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House Committee on Natural Resources

"GULF OF MEXICO: A FOCUS ON COMMUNITY RECOVERY AND NEW RESPONSE TECHNOLOGY"

April 18, 2011

Chairman Hastings, Ranking Member Markey, and members of the Committee, thank you for the invitation to testify today. The question of the appropriate technological response to what this nation learned at the Macondo site in the Gulf of Mexico is central to responsible policy. As the head of a team called upon to lead the response to that situation, I believe Helix Energy Solutions' experience can be of assistance to the Committee as it evaluates response policy going forward.

Helix provides life-of-field services and development solutions to offshore energy producers worldwide, and is a leader in the provision of containment solutions for undersea well control incidents. Since the events that began unfolding at the Macondo well nearly one year ago today, there has been a great deal of interest among all Americans – and rightfully so – about how our industry can most effectively prepare itself to respond to an undersea blow-out and oil spill as we go about the business of harvesting our nation's critical offshore natural resources. We are pleased to have the opportunity to share our considerable experience on the subject at hand today.

The provision of effective oil well containment capability plays an essential role in facilitating responsible energy development in the deep waters of the U.S. Gulf. Helix stands ready to assist industry in providing the benefit of its expertise and resources immediately. Helix has participated in hundreds of deepwater well intervention efforts around the world for more than 15 years.

Most relevant to today's discussion, Helix vessels were enlisted to play a key on-site role in the Macondo Incident Control and Spill Containment effort following the April 2010 blowout. Three Helix vessels – the Q4000, the Express and the Helix Producer I – were instrumental in successfully bringing the deepwater blowout under control. A fourth Helix vessel, the Normand Fortress, also played a vital role in the effort.

At the Macondo response site, Helix staff logged 285,000 man-hours aboard the Q4000 alone during the blowout response – a total of 135 days altogether. Helix staff provided the conduit for thousands of barrels of fluid during the static kill and cementing operation. Up to 80 barrels of kill fluid were pumped every minute through four vessels daisy-chained to the Q4000 during the top kill operation. Helix also provided flowback and burning of up to 10,000 barrels of oil and 15 mmcfd for approximately 30 days as well as deploying the original cofferdam. And it was the Q4000 that eventually lifted the *Deepwater Horizon's* BOP from the seafloor onto its deck – a BOP weighing 1 million pounds. The lessons we learned during those intense days will inform our approach to containment efforts well into the future.

Building on our unique undersea containment experience, Helix joined together with numerous independent operators in December 2010 to form the Helix Well Containment Group (HWCG), an industry cooperative founded under the umbrella of Clean Gulf Associates (CGA), a not-for-profit oil spill response organization serving oil and gas exploration and production companies in the Gulf of Mexico. Currently, 23 leading energy companies have joined the consortium, and over 30 subcontractors have signed on to be available to the HWCG to provide the core services necessary to fully complement a deepwater response.

The mission of the HWCG was to develop a comprehensive and rapid deepwater containment response system, with a designated purpose to manifest an effective response to a deepwater well control incident in the Gulf of Mexico. CGA and HWCG members have contracted with Helix Energy Solutions for vessels, equipment and services necessary to contain a deepwater spill. Helix is pleased to be of assistance, and we provide emergency containment services to the industry without regard to profit. Our goal as an offshore service company that employs more than 1,600 people worldwide is putting the Gulf back to work. And when the Gulf goes back to work – realizing the full potential of this incredibly productive energy basin – companies engaged in well intervention, drilling, field servicing and other related tasks all are gainfully employed to the benefit of the economy and energy security.

Working in close collaboration with the Bureau of Ocean Energy Management, Regulation and Enforcement – including in-person meetings with Director Bromwich and Secretary of the Interior Salazar – the HWCG technical committee designed a well-containment plan that meets the agency's requirement in its notice to lessees, NTL 2010-N10. We developed decision trees, procedures and schedules, and identified services and equipment necessary for an effective response based upon lessons learned from the Macondo incident. Our well containment plan evolved into a comprehensive document addressing multiple scenarios inclusive of specific well information and deployment procedures.

What emerged from this work is a Well Containment Plan that encompasses over 1100 pages of comprehensive procedures, processes, and technical detail of equipment to be employed during a subsea containment response. Many of these processes and procedures were refined by Helix during the *Deepwater Horizon* response.

The Helix Fast Response System, the key component of the HWCG, is ready to respond to a subsea deepwater containment incident today, as shown by the six drilling permits recently granted based on our containment system. The Fast Response System is underpinned by a Mutual Aid Agreement that outlines how technical experts and critical equipment from each of the 23 member companies will be made available to any member during an event – providing a level of capability not required by NTL 2010-N10, but which the member companies feel adds an additional layer of capability to protect the safety of our workers, the environment and commerce of the Gulf of Mexico, our integrity, and our companies' investments. The system is designed for expansion and inclusion of developing new technologies.

We are pleased to report to the Committee that the HWCG today stands ready to respond to the most complex scenario referenced in the well containment plan – including an incident with the complexities of Macondo. The technology deployed in this effort is innovative, to be sure, but the real secret is the men and women of companies like Helix who are fully trained on how to use equipment in a broad range of circumstances and at a moment's notice.

What precisely does it mean to be prepared for an endeavor as complex and time-sensitive as an undersea well control incident? The Helix Fast Response System's Interim

Containment System includes a 10 thousand pounds per square inch (psig) capping stack, a riser system capable of operating in 5,600 feet of water, the Q4000 intervention vessel (used during the *Deepwater Horizon* response) and all necessary equipment to complete the intervention system. This system is capable of completely capping and closing in a well that has the necessary mechanical integrity to do so, or allowing flow back and flaring of up to 55,000 barrels of oil or 70,000 barrels of liquids per day and 95 million cubic feet of natural gas per day at water depth up to 5,600 feet of water. This system stands ready now.

The next stage of readiness, which we refer to as the Complete Containment System, is designed to handle more comprehensive responses by including a 15 thousand pounds per square inch capping stack and a riser system capable of operating in 8000 feet of water. This system is complete and in the final stages of testing.

For the sake of context, the initial reservoir pressure at the Macondo well face at the time of the blowout was 11,850 psig, according to the U.S. Coast Guard. The well sat in 4,992 feet of water and, according to final government estimates, may have disgorged up to 60,000 barrels of oil per day. It is important to note that a discharge rate of 60,000 barrels of oil per day does not equate to the flowback requirements. Flowback capacity required is meaningfully less than the discharge rate due to hydrostatic head and flow restrictions through the system. Actual flowback capacity requirements must be calculated for each well, but our system would have completely contained the Macondo well.

Finally, as we look into the future, the HWCG is evaluating an even further expanded system having capability to 10,000 feet of water that will allow capture and flow back of up to 105,000 barrels of oil per day and 300 million cubic feet of natural gas per day. Approval of this expansion will take place only if the members decide a system with this capacity is necessary. If approved by the members, this expansion could be made available by 2012.

One of the most innovative parts of the energy industry in the United States comes from a robust and healthy offshore independent oil and gas sector. Consistently, a diversity of players in upstream oil and gas have produced innovation after innovation (not always the largest companies), tackling technological challenges safely and effectively. When the government fails to respond appropriately to permitting concerns or creates significant doubt which undermines business confidence, it saps potential investment capital necessary to innovate. The smaller companies are more vulnerable to production delays and may leave the market. Ironically, if production in the Gulf should fall, the government is also denying itself access to revenue, making its own oversight job all the more difficult. So the bottom line is that in a world of limited resources, one of the most critical things for the government to do is "to do no harm." And that means putting the Gulf back to work as soon as possible. I understand the charge of responsibility the government has, but quite frankly, one of the major impediments faced in convincing the producers to dedicate and allocate the means to provide a solution in a more timely manner is the uncertainty surrounding the government's policy as to what specifically will be accepted as a sufficient solution.

Of course, the federal government has its own research and development resources. In the Macondo situation, the private sector worked hand in glove with the talented men and women of the U.S. Coast Guard, including its capable Research and Development division. Further, the research centers of the U.S. Navy were called upon to assess technology, particularly for surface containment applications. NOAA also has tremendous value to bring to bear. We certainly encourage those government agencies to work closely with industry organizations like

the HWCG and the Marine Well Containment Corporation established by some of the major integrated oil corporations. Coordination and sharing ideas is very important to making advances.

The technology we deploy is robust, but it is not inexpensive. The government can assist us in minimizing the cost of capital by reinvigorating the U.S. Maritime Administration (MARAD) program to advance maritime industrial development. This financing not only protected high-skill jobs on land and offshore, but ensured a supply of high-quality American-flagged, Jones Act-compliant vessels for U.S. waters. The Q4000, which played a critical role in the Macondo response, was built in Brownsville, Texas using MARAD financing. New, American-flagged vessels are critical to meeting the country's energy needs and providing the spill containment response capacity necessary to ensure that those needs are met safely. MARAD can help to make this happen.

Thank you for the opportunity to testify. There is no doubt that the unique circumstances faced in the Gulf last year were one of the most difficult crises faced by our industry. But the industry has always developed innovative technologies and processes even in the face of the toughest challenges. Now, with the experience of Macondo behind us, we have learned how to fashion an even more appropriate and effective containment system. It is time to get back to work. Thank you.

Appendix A:

Image 1

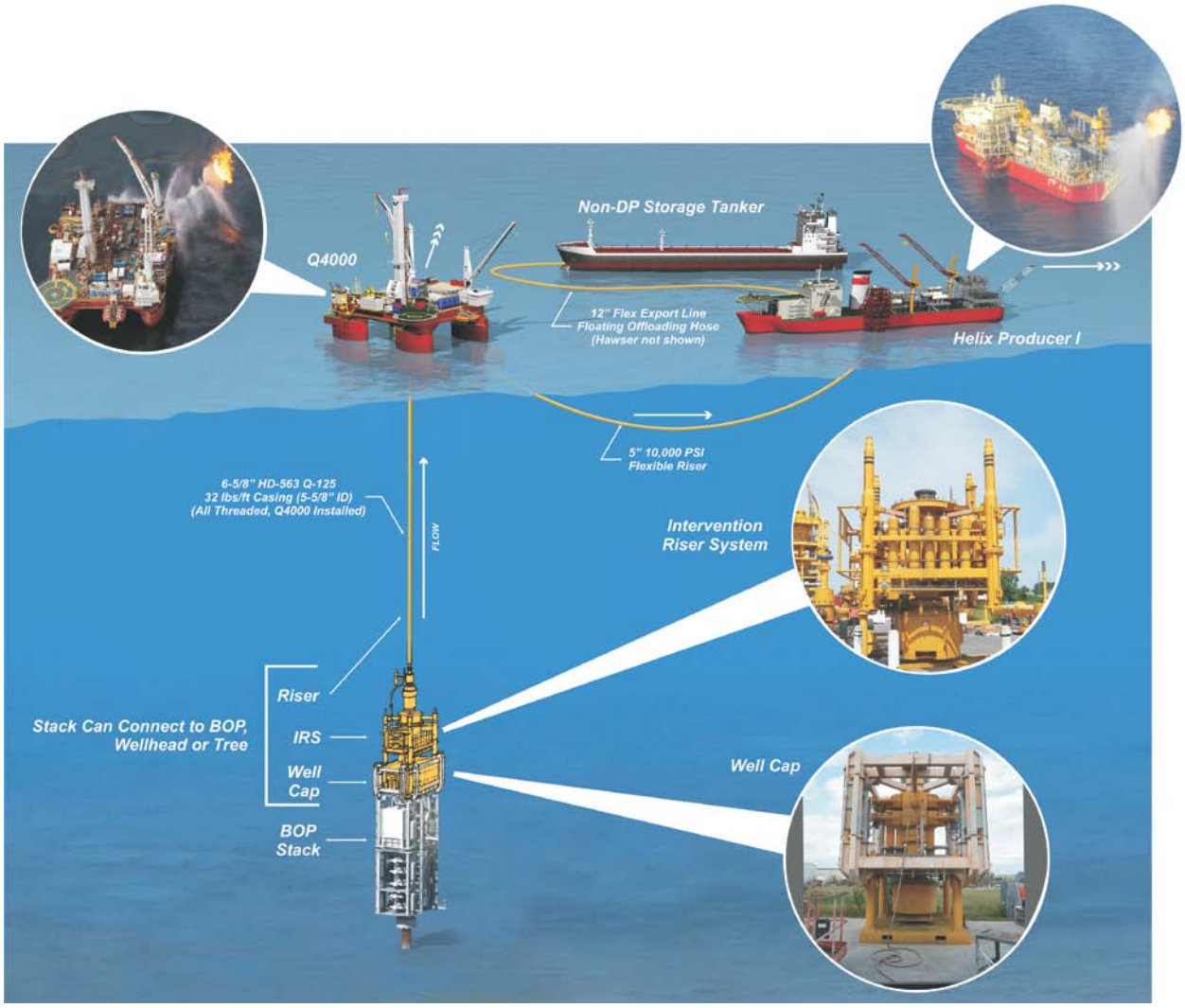
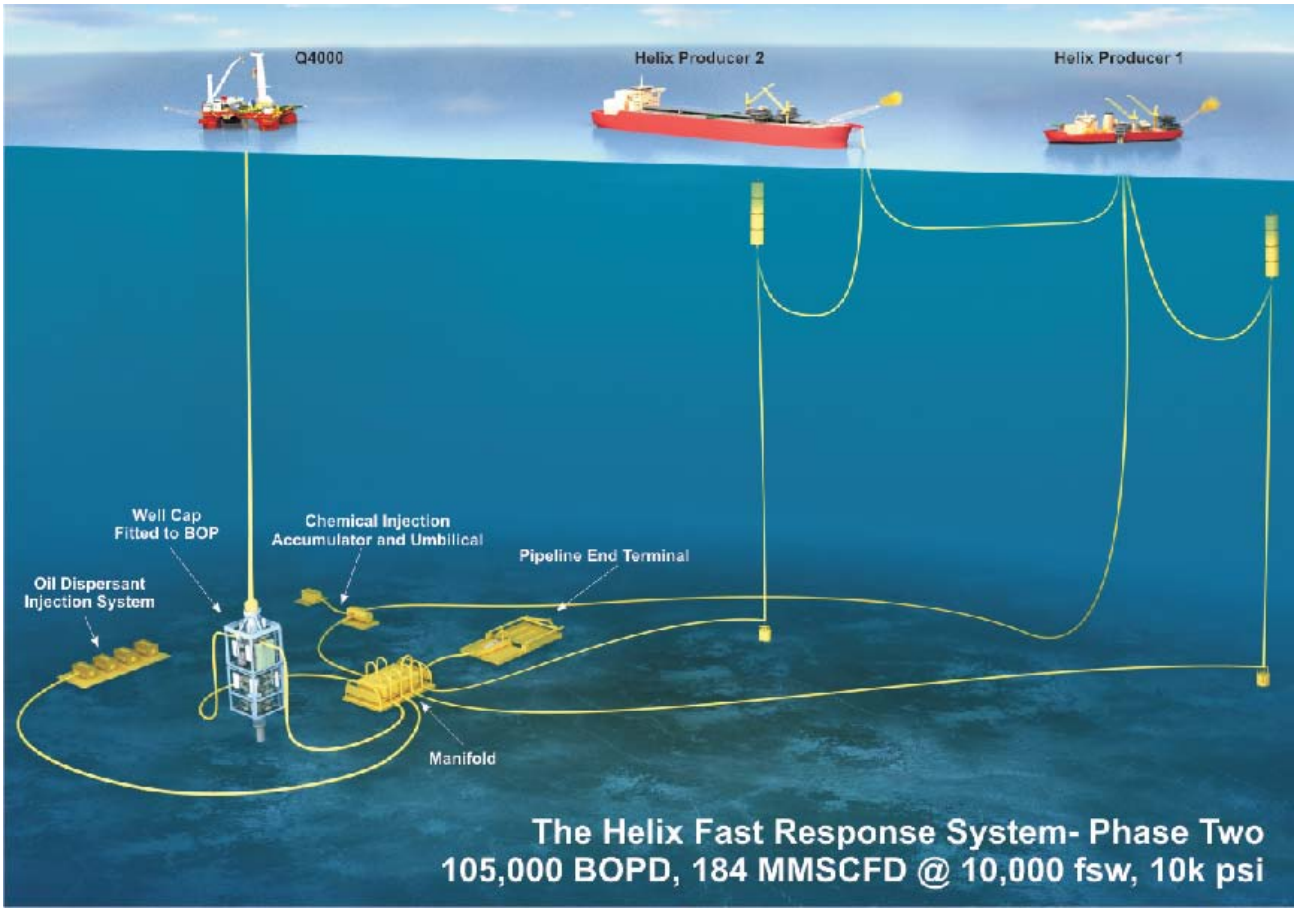


Image 2


Q4000
Helix Producer 2
Helix Producer 1
Well Cap
Fitted to BOP
Chemical Injection
Accumulator and Umbilical
Pipeline End Terminal
Oil Dispersant
Injection System
Manifold
The Helix Fast Response System- Phase Two
105,000 BOPD, 184 MMSCFD @ 10,000 fsw, 10k psi