCH INFO FOR LATER LEGAL BATTLES. WE SHOULD NOT HAVE NOT LET THIS HAPPEN BUT THIS ADVANCE COMMAND AND CONTROL CAPABILITY WAS NOT WELL UNDERSTOOD AT THE TIME AND THERE WERE TOO MANY OTHER WIND MILLS TO FIGHT.

WITH REFERENCE TO THE CURRENT OIL SPILL IN THE GULF AND THE RELEVENCY OF THE EXXON VALDEZ EXPERIENCE, I WOULD ONLY SAY THAT THE LAWS AND PROTOCOLS WERE CHANGED AND ARE IN FORCE TODAY WHICH HAS ENABLED SECRETARY NAPOLITANO AND ADMIRAL THAD ALLEN TO WORK VERY EFFECTIVELY WITH BP. THERE IS NO QUESTION THAT THIS OIL SPILL IS FAR MORE CHALENGING WITH RESPECT TO THE SOURCE FROM A SURGING WELL 5,000 FEET BELOW SEA LEVEL . AT THE SAME TIME THE GULF IS NOT NEARLY AS REMOTE AND SUPPORT ASSETS ARE FAR MORE READILY AVAILABLE TO SUPPORT THE OIL SPILL TASK FORCE. THIS IS AN IMPORTANT PLUS. I WOULD SUGGEST THAT WE HAVE NOT USED ALL OUR LATEST IMAGERY ASSETS SUCH AS UAV'S LIKE GLOBAL HAWK OR REAPERS AND U-2 AIRCRAFT. I WOULD DO A TEST IMMEDIATELY TO DEMONSTRATE THE VALUE OF CONTINUOUS DIGITAL RADAR (SAR),INFARED AND ELECTRO OPTICAL DISPLAYS THAT WILL SHOW THE COORDINATORS THE EXACT POSITIONING OF THE OIL SLICKS, LOCATION OF THE

OVER 1,000 SHIPS SUPPORTING HIM, FOULED BEACHES AND SENSITIVE AREAS ETC. THIS REAL TIME DIGITAL PICTURE WILL BE OF IMMENSE VALUE I BELIEVE AND SHOULD BE CONSIDERED FOR USE BY DHS IN ALL FUTURE DISASTER AREAS. WE MUST DEVELOP THE PROCEDURES TO KEEP THE NATIONAL LEADERSHIP AND GOVERNORS SITUATIONAL AWARENESS. TODAY WE GIVE OUR BATTLE FIELD COMMANDERS THIS CAPABILITY BUT NOT OUR LEADERSHIP IN CONUS. SATELLITES ARE HELPFUL BUT NOT CONTINUOUSLY REAL TIME.

IN SUMMARY MADAM CHAIRMAN, I BELIEVE MOST OF THE LESSONS LEARNED FROM DOD'S EXPERIENCE IN THE EXXON VALDEZ DISASTER HAVE BEEN INCORPORATED IN THE GULF TODAY WITH THE EXCEPTION OF NEAR REAL TIME IMAGERY FOR COMMAND AND CONTROL FROM MODERN UAV'S.

Senator BOXER. Thank you so much, Lt. General.

And I want to say that you all were fantastic witnesses because you took a little slice of each of the issues that you are facing.

And I wanted to say that if there is some way that Senator Inhofe and I could with you, Lt. General, because maybe it would be good to sit down with, for example, Janet Napolitano, and give her some of your information. Would you be willing to do that?

Mr. MCINERNEY. Absolutely, Madam Chairman.

Senator BOXER. Are you in the area?

Mr. MCINERNEY. Yes.

Senator BOXER. Good. Excellent. We will work with that.

Mr. MCINERNEY. And I am readily available for any assistance you need.

Senator BOXER. I mean, some of the things you said were just so right on target.

I have asked Senator Whitehouse to ask a few questions, if he has some, and close down the hearing.

I just want to say, again, thank you for your patience. What a day. I mean, I did not anticipate we would take so long, but I think we really had to.

And I think, Mr. Overton, your point that you heard what BP said about paying the full costs. And so I think it would be great to write him a letter and say you sat through this, and on behalf on your tourism board you look forward to sitting down with him in the near future.

Because when you said that already there are cancellations, my heart stopped because that is just—as we try to get out of this recession, this is not what we want. It was not what we need. So, we need to stop the oil from getting over there, and we need to make sure people know that they should still go to Florida.

Thank you.

And so I turn it over to Senator Whitehouse.

Senator WHITEHOUSE [presiding]. Thank you, Madam Chair, and I will not be long. I know it has been a very long day for the witnesses. I am very grateful for your testimony and for your travel here and for your participation in our hearings as we begin to look into this really extraordinary occurrence.

I just had a few questions that I would like to go through. The first, Dr. May, has to do with dispersants. You talked about the effect of dispersants in your testimony. Could you describe for me a little bit more clearly, if you would, how it is that a dispersant works and what the environmental advantage is of adding dispersants to an oil spill, particularly an oil spill of this magnitude?

Mr. MAY. A dispersant really is a chemical that—much like oils in the stomach, it surrounds small droplets of oil, makes them repulse one another and also sink to the bottom of the ocean. The application of dispersants is considered controversial. I have read papers that essentially said this is a great idea, and I have read others that come with the feeling that there is a biological risk associated with dispersants.

They break apart, then fall to the bottom. Prevailing currents on the bottom can bring the oil back up on shore. The dispersants themselves will more readily bio-degrade because there is bio-deg-

radation that does occur. But nonetheless, it does go to the bottom and can affect bottom dwelling organisms, benthic organisms, organisms that live—the upper benthics, that live a little bit off the bottom.

Senator WHITEHOUSE. If you were to take the water column and divide it into tranches, is it possible that the use of dispersants can minimize the effect or the harm at the surface of the water column but increase the harm at the bottom of the water column by accelerating the transit of oil to the benthic layer?

Mr. MAY. It is going to go, as it goes down through the water column, larvae, the zooplankton, the larvae will be exposed to the oil. As it hits the bottom, it will spread out, and that is where it will be exposed to too many of the benthic organisms and our young larvae that have just settled.

Senator WHITEHOUSE. In the water column from the surface top of the water down through to the benthic layer, at this time of year, which is the most productive part of the water column; at this point is there more larval activity and so forth going on at the benthic layer than on the surface?

Mr. MAY. Depending on how close you are to the shore. If you are at 5,000 feet, 1 mile, it is within the Photic Zone, which is approximately maybe 100 feet, you have zooplankton, you have a very biologically active area, you have floating larvae; the fish larvae are feeding off of some of the phytoplankton. It is pretty much a very dynamic system, and as that oil moves through it will go ahead and be exposed to that.

I think the argument is, is the alternative of having the floating oil stay and move in shore, is it worse than the risk of having it dispersed and sank? I have mixed emotions about that.

Senator WHITEHOUSE. Is that argument to be made that the dispersants have more of a cosmetic effect by making it no longer visible on the surface than an actual benefit environmentally in the long run?

Mr. MAY. I am not qualified at this point to say that. I do not think we really fully understand the risks associated with dispersants, particularly since the literature is at odds with itself.

Senator WHITEHOUSE. But in your view there is some value in accelerating the bio-degrading of the oil on a net basis? You know, if you set aside the question of where it takes place and what the most productive areas are that the oil may or may not go to, all other things being equal, there would some enhanced bio-degrading effect of the use of dispersants?

Mr. MAY. Yes. And I think you also have to kind of consider the consequence of the other side of it, too, which is if this oil slick gets to some of those marshlands, some of the wetlands, those are like sponges, they are going to absorb that oil, and so as it floats on the surface it is going to pose—when it gets on shore, it is going to pose a significant risk.

Senator WHITEHOUSE. And those are exceedingly rich and productive areas, the marshlands?

Mr. MAY. Yes. Very rich. And so this is one where you are going to have run some, you know, you are going to have to look at the risks versus the benefits. And I think in this case you may be finding that the benefits outweigh the risks.

Senator WHITEHOUSE. Yes.

Dr. Bortone, you talked about the various fisheries impacts. I do not know if you are an expert in this area, but I found it a little bit difficult in your testimony to, in my mind, sort out which of those fisheries impacts would be recoverable as natural damages, natural restoration versus what would count as economic damages and potentially be subject to the $75 million limitation on economic damages. Have you looked at the fisheries damages that you talked about through that perspective?

Mr. BORTONE. We have not because, as you pointed out, it is difficult to weigh that. What is the economic versus the ecological damage that we see? There is—right now we talked about cancellations of hotels. But people are canceling fishing trips already. So, that kind of thing is already occurring, and that will be calculable, but at some time in the future.

Senator WHITEHOUSE. But it is not a natural resource damage.

Mr. BORTONE. No. The natural resource damage that we are concerned about in the fisheries management side is we have plans in place to restore fisheries. We are going to be taking several steps back, maybe many steps back, still trying to recover these already damaged fisheries. And so it is time lag, but that time lag involves economics as well.

Senator WHITEHOUSE. Ms. Caldwell, first of all, congratulations on your service on the California Coastal Council. My wife was, for years, the Chairman of Rhode Island's Coastal Council, and I am familiar with the good work of the CC agencies around the country.

California has dealt with offshore drilling. You see what is happening in the Gulf. You are an experienced regulator as well as a teacher in this area. What conclusions do you draw about the risks that offshore drilling presents based on this, and what policy would you recommend with respect to further drilling or exploration?

Ms. CALDWELL. Thank you for that question. It is not an easy one to answer. But let me just share with you my experience on the California Coastal Commission when I served as Chair.

Thirty-six oil leases under MMS just actually came up before the Coastal Commission for consistency review under CZMA. And so, that gave the Commission an opportunity to look at the kinds of risks, not all perfectly analogous, but the nature of the risks associated with offshore oil exploration and ultimately production.

And in that case we actually found that there was insufficient information provided to us by MMS to actually fully characterize the risks. And on that basis we actually denied consistency review.

I think this goes to the very heart of the problem that we have before us here, which is, were the risks appropriately characterized before Deepwater Horizon was put into place? Could we have done a better job of evaluation? Based on my review of the environmental documents, I would say yes. So, I think attention really needs to be paid to better characterization of the risks and the degree of harm that is possible, especially in vulnerable areas like the Gulf that we know are highly sensitive to this kind of incident.

Senator WHITEHOUSE. General McInerney, we have had oil spills in Rhode Island. We had the North Cape Scandia oil spill. Before that we had the, I think it was called the Royal Prodigy oil spill.

In both of those cases, like the *Exxon Valdez* oil spill which you were in charge of responding to, there was a vessel with a limited amount of oil in it and you knew from the beginning, at least in one dimension, the amount of oil, what your worse case scenario was going to be. And you had the ability to plan a timing horizon around the result, knowing what your exposure was.

This is a different problem because without successful efforts to cap or close off the leak it could be going on, as far as we know, indefinitely. And that creates an entirely different set of questions and concerns for somebody in charge of responding.

Could you specifically address how you see the continuing nature of this threat that is creating differences from *Exxon Valdez*, or other type spills, that we should be attentive to here in Congress?

Mr. MCINERNEY. When we responded, Senator, we knew exactly what we had almost immediately, 11 million gallons. What we do not know here is how long this will go, and clearly it is far more technologically difficult than any oil spill, I think, in history.

When we went into Iraq in Desert Storm and Saddam Hussein torched those wells, we were able to have a finite handle on them and cap them in a certain timeframe. This, because of the 5,000-foot depth, is going to be, I believe, enormously difficult, and it could go on, as some of the previous speakers mentioned, it could exceed *Exxon Valdez*.

Now, the heart of this is you have a continuous source, and you have got to be able to minimize the impact of the spill and the damage. There is no question that the outrage really has not come yet until you see it on the beaches like we saw it on the beaches in Prince William Sound, which we saw relatively quickly. And so, frankly, it has been rather muted.

But once it starts rolling up on those beaches, in Panama City and those white beaches, in Alabama and Mississippi and New Orleans, then the outrage is going to go into political pressure to get something done.

And that is why I feel that having a much better visibility on exactly where that oil is going. The dispersants we found up there, and the scientists that we worked with, you tended to break up the larger areas and some goes down. It mitigates the problem instead of having this huge blob hit the beaches. So, it helps mitigate it. But there are still problems without it, no question.

But the scientists up there, and I think that we ought to research what they found because now it is 20 years, and discover the impact of the dispersants. In any case, it is better than having a huge blob hit the shore.

In addition to what skimming can do, the water temperature is warmer so they can burn it off there. So, there are a lot of good, or more positive factors, to mitigate this impact. But again, you hit it. This source is continuing to gush out at 5,000 barrels a day. And that impact, none of us will really know, can fully understand. We just hope to get it terminated.

And so you have the two problems, the continuing source and then, as it moves closer to the shores, on how much they are able to contain burn off, disperse, skim, all the different techniques. Finally, when it gets up to the beach, how they are able to clean this

up. And this is going to be a very, very demanding, I believe, situation for months and months, perhaps years to come.

Senator WHITEHOUSE. Of course, there is a storm season in the Gulf when the hurricanes generated across the Caribbean tend to sweep through, and that would, obviously, severely compromise any kind of activities outside on the water or nearby.

Mr. MCINERNEY. Another complication. The intense wave action tends to break it up also, and it drops down, but eventually it can come up. So, they do have that problem that they will be facing very shortly, the hurricane season. So, they have a lot of challenges out there.

This is going to be very demanding. But that is why I believe there ought to be a digital picture so that those coordinators can see, using the new technology, of where this oil spill is going so to get in front of the problem. And when it is coming to sensitive areas, what they can do.

Right now, they may be doing that, but I do not think they have nearly the tools with a satellite to get an electro optical, it is a LEO, low Earth orbital, and so it comes back every 4 to 6 hours or whatever it is, not the same place. Whereas I think they need a continuous picture of what is going on. So, that is why I believe certainly test to see what the new technology can do to help us.

Senator WHITEHOUSE. I appreciate that, General.

Last question, Mr. Overton, is the $75 million cap on economic damages under the prevailing law, how does the Florida Restaurant and Lodging Association feel about the adequacy of $75 million to make whole the businesses in Florida that may be struck by this, assuming that all $75 million were to go to Florida, which is kind of a hypothetical?

Mr. OVERTON. I will echo Mr. McKay's comments in that that $75 million cap does not exist anymore because he just took it away. So, we are looking to them to fund whatever it takes to get tourism back on track. And as I said earlier, it is already struggling and this is just, you know, the nail in the coffin for us, so to speak, if we do not get this under control, and we do not get the word out that Florida is healthy and its beaches are beautiful.

Senator WHITEHOUSE. Well, let us assume that we can take Mr. McKay's word for that. But in the spirit of—I think it was President Reagan who said trust but verify, it may be better to get that in writing before you rely on it too much. And in the event that, by the time the lawyers are done with it, that promise gets a little spongier than it might seem right now. Does $75 million take a very big bite out of the consequential damages that you foresee?

Mr. OVERTON. No. It does not touch it, honestly. And we know that from historical data in 2005 when we spent, you know, $50 million on the promotion of tourism.

But I will compliment you, Senator Whitehouse. The legislation that you put forth today for an independent commission will help us along the way in that regard. And I appreciate your championing that initiative. We think that is very important, and it is going to help in that regard.

Senator WHITEHOUSE. Well, we, I appreciate you mentioning that. We also, that was sponsored by Chairman Boxer and by Sen-

ator Menendez, so I am delighted that the two of them joined in that.

We also put forth a bill co-sponsored by Chairman Leahy of the Judiciary Committee to reverse the limitation on punitive damages that the U.S. Supreme Court chose to protect Exxon with, and also to improve civil and criminal penalties under the Outer Continental Shelf Lands Act, which supervises offshore drilling. So, I hope that trio of bills will help be responsive to this.

It is just about a minute before 7. You have all been here much longer than you expected to be. I just want to close by reiterating Chairman Boxer's appreciation to all of you for weathering through the long day that you have had here, sharing with us your experience and your expertise. It has been very valuable.

The hearing will stay open for an additional week if anybody chooses to add anything to the record of the hearing. But this particular hearing is now adjourned. Thank you.

Two weeks. Change it to 2 weeks.

[Whereupon, at 6:58 p.m., the full Committee was adjourned.]