

**(1) "SYSTEMIC" SAFETY ISSUES**

#	<b>Basis Asserted in July 12 Decision</b>	<b>Pre-May 28 Information or Conclusion</b>
1	<p>"The BP Oil Spill is a dynamic situation, and new information is made available every day about the risks associated with deepwater drilling on the OCS, including: (1) systemic drilling and workplace safety issues . . . ." July 12 Decision<sup>1</sup>, p. 2.</p>	<p>The U.S. Department of the Interior's safety experts concluded by May 27 that "systemic drilling and workplace safety issues" existed, as demonstrated by the following recommendations set forth in the <u>May 27 Safety Report</u>,<sup>2</sup> Executive Summary, p. 1-2:</p> <ul style="list-style-type: none"> <li>- "[r]equirement of new safety features on BOPs and related backup and safety equipment . . . ."</li> <li>- "[o]verhaul of testing, inspection, and reporting requirements for BOP and related backup and safety equipment . . . ."</li> </ul>
2	<p>"Recent events have also made clear that there are systemic problems that apply across different types of deepwater drilling, including, but not limited to, problems with BOPs . . . ." July 12 Decision, p. 2.</p>	<p>See Basis 1 above. For pre-May 28 information concerning "problems with BOPs," see Bases 14 and 16 below.</p>
3	<p>"It is imperative that we have additional information about the causes of the BP Oil Spill and implement safety measures to address the risks associated with those causes." July 12 Decision, p. 3.</p>	<p><u>May 27 Safety Report</u>, Executive Summary, p. 1: "The Secretary recommends a series of steps immediately to improve the safety of offshore oil and gas drilling operations in Federal waters. . . ."</p> <p><u>May 27 Safety Report</u>, p. 4: "This 30-day review has been conducted without the benefit of the findings from the ongoing investigations into the root causes . . . ."</p>

<sup>1</sup> Rec. Doc. 125-4 (Declaration of Walter Cruickshank submitted in support of Defendants' Motion to Dismiss), Ex. A (July 12, 2010 Decision Memorandum) (hereinafter "July 12 Decision").

<sup>2</sup> Rec. Doc. 7 (Motion for Preliminary Injunction), Ex. A (*Increased Safety Measures for Energy Development on the Outer Continental Shelf*, dated May 27, 2010) (hereinafter "May 27 Safety Report").

4 “[S]everal investigations and reviews to identify the root causes of the disaster are underway including a joint BOEM/U.S. Coast Guard investigation, a review by the National Academy of Engineering (NAE), and on-going Congressional inquiries. Also, the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (Presidential Commission) is beginning its deliberations.” July 12 Decision, p. 3.

April 27 Order:<sup>3</sup> Joint Department of the Interior and Department of Homeland Security convening the joint BOEM/U.S. Coast Guard investigation. The only public hearings conducted by the joint investigation prior to July 12 were held May 11-12 and 25-29. See Joint BOEM-USCG Investigation Roadmap.<sup>4</sup>

April 30 Order:<sup>5</sup> Establishing the Outer Continental Shelf Safety Oversight Board.

May 11 Congressional Inquiry:<sup>6</sup> The first congressional inquires concerning the Deepwater Horizon incident commenced not later than May 11.

May 21 Executive Order:<sup>7</sup> Establishing the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (the “Presidential Commission”). The first meeting of the Presidential Commission was not held until July 12. See Oil Spill Commission, Meeting 1.<sup>8</sup>

<sup>3</sup> Rec. Doc. 33-2, Ex. A (Joint Department of the Interior and Department of Homeland Security Convening Order Regarding Joint Investigation dated April 26 and 27, 2010).

<sup>4</sup> *Joint BOEM-USCG Investigation Roadmap*, Deepwater Horizon Joint Investigation, available at <http://www.deepwaterinvestigation.com/external/content/document/3043/590203/1/JIT%20Deepwater%20Horizon%20Investigation%20Roadmap.pdf> (last visited Aug. 24, 2010).

<sup>5</sup> Rec. Doc. 33-2 (Declaration of David J. Hayes, submitted by Defendants in opposition to preliminary injunction motion), Ex. B (Secretarial Order NO. 32989, establishing the Outer Continental Shelf Safety Oversight Board) (dated April 30, 2010) (hereinafter “April 30 Order”).

<sup>6</sup> *Economic and Environmental Impacts of the Recent Oil Spill in the Gulf of Mexico Before the S. Comm. on Environment and Public Works* (May 11, 2010), summary and related materials available at [http://epw.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing\\_ID=68a0d9cf-802a-23ad-4665-6f688a5778e8](http://epw.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=68a0d9cf-802a-23ad-4665-6f688a5778e8) (last visited Aug. 24, 2010).

<sup>7</sup> *Executive Order 13453* (dated May 21, 2010), available at <http://www.gpoaccess.gov/presdocs/2010/DCPD-201000410.pdf> (last visited Aug. 24, 2010).

<sup>8</sup> *Meeting 1: July 12-13, 2010 (New Orleans, LA)*, Oil Spill Commission, available at <http://www.oilspillcommission.gov/video/meeting-1/video-1-call-to-order> (last visited Aug. 24, 2010).

<p>May 26 Birnbaum Statement,<sup>9</sup> p. 5: “And, at the request of the Secretary, the National Academy of Engineering, a highly regarded organization affiliated with the National Academy of Sciences, will conduct an independent, science-based analysis of the root causes of the Deepwater Horizon oil spill so that corrective steps can be taken to address any engineering or mechanical shortcomings that may be uncovered.” The first meeting of the committee conducting the review was not held until July 16. See <u>NAE Project Information</u>.<sup>10</sup></p>	<p>May 27 Safety Report, p. 30: “As the Presidential Commission completes its review and as the Department and the U.S. Coast Guard finish the root cause investigation, the Department will know more and will respond accordingly.”</p>	<p>May 24 Allen Statement:<sup>11</sup> “The ultimate solution is going to be to drill a relief well . . . [t]hat will be sometime in August . . . [T]he ultimate timeline is August for the relief well, for the permanent solution.”</p>
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<sup>9</sup> *Outer Continental Shelf Oil and Gas Strategy and Implications of the Deepwater Horizon Rig Explosion Before the H. Comm. on Natural Resources*, 111th Cong. (May 26, 2010) (statement of S. Elizabeth Birnbaum, Director, Minerals Management Service, Department of the Interior) (hereinafter “May 26 Birnbaum Statement”), available at <http://www.boemre.gov/oooc/PDFs/MMSDirectorTestimony.pdf> (last visited Aug. 24, 2010).

<sup>10</sup> *Project Information: Analysis of Causes of the Deepwater Horizon Explosion, Fire, and Oil Spill to Identify Measures to Prevent Similar Accidents in the Future*, The National Academies, available at <http://www8.nationalacademies.org/cp/projectview.aspx?key=49246> (last visited Aug. 24, 2010).

<sup>11</sup> *Press Briefing by Press Secretary Robert Gibbs, Admiral Thad Allen and Assistant to The President for Energy and Climate Change Carol Browner*, May 24, 2010 (statement by Admiral Thad Allen) (hereinafter “May 24 Allen Statement”), available at <http://www.whitehouse.gov/the-press-office/press-briefing-press-secretary-robert-gibbs-admiral-thad-allen-and-assistant-presid> (last visited Aug. 24, 2010).

<sup>12</sup> *See Gulf of Mexico Deepwater Operations and Activities: Environmental Assessment by Minerals Management Service, Gulf of Mexico OCS Region* (May 2000) (hereinafter “2000 GOM Deepwater Report”), available at <http://www.gomr.mms.gov/PDFs/2000/2000-001.pdf> (last visited Aug. 24, 2010). Copies of the pages of the 2000 GOM Deepwater Report cited herein are attached hereto as Exhibit 1-A

	<p>could range from 60 to 120 days.”</p> <p><u>May 26 Birnbaum Statement</u>, p.5: “One major factor affecting this timeline is that investigators will need access to the BOP Stack that must remain on seabed until the well is permanently sealed.”</p> <p>See Basis 7 above.</p>	<p>“[I]t is not yet possible to review key physical evidence that should help determine what caused the accident. . . .” July 12 Decision, p. 3.</p>	<p>7</p>
	<p><u>May 28 Memorandum</u>.<sup>13</sup> “I find at this time . . . that offshore drilling poses an unacceptable threat . . . .”</p>	<p>“[T]he BOP that apparently failed remains on the seabed.” July 12 Decision, p. 3.</p>	<p>8</p>
	<p><u>May 27 Safety Report</u>, p. 30: “As the Presidential Commission completes its review and as the Department and the U.S. Coast Guard finish the root cause investigation, the Department will know more and will respond accordingly.”</p>	<p>“[A] threat exists, and we are in the midst of determining the full nature and extent of that threat.” July 12 Decision, p. 3.</p>	<p>9</p>
	<p><u>May 27 Safety Report</u>, Executive Summary, p. 2: “The moratorium would allow for implementation of the measures proposed in this report and for consideration of the findings from ongoing investigations, including the bipartisan National Commission . . . .”</p>	<p>“[A]dditional time is critical to get the preliminary results of ongoing investigations to better inform our decision making and longer term rulemaking throughout this process.” July 12 Decision, p. 3.</p>	<p>10</p>
	<p>This purported absence of knowledge also existed on May 28.</p> <p>But consider <u>May 24 Dr. Bea Memorandum</u>,<sup>14</sup> p. 1 (“[T]his disaster was preventable had existing progressive guidelines and practices been followed. . . BP PLC and the Department of Interior’s Minerals Management Service (MMS) failed to properly assess and manage the natural hazards and human</p>	<p>“[W]e simply do not know if the BP situation is unique.” July 12 Decision, p. 4.</p>	<p>12</p>

<sup>13</sup> Rec. Doc. 7 (Motion for Preliminary Injunction), Ex. 2 (*Memorandum Re: Suspension of Outer Continental Shelf (OCS) Drilling of New Deepwater Wells*, dated May 28, 2010) (hereinafter “May 28 Memorandum”).

<sup>14</sup> *EnSCO Offshore Company v. Salazar*, et al. No. 10-1941 (E.D. La. filed Jul. 9, 2010), Rec. Doc. No. 37-1 (Federal Defendants’ Certification of the Administrative Record), Ex. A (“Index of Documents in the Administrative Record July 12, 2010 Secretarial Decision Order”) (hereinafter “July 12 Decision Administrative Record”), File No. DOI\_WDC\_B02\_00007\_0005 (“Failures of the Deepwater Horizon Semi-Submersible Drilling Unit”) (memorandum by Professor Robert Bea, PhD, PE, Deepwater Horizon Study Group, Center for Catastrophic Risk Management, University of California, Berkeley) (hereinafter “May 24 Dr. Bea Memorandum”). A copy of the May 24 Dr. Bea Memorandum is attached hereto as Exhibit 1-B.

	fallibilities in a prudent manner.”).
13	<p>“[T]here are only a small number of major manufacturers of the BOPs that are used by drilling contractors.” July 12 Decision, p. 4.</p>
14	<p>“[T]esting that has been required for BOPs on the new relief wells has identified unexpected performance problems with those BOPs.” July 12 Decision, p. 4.</p> <p>The “unexpected performance problems” with the relief wells’ BOPs were discovered during “stump testing” and “bottom testing” of the those BOPs, which predated May 28. “Stump testing” of a subsea BOP is testing that occurs before the BOP is lowered to connect with the well head on the seafloor. See 1996 IADC Drilling Manual,<sup>16</sup> p. 21. “Bottom Testing”, is additional testing performed once the BOP is lowered. See <i>id.</i>, p. 21, 27.</p> <p>Relief well drilled with <i>Development Driller II</i>:</p> <ul style="list-style-type: none"> <li>- During stump testing, the <i>Development Driller II</i>’s BOP experienced leaking shuttle valves resulting in two “ROV Hot Stab” test failures. See <u>DOI Relief Well BOP Testing Summary</u>,<sup>17</sup> p. 2. Both shuttle valves were repaired. See <i>id.</i> During the deadman test, an improperly installed shuttle valve prevented the deadman’s circuit from operating. See <i>id.</i> “The shuttle valve was taken off the deadman circuit and it worked as advertised.” <i>Id.</i></li> <li>- During bottom testing, a function test of the blind shear</li> </ul>

<sup>15</sup> *Shear Ram Capabilities Study for U.S. Minerals Management Service: BOP Manufacturer Shear Information* (dated September 2004), TA&R Project 463, available at <http://www.boemre.gov/tarprojects/463.htm> (last visited Aug. 24, 2010).

<sup>16</sup> IADC [International Association of Drilling Contractors] *Drilling Manual* (11th ed. Supp. 1996), Chapter K (“Well Control Equipment and Procedures”), Section 1 (“Blowout Preventer Stack Equipment”), pp. 20-21, 27. Copies of pages 20-27 of Section 1 of Chapter K of the 1996 IADC Drilling Manual are attached hereto as Exhibit 1-C.

<sup>17</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B18\_00001\_0145 (email from Tommy Beaudreau to Walter Cruickshank entitled “RE: Relief Well BOP Testing Summary”) (hereinafter “DOI Relief Well BOP Testing Summary”). A copy of the DOI Relief Well BOP Testing Summary is attached hereto as Exhibit 1-D.

rams and casing shear rams revealed that the “blue pod” was unable to close the shear rams. *See* DOI Relief Well BOP Testing Summary, p. 3. “The BOP stack was pulled to find the problem. The problem was identified as a solenoid connection, it was repaired, the stack rerun, and the casing shear rams were successfully function closed.” *Id.*

- The above description of events concerning the *Development Driller II* coincides with daily briefings contained on the White House Blog (“WHB”),<sup>18</sup> between May 14 and May 24, including:
  - On May 14, “MMS reports the Development Driller II arrived at a temporary location approximately five miles from the drill site to load materials required to position the vessel and begin drilling the well. MMS expects the vessel will move to the drill location within the next 24-48 hours and prepare to begin drilling.” WHB, p. 24.
  - On May 15, “[a]fter initial review by MMS, BP revised and resubmitted the Application for Permit to Drill the second relief well, which will be undertaken by the Development Driller II— which is on location and making preparations for

<sup>18</sup> *The Ongoing Administration-Wide Response to the Deepwater BP Oil Spill*, The White House Blog, available at <http://www.whitehouse.gov/blog/2010/05/05/ongoing-administration-wide-response-deepwater-bp-oil-spill> (last visited Aug. 24, 2010) (hereinafter “WHB”). A copy of the WHB between April 20, 2010, and May 24, 2010, is attached hereto as Exhibit 1-E.

<sup>19</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B02\_00011\_0025 (“Enhanced Subsea Blow Out Preventer (BOP) Stack Testing for Dynamically Positioned Rigs in the Gulf of Mexico”) (memorandum by Scott Sigurdson, VP Engineering, Drilling and Completions, BP PLC) (dated April 27, 2010) (hereinafter “April 27 BP BOP Memorandum”). A copy of the April 27 BP BOP Memorandum is attached hereto as Exhibit 1-F.

<sup>20</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B04\_00001\_0019 (“Safeguards on BP’s Relief Well”) (memorandum dated May 8, 2010). A copy of the May 8 BP Relief Well Memorandum is attached hereto as Exhibit 1-G.

<sup>21</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B31\_00001\_041 (“McNutt Memorandum”) (memorandum from Dr. Marcia McNutt, Director, USGS to Mike Bromwich, Director, BOEM; dated June 28, 2010). A copy of the McNutt Memorandum is attached hereto as Exhibit 1-H.

- initiating the drilling process.” *Id.* at pp. 25-26.
- On May 16, the WHB stated “MMS reports ... [t]he Development Driller II, which will drill the second relief well, is on location and is making preparations for initiating the drilling process and performing BOP maintenance.” *Id.* at p. 26.
- On May 20, the WHB stated “The *Development Driller II* is being prepared to receive the blowout preventer, following which it will begin drilling the second relief well.” *Id.* at p. 31.
- By May 24, all issues appear to be resolved as the WHB stated “BP continues to make progress in drilling both relief wells—more than 10,000 feet down for the first and more than 8,500 feet for the second.” *Id.* at p. 36.

Relief well drilled with *Development Driller III*:

- During stump testing of the *Development Driller III*'s BOP, a failed SPM valve was discovered during a deadman test. *See* DOI Relief Well BOP Testing Summary, p. 3. The failed valve “dumped hydraulic control fluid” in a test that “was not normally conducted as part of the stump test.” *Id.* After the valve was repaired, and two others were replaced, the deadman test was conducted successfully. *See id.* All other tests performed during stump testing were satisfactory. *See id.*
- No bottom test failures occurred. *See id.*
- This sequence of events concerning the *Development Driller III* also coincides with the daily briefings contained in the WHB, including:
  - On May 15, the WHB stated “[t]he Development Driller III, which will dig the first relief well, is

		<p>lowering the blowout preventer stack and riser. The reported depth was nearly 3,000 feet as of 7 p.m. EDT on Friday, May 14.” <i>Id.</i> at p. 25.</p> <p>- On May 17, the WHB stated “MMS reports that the Development Driller III, which is drilling the first relief well, installed the blowout preventer on the wellhead and is undergoing functional tests.” <i>Id.</i> at p. 27.</p> <p>- By May 24, all issues appear to be resolved as the WHB stated “BP continues to make progress in drilling both relief wells—more than 10,000 feet down for the first and more than 8,500 feet for the second.” <i>Id.</i> at p. 36.</p> <p>As noted, some of the tests conducted for the relief wells were not normally part of stump testing or bottom testing. <i>See also</i> April 27 BP BOP Memorandum, pp. 1 (“There is no GoM MMS regulatory requirement to test the BP emergency systems once the BOP stack is installed subsea.”), 3 (“[T]he Deadman and ROV intervention ram closure systems will be tested when the BOP is installed subsea.”); May 8 BP Relief Well Memorandum, p. 1 (“Though not required BP intends to test the deadman system on the seafloor.”). Dr. Marcia McNutt, Director of the U.S. Geological Survey, accordingly concluded that “[i]f EVERY BOP had to go through the same exhaustive check-out procedure that the two BOPs for the relief wells have gone through, with BOEM providing thorough oversight, including an in situ deadman test there probably wouldn’t be another BOP failure.” McNutt Memorandum, p. 5.</p> <p>May 27 Safety Report, p. 2: “[T]he risks associated with operating in water depths in excess of 1,000 feet are significantly more complex than in shallow water.”</p>
15	<p>“While all offshore drilling for oil and gas involves various risk . . . certain equipment and drilling conditions undertaken in the deepwater environment carry heightened risks of producing an event such as the BP Oil Spill.” July 12 Decision,</p>	



<p>p. 7.</p>	<p>16 “It is critical that BOPs be as reliable and effective as possible.” July 12 Decision, p. 8.</p>
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May 27 Safety Report, pp. 28-29: “The Department has presented new requirements . . . for the quality and sufficient redundancy of fail-safes, so as to . . . ensure the efficacy of the BOPs.”

Black Dec.<sup>22</sup> ¶ 3: “The Safety Report recommends a number of specific measures designed to ensure sufficient redundancy in the blowout preventers.”

April 27 BP BOP Memorandum, p. 1: “Subsea BOP stacks are critical safety equipment designed to secure a well in the event of flow.”

MMS has studied BOP performance, reliability, and effectiveness in several MMS-commissioned studies since 1999, including:

- 2004 Shear Ram Capabilities Study,<sup>23</sup>
- 2003 Evaluation of Secondary Intervention Methods in Well Control,<sup>24</sup>
- 2002 Mini Shear Study,<sup>25</sup>
- 2001 Deepwater Kicks and BOP Performance Report,<sup>26</sup>

<sup>22</sup> Rec. Doc. 33-1 (Declaration of Steve Black, Counselor to the Secretary of the U.S. Department of the Interior) (submitted by Defendants in opposition to preliminary injunction motion) (hereinafter “Black Dec.”). Mr. Black led a 30-day review of the *Deepwater Horizon* incident. Black Dec. ¶ 2. The findings of the review led by Mr. Black were presented in the May 27 Safety Report. *Id.*

<sup>23</sup> *Shear Ram Capabilities Study for U.S. Minerals Management Service* (dated September 2004), TA&R Project 463, available at <http://www.boemre.gov/tarprojects/463.htm> (last visited Aug. 24, 2010).

<sup>24</sup> *Evaluation of Secondary Intervention Methods in Well Control for U.S. Minerals Management Service* (dated March 2003), TA&R Project 431, available at <http://www.boemre.gov/tarprojects/431.htm> (last visited Aug. 24, 2010).

<sup>25</sup> *Mini Shear Study for U.S. Minerals Management Service* (dated Dec. 2002), TA&R Project 455, available at <http://www.boemre.gov/tarprojects/455.htm> (last visited Aug. 24, 2010).

	<p>“Factors that must be considered in evaluating whether it is safe to proceed with deepwater drilling in the OCS” include “[t]he statistical infrequency of blowout accounts” and “the catastrophic consequences – in terms of the health and safety of workers, effects on the regional and national economies, and damages to the environment – of an uncontrollable blowout and spill, regardless of the probability of such an event.” July 12 Decision, p. 8.</p>	<p>- <u>1999 Reliability of Subsea BOP Systems for Deepwater Application Report</u>.<sup>27</sup></p> <p>May 27 Safety Report, pp. 5-6 (discussing “the relatively infrequent occurrence of a major oil spill from an offshore drilling operation”).</p> <p>Hayes Dec.<sup>28</sup> ¶ 3: “[T]he historical record for large spills from offshore blowouts and drilling operations shows very few large incidents previous to DWH . . . .”</p> <p><u>1999 PCCI Report</u>,<sup>29</sup> pp. 26-27a: describing deepwater blowout scenarios and categorizing their risk and consequences as “severe” to “catastrophic”.</p> <p><u>January 2010 Blow-out Prevention Equipment Reliability Report</u>,<sup>30</sup> p. 6: “It is important to understand and focus on the fact that control system failures are the most likely categories of failures on subsea BOP equipment and that they are identified by function tests.”</p> <p>Hayes Dec. ¶ 13: “Surface placement of BOPs . . . results in easier inspection, maintenance and repair and dispenses with the</p>
17	<p>“Factors that must be considered in evaluating whether it is safe to proceed with deepwater drilling in the OCS” include “[t]he statistical infrequency of blowout accounts” and “the catastrophic consequences – in terms of the health and safety of workers, effects on the regional and national economies, and damages to the environment – of an uncontrollable blowout and spill, regardless of the probability of such an event.” July 12 Decision, p. 8.</p>	<p><u>1999 PCCI Report</u>,<sup>29</sup> pp. 26-27a: describing deepwater blowout scenarios and categorizing their risk and consequences as “severe” to “catastrophic”.</p> <p><u>January 2010 Blow-out Prevention Equipment Reliability Report</u>,<sup>30</sup> p. 6: “It is important to understand and focus on the fact that control system failures are the most likely categories of failures on subsea BOP equipment and that they are identified by function tests.”</p> <p>Hayes Dec. ¶ 13: “Surface placement of BOPs . . . results in easier inspection, maintenance and repair and dispenses with the</p>
18	<p>“The control system for subsea BOPs is much more complex than the control system for a surface BOP, and subsea BOPs require regular testing to ensure that they will respond properly on demand.” July 12 Decision, p. 8.</p>	<p><u>1999 PCCI Report</u>,<sup>29</sup> pp. 26-27a: describing deepwater blowout scenarios and categorizing their risk and consequences as “severe” to “catastrophic”.</p> <p><u>January 2010 Blow-out Prevention Equipment Reliability Report</u>,<sup>30</sup> p. 6: “It is important to understand and focus on the fact that control system failures are the most likely categories of failures on subsea BOP equipment and that they are identified by function tests.”</p> <p>Hayes Dec. ¶ 13: “Surface placement of BOPs . . . results in easier inspection, maintenance and repair and dispenses with the</p>

<sup>26</sup> *Deepwater Kicks and BOP Performance* (dated July 24, 2001) TA&R Project 383, available at <http://www.boemre.gov/tarprojects/383.htm> (last visited Aug. 24, 2010).

<sup>27</sup> *Reliability of Subsea BOP Systems for Deepwater Application* (dated July 11, 1999), TA&R Project 319, available at <http://www.boemre.gov/tarprojects/319.htm> (last visited Aug. 24, 2010).

<sup>28</sup> Rec. Doc. 33-2 (Declaration of David J. Hayes, Deputy Secretary, Department of the Interior, submitted by Defendants in opposition to preliminary injunction motion) (hereinafter “Hayes Dec.”). In his declaration, Mr. Hayes identifies the “purpose” of the May 28 Memorandum and the “considerations and findings” that the May 28 Memorandum was “based in part on.” See Hayes Dec. ¶ 11.

<sup>29</sup> *Oil Spill Containment, Remote Sensing and Tracking for Deepwater Blowouts: Status of Existing and Emerging Technologies, Final Report* (dated Aug. 12, 1999) TA&R Project 311 (hereinafter “1999 PCCI Report”), available at <http://www.boemre.gov/tarprojects/311.htm> (last visited Aug. 24, 2010). Copies of the pages of the 1999 PCCI Report cited herein are attached hereto as Exhibit 1-1.

<sup>30</sup> *Blow-out Prevention Equipment Reliability Joint Industry Project Final Report (Phase 1 – Subsea)* (dated Jan. 15, 2010), p. 6, available at [www.lib.lsu.edu/ref/oilspill/BOP\\_failure\\_study\\_documents.pdf](http://www.lib.lsu.edu/ref/oilspill/BOP_failure_study_documents.pdf) (page 33 of 39) (last visited Aug. 24, 2010).

		need for a marine riser. Use of jack up rigs corresponding with surface placement of BOPs allow operators to avoid the complications associated with deep subsea currents and conditions.”
19	“[S]ubsea BOPs are less accessible to intervention, requiring the use of remotely operated vehicles (ROVs) to intervene, and . . . they are difficult to repair while attached to the wellhead” July 12 Decision, p. 8.	<p>2000 GOM Deepwater Report, p. II-16: “Many of the wells expected in deepwater will have well control equipment at the seafloor. Water depths may complicate well control.”</p> <p>May 17 Presentation to Secretary Salazar,<sup>31</sup> p. 6: Discussing the accessibility of BOPs on the surface as a “key shallow water drilling factor[].”</p> <p>2004 Blowout Intervention Report,<sup>32</sup> p. 6: “In failure scenarios where there has been a catastrophic failure either of the surface equipment, the wellhead system or high casing, or at almost any point where influx is flowing outside of the blowout preventers, options become very rapidly non-existent.”</p> <p>2000 GOM Deepwater Report, p. II-16: “The actual amount of time required to drill a relief well will depend upon a variety of factors . . . It is estimated that the entire intervention for a blowout could range from 60 to 120 days.”</p> <p>See Bases 19 and 20 above.</p>
20	“[Subsea BOPs’] placement in deepwater also vastly complicates containment efforts in the event of an uncontrolled blowout – in a nutshell, the ability to contain a deepwater spill effectively and quickly when a subsea BOP stack fails does not exist.” July 12 Decision, p. 8.	
21	“The operations of surface BOPs are not subject to all of the complicating factors associated with subsea BOPs, and they are more accessible for repair and intervention.” July 12 Decision, p. 8.	
22	“[S]urface BOPs that are placed on floating facilities (as opposed to jack-up rigs) present other significant risks.” July	<p>2002 Surface BOP Workshop<sup>33</sup>: “The purpose of the workshop was to educate the industry in [and give MMS insight into] the</p>

<sup>31</sup> July 12 Decision Administrative Record, File . No. DOI\_WDC\_B16\_00001\_0013 (“Shallow Water Energy Coalition Presentation to Secretary Salazar,” dated May 17, 2010).

<sup>32</sup> *Development of a Blowout Intervention Method and Dynamic Kill Simulator for Blowouts Occurring in Ultra-Deepwater* (Dec. 2004), TA&R Project 408, available at <http://www.boemre.gov/tarprojects/408.htm> (last visited Aug. 24, 2010).

<sup>33</sup> *Surface BOP Workshop* (Nov. 2002), TA&R Project 462, summary available at <http://www.boemre.gov/tarprojects/462.htm> (last visited Aug. 24, 2010).

	12 Decision, p. 8.	use of a surface blowout Preventor (BOP) for floating drilling operations and to provide an understanding of the associated risks and mitigating safeguards. . . .” MMS has commissioned the study of high-pressure risers in several pre-May 28 reports, including: - 2006 Deepwater Riser Reliability Project, <sup>34</sup> - 2006 VIV Riser Simulation, <sup>35</sup> - 2004 Assessment of Deepwater Floating Facilities, <sup>36</sup> - 2002 Deepwater Riser Study, <sup>37</sup> - 2001 Riser Reliability Analysis, <sup>38</sup> - 1991 Floating Vessel Blowout Control Project. <sup>39</sup>
23	“The high-pressure riser and casing from the seafloor to the rig can be exposed to dynamic stresses. A failure of a high-pressure riser due to these stresses can lead to uncontrolled flow below the surface BOP system located on the floating facility.” July 12 Decision, p. 8.	See Basis 23 above.
24	“Well operations from a floating platform with a surface BOP stack and a high pressure riser (through the water column) are higher risk operations than drilling from a jack-up rig or a fixed platform.” July 12 Decision, p. 8.	
25	“The single high pressure riser (or in some cases, a dual riser system) used by floating platforms are subject to environmental forces such as vortex induced vibration (VIV) that make them more susceptible to stress fatigue.” July 12 Decision, p. 8.	MMS has commissioned the study of riser forces such as VIV in several pre-May 28 reports, including: - 2006 VIV Riser Simulation: “The purpose of this four phase research effort was to research and to develop advanced computational fluid dynamics (CFD) tools and modeling the provide reliable prediction of riser VIV in ultra deepwater environments.” - 2006 Deepwater Riser Reliability Project.

<sup>34</sup> *Probabilistic Reliability and Integrity Assessment of Large Diameter Steel Compliant Risers for Deepwater* (June 2006), TA&R Project 497, available at <http://www.boemre.gov/tarprojects/497.htm> (last visited Aug. 24, 2010).

<sup>35</sup> *CFD Simulation of Riser VIV* (Dec. 2006), TA&R Project 481, available at <http://www.boemre.gov/tarprojects/481.htm> (last visited Aug. 24, 2010).

<sup>36</sup> *Assessment of Performance of Deepwater Floating Production Facilities* (Mar. 2004), TA&R Project 471, available at <http://www.boemre.gov/tarprojects/471.htm> (last visited Aug. 24, 2010).

<sup>37</sup> *Deepwater Riser Fatigue Life, Modeling & Standard Study* (Oct. 2002), TA&R Project 572, available at <http://www.boemre.gov/tarprojects/572.htm> (last visited Aug. 24, 2010)

<sup>38</sup> *Reliability Analysis of a Top-Tensioned TLP Riser* (July 2001), TA&R Project 275, available at <http://www.boemre.gov/tarprojects/275.htm> (last visited Aug. 24, 2010).

<sup>39</sup> *Floating Vessel Blowout Control* (Dec. 1991), TA&R Project 150, available at <http://www.boemre.gov/tarprojects/150.htm> (last visited Aug. 24, 2010).

26	<p>“Jack-up rigs and fixed production platforms have more casing strings tied back to the surface of the rig or platform, which provide additional external support for the pressured casing. . . . [B]ecause these tied back casing strings are used in shallower water operations with a shorter water column, they are less exposed to current induced stress” July 12 Decision, p. 8.</p>	<p>1999 PCCI Report, p. 23: “Deepwater drilling requires the placement of additional casing strings at shorter intervals than shallow water or land drilling . . . .”</p>
27	<p>“[A]t this time the precise reasons for the <i>Deepwater Horizon</i> BOP’s failure are not known. . . [T]he lack of knowledge about the root cause in and of itself poses a present and unacceptable risk.” July 12 Decision, p. 8.</p>	<p><u>Black Dec. ¶ 6</u>: “Root causes . . . were still under review as of . . . May 27, 2010.”</p>
28	<p>“[W]e have no guarantee that operators would not be engaging in the very same activity that led to the BP Oil Spill.” July 12 Decision, p. 8.</p>	<p>The absence of such a guarantee as of May 28 is evident from the following statements:</p> <ul style="list-style-type: none"> <li>- <u>Black Dec. ¶ 9</u>: “[W]hile some operators reportedly follow certain best practices . . . industry submissions demonstrate the urgent need . . . for the implementation of additional safety measures to ensure that all operators in the OCS employ the best available and safest technologies.”</li> <li>- <u>Hayes Dec. ¶ 11</u>: “The [May 28 Moratorium] was for the purpose of ensuring that operators that were similarly situated to the Deepwater Horizon were operating in a safe manner.”</li> </ul> <p>But consider Basis 12 (citing <u>May 24 Dr. Bea Memorandum</u>, p. 1 (“[T]his disaster was preventable had existing progressive guidelines and practices been followed.”) and Basis 14 (quoting <u>McNutt Memorandum</u>, p. 5 (“If EVERY BOP had to go through the same exhaustive check-out procedure that the two BOPs for the relief wells have gone through, with BOEM providing thorough oversight, including an in situ deadman test there probably wouldn’t be another BOP failure.”))).</p>
29	<p>“It is clear that the apparent performance problem with the <i>Deepwater Horizon</i>’s BOP is not an isolated incident.” July</p>	<p>See Basis 16 above (listing examples of studies commissioned by MMS concerning BOP performance, reliability, and</p>

	12 Decision, p. 9.	effectiveness). These studies chronicle performance and reliability of deepwater BOPs.
30	“Performance problems have been identified in recent weeks with the BOPS on the relief wells that BP is drilling. The problems have been uncovered during new testing requirements that were imposed on the relief wells after the BP Oil Spill, thus providing more evidence that prior testing requirements were inadequate.” July 12 Decision, p. 9.	See Basis 14 above (demonstrating that problems with the BOPs on the relief wells were identified prior to May 28; quoting conclusion set forth in <u>McNutt Memorandum</u> that testing required on the relief wells’ BOPs between May 15 and May 24 would prevent blowouts in future; citing statements from the <u>April 27 BP BOP Memorandum</u> and <u>May 8 BP Relief Well Memorandum</u> indicating that BP would test the deadman system of the relief well BOP on the seafloor despite no regulatory requirement that it do so).
31	“It is unlikely that these problems are unique to BP.” July 12 Decision, p. 9.	See Basis 29 above.
32	“The BOPs are manufactured by a very small number of companies, and BOPs used across the industry tend to employ standardized components.” July 12 Decision, p. 9.	See Basis 13 above (discussing the number of BOP manufacturers).
33	“Drilling that takes place in the deepwater environment poses more significant risks than drilling in shallow waters.” July 12 Decision, p. 9.	<u>May 27 Safety Report</u> , p. 6: “[T]he experience with the BP Oil Spill illustrates the significant challenges in containing a blowout in deepwater, as compared to a blowout in shallow water.”  <u>May 24 Dr. Bea Memorandum</u> , p. 1: “The environment in which the oil drilling took place – 5,000 feet below the ocean’s surface – is extremely hazardous. The hazards are comparable to that of exploration on the Moon and Mars . . . These are the natural hazards presented by the pressures, forces, and movements of the water and the seafloor, and by the extremely low and high temperatures of the deep ocean environment.”

		<p><u>2003 Deepwater Drilling Workshop</u>:<sup>40</sup> Identifying and discussing “the technical gaps that remain in ultra-deepwater drilling.”</p> <p><u>Hayes Dec. ¶ 6</u>: “When these failures occur in deep water situations, the impact can be catastrophic due to the severe limitations on the operator’s ability to effectively respond to an uncontrolled well in the deep water environment, including the ability to access the well and the extraordinarily difficult operating environment.”</p>
34	<p>“The primary risk factors turn on the type of equipment that must be used in deeper water. More specifically, beyond approximately 500 feet in depth, floating facilities – rather than “jack-up” rigs” – typically are used.” July 12 Decision, p. 9.</p>	<p><u>Hayes Dec. ¶ 13</u>: “Use of jack up rigs corresponding with surface placement of BOPs allow operators to avoid the complications associated with deep subsea currents and conditions.”</p> <p>Risks unique to “floating facilities” were found by the U.S. Department Interior before May 28, as illustrated by the “[k]ey recommendations on BOPs and related safety equipment used on floating drilling operations . . .” set forth in the <u>May 27 Safety Report, Executive Summary</u>, p. 1-2 (emphasis added).</p>
35	<p>“In addition to the heightened risks associated with the use of floating rigs and platforms, deepwater wells can be very productive and have flow potentials that can be 5 to 10 times higher than shallow water wells.” July 12 Decision, p. 9.</p>	<p><u>2008 MMS Report</u>,<sup>41</sup> p. 13: “[T]he flow rates of deepwater wells and the field sizes of deepwater discoveries are often quite large.”</p>

<sup>40</sup> Workshop on Deepwater Drilling: Where are we Headed? (June 2003), TA&R Project 475, summary available at <http://www.boemre.gov/tarprojects/475.htm> last visited Aug. 24, 2010).

<sup>41</sup> Deepwater Gulf of Mexico 2008: America’s Offshore Energy Future published by U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region (hereinafter “2008 MMS Report”), available at <http://www.gomr.mms.gov/PDFs/2008/2008-013.pdf> (last visited Aug. 24, 2010). Copies of the pages of the 2008 MMS Report cited herein are attached hereto as Exhibit 1-J.

36	<p>“These characteristics have been fully demonstrated by the Macondo well.” July 12 Decision, p. 9.</p>	<p><u>May 27 Safety Report</u>, p. 18: “The BP Oil Spill demonstrates the possibility of a catastrophic event . . . .”</p> <p><u>Hayes Dec.</u> ¶ 6: “Through my daily involvement [with the response to the BP Oil Spill] . . . I became acutely aware of the risks associated with drilling in deep water and in responding to the loss of well control in deep water.”</p>
37	<p>“[O]perators’ worst-case discharge scenarios typically anticipate larger releases from deepwater wells.” July 12 Decision, p. 9.</p>	<p><u>2000 GOM Deepwater Report</u>, p. II-58-II-59: “Spill responses may be complicated by the potential for very large magnitude spills (because of the high production rates associated with deepwater wells).”</p>
38	<p>“[O]ver-pressured formations (defined as formations with pressures that exceed the normal pressure expected at a given depth) present special challenges in the deepwater drilling environment. Addressing over-pressured formations in deepwater drilling operations is more complex than in shallow water operations” July 12 Decision, p. 10.</p>	<p><u>2008 MMS Report</u>, p. 42: “High-pressure, high-temperature (HP/HT) development is one of the greatest technological and regulatory challenges to the oil and gas industry today. . . The MMS is working with industry to evaluate the risks and set limits to mitigate these potential hazards. . . High-pressure, high-temperature compounds the technological challenges faced in deepwater exploration and especially in deepwater completion and production.”</p>
39	<p>“In general, deepwater wells have more casing/liner strings, leaving less annular space between the casing and hole diameter. This makes cementing the hole more difficult.” July 12 Decision, p. 10</p>	<p>See Basis 26 above (citing <u>1999 PCCI Report</u> regarding casing strings).</p>
40	<p>“Higher than normal pressure formations further complicate the operation.” July 12 Decision, p. 10</p>	<p>See Basis 38 above.</p>
41	<p>“[T]he BP Oil Spill response has demonstrated that water depth, pressure and temperature are major factors affecting the ability of well control crews to bring deepwater blowouts under control.” July 12 Decision, p. 10.</p>	<p><u>1999 PCCI Report</u>, p. 28: “Deep water currents and the water depth itself will be a challenge for subsea oil containment. . . . Intervention or containment at the wellhead may require the placement and/or removal of large equipment pieces with several tons at depth. . . . The blowout area may be filled with debris from the surrounding structure and pipes that have fallen down . . . .”</p>



42	<p>“Complications associated with responding to a deepwater blowout include inaccessibility of the well, methane hydrate formation at lower seafloor water temperatures, longer times needed to move ROVs and equipment from the surface to the work zone, and the need to work with larger and less available support equipment due to the greater water pressure.” July 12 Decision, p. 10.</p>	<p>2000 GOM Deepwater Report, p. III-8: “A phenomenon called gas hydrates is also found in deepwater areas of the Gulf of Mexico. Gas hydrates are natural, solid methane-water ice matrices that form under conditions of high pressure and low temperatures. . . . Drilling into the gas hydrates can result in problems in well control . . .”</p> <p>1999 PCCI Report, p. 31: “The blowout plume will make it difficult to approach the well with anything but very massive equipment pieces or ROVs. The operation of ROVs will be difficult around the blow out point.”</p>
43	<p>“[T]here is a need to temporarily pause certain drilling activity to allow for the installation of safety and environmental protection equipment.” July 12 Decision, at p. 10.</p>	<p>Hayes Dec. ¶ 11(a): “[The] Safety Report also explains that the suspension will allow the Department to implement new safety measures . . .”</p>
44	<p>“As detailed in the Safety Report, substantial improvement in the industry’s safety practices and procedures relating to offshore drilling, particularly with respect to deepwater drilling conducted from floating rigs and production facilities, is necessary.” July 12 Decision, p. 10.</p>	<p>May 27 Safety Report: “[T]he recommendations are designed to address specific policies, practices, and procedures, which the Department has identified as important for workplace and environmental safety.”</p>
45	<p>“While some of the drilling safety recommendations contained in the Safety Report are being implemented through industry compliance with NTL No. 2010-NO5, the Safety Report also describes regulatory gaps and other shortcomings in the Bureau’s current regulatory scheme for offshore drilling.” July 12 Decision, p. 10.</p>	<p>Black Dec. ¶ 3: “The Safety Report recommends . . . prescriptive near-term requirements, longer-term performance-based safety measures, and one ore more Department-led working groups to evaluate longer-term safety issues.”</p>
46	<p>“Some of the Safety Report’s recommendations for filling regulatory gaps will be accomplished through subsequent rulemaking, which BOEM plans to issue within 120 days from the issuance of the May 27, 2010, Safety Report.” July 12 Decision, p. 10.</p>	<p>Hayes Dec. ¶ 11(a): “[T]he Safety Report also explains that the suspension will allow the Department to implement new safety measures and regulations through the use of . . . interim final rules, and notice and comment rulemaking.”</p>
47	<p>“The Safety Report also anticipates that technical workgroups will be formed, and that they will provide recommendations within 180 days.” July 12 Decision, p. 10.</p>	<p>May 27 Safety Report, p. 28: “The Department will immediately establish a workgroup” to “study additional safety training and certification requirements.”</p>

48	<p>“[O]nly the NTL No. 2010-NO5 safety measures will be implemented in the near term. . . . [F]ulfillment of NTL No. 2010-NO5’s requirements will not completely address all of the identified safety concerns and more time will be needed for rulemaking and assessment of the technical workgroups’ recommendations” July 12 Decision, p. 10-11.</p>	<p><u>May 27 Safety Report</u>, pp. 29-30: While “the Secretary is committed to implementing the changes in this report at the same time this and other reviews are ongoing . . .,” those measures “represent only the beginning of the Department’s work.”</p>
49	<p>“The November 30, 2010, date also allows time for the technical workgroups to provide an opportunity for them to provide input.” July 12 Decision, p. 11.</p>	<p><u>May 27 Safety Report</u>, p. 28: “The Department will immediately establish a workgroup” to “study additional safety training and certification requirements.”</p>
50	<p>“The BOEM is also considering further safety-related requirements relating to, for example, blind shear ram redundancy requirements and the establishment of deepwater well-control guidelines.” July 12 Decision, p. 11.</p>	<p><u>May 27 Safety Report</u>, p. 20: Recommending “new blind shear ram redundancy requirement” and “requirements for secondary BOP control systems . . . on all subsea BOPs.”</p>
51	<p>“I have requested that the Safety Oversight Board . . . provide input regarding inspections and other safety and enforcement-related issues by August 15, 2010, based on preliminary findings of the BOEM/United States Coast Guard Joint Investigation and other information gathered by the Safety Oversight Board.” July 12 Decision, p. 11.</p>	<p><u>April 30 Order</u>: “This Order establishes . . . the . . . Safety Oversight Board. . . . The duties of the OCS Safety Oversight Board shall include . . . [m]aking recommendations to the Secretary and the Deputy Secretary to improve and strengthen the Department’s overall management, regulation, and oversight of OCS operations . . . .”</p>
52	<p>“The root cause of the BP Oil Spill has not yet been identified.” July 12 Decision, p. 11.</p>	<p>See Bases 3, 4 and 27 above (discussing the investigation of the unknown “root causes” of the Deepwater Horizon Incident).</p>
53	<p>“I will be receiving additional information about the risk factors associated with deepwater drilling based on the many investigations that are now underway . . . .” July 12 Decision, p. 11.</p>	<p><u>May 27 Safety Report</u>, p. 30: “As the Presidential Commission completes its review and as the Department and the U.S. Coast Guard finish the root cause investigation, the Department will know more and will respond accordingly.”</p>
54	<p>“Industry executives have acknowledged the relevance of the on-going investigations to determinations about deepwater drilling safety.” July 12 Decision, p. 11 n. 11.</p>	<p><u>April 30 Shell Letter to Secretary Salazar</u>.<sup>42</sup> “I fully support the Administration’s decision to perform a thorough investigation into the root cause of the incident, as well as why the BOP system failed.”</p>

<sup>42</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B02\_00001\_0012 (letter from Marvin E. Odum, President, Shell Oil Company, to Secretary Salazar, dated April 30, 2010) (hereinafter “April 30 Shell Letter to Secretary Salazar”).

<p><u>May 11 Transocean Statement</u>,<sup>43</sup> p. 6: “Until we fully understand what happened on April 20, we cannot determine with certainty how best to prevent such tragedies in the future.”</p> <p><u>May 17 Joint Industry Task Force Paper</u>,<sup>44</sup> p. 1: “The oil and natural gas industry is committed to working with this Department and the Administration as we move forward in efforts to improve offshore safety.”</p> <p>See also Basis 17 above (quoting <u>May 27 Safety Report</u> and <u>Hayes Dec.</u> regarding the historical record of very few large incidents).</p> <p>This conclusion relies on pre-May 28 information, as demonstrated by the May 15 date of the memorandum cited in the July 12 Decision as support for this conclusion.</p> <p>This is an unsupported conclusion. No allegedly “new evidence” is cited. However, to the extent that the support for this conclusion is derived from the testing of the relief well BOPs, this information was available as of May 24. See Basis 14 above.</p> <p>See Basis 57 above.</p> <p>See also Basis 9 above (quoting <u>May 28 Memorandum</u>).</p>	
<p>“The fact that the industry has a track record of relatively few accidents, and that the inspections of current deepwater rigs have uncovered only limited infractions, does not change the present risk or my conclusion.” July 12 Decision, p. 11.</p> <p>“[T]he BP Oil Spill disaster occurred, regardless of prior inspection results, and regardless of the prior accident history of the <i>Deepwater Horizon</i> and other, similar rigs.” July 12 Decision, p. 11 (citing “BOEM Information Memorandum for the Secretary Re: Inspection History of Deepwater Horizon (May 15, 2010)”).</p> <p>“[N]ew evidence has emerged that suggest that the deepwater drilling industry may face some industry-wide risks (e.g., with regard to BOPs) that should be addressed before new deepwater drilling goes forward.” July 12 Decision, p. 11.</p> <p>“Until the Department can implement rules to address newly-identified deepwater drilling concerns, rig-by-rig compliance reviews conducted under the current regime cannot ensure safety.” July 12 Decision, pp. 11-12.</p>	
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<sup>43</sup> *Economic and Environmental Impacts of the Recent Oil Spill in the Gulf of Mexico Before the S. Comm. on Environment and Public Works*, 111th Cong. (May 11, 2010) (written statement by Steven L. Newman, President and CEO of Transocean, Ltd.), available at [http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore\\_id=e300460b-64ed-4c87-8f35-b641b85690c8](http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=e300460b-64ed-4c87-8f35-b641b85690c8) (last visited Aug. 24, 2010).

<sup>44</sup> Black Dec., Ex. A (*White Paper: Recommendations for Improving Offshore Safety, Joint Industry Task Force to Address Offshore Operating Procedures and Equipment*, dated May 17, 2010) (hereinafter “May 17 Joint Industry Task Force Paper”).

	<p>But consider Basis 14 (quoting conclusion set forth in <u>McNutt Memorandum</u> that the testing required on the relief well BOPs would prevent further BOP failures) and Basis 12 (citing <u>May 24 Dr. Bea Memorandum</u> statement that this disaster was preventable had existing guidelines and practices been followed)).</p>
<p>59</p> <p>“The current regulatory regime for offshore operations is not sufficient to ensure safety and environmental protection, there is a need to bolster and improve safety measures.” July 12 Decision, p. 12.</p>	<p><u>May 27 Safety Report</u>, p. 18: “[T]he recommendations are designed to address specific policies, practices, and procedures, which the Department has identified as important for workplace and environmental safety . . . .”</p> <p><u>May 27 Safety Report</u>, p.30: “The measures contained in this report will increase the safety in offshore oil and gas development, but represent only the beginning of the Department’s work.”</p> <p>But consider Basis 12 above (citing <u>May 24 Dr. Bea Memorandum</u>, p. 1 (“[T]his disaster was preventable had existing progressive guidelines and practices been followed.”)).</p> <p><u>May 12 Saucier Testimony</u>.<sup>45</sup></p>
<p>60</p> <p>“Testimony before the BOEM/USCG Joint Investigation by MMS inspectors has indicated that BOP inspection and testing requirements should be strengthened, a conclusion that my Safety Report also has endorsed.” July 12 Decision, p. 12.</p>	<p><u>May 27 Safety Report</u>, pp. 19-22: Setting forth recommendations regarding inspection, testing, and certification of BOP equipment and emergency systems.</p>

<sup>45</sup> *Deepwater Horizon Joint Investigation Transcript* (May 12, 2010) (testimony of Mr. Michael Saucier, Regional Supervisor for Field Operations, Gulf of Mexico Region, Minerals Management Service), *transcript available at* <http://www.deepwaterinvestigation.com/external/content/document/3043/621931/1/Deepwater%20Horizon%20Joint%20Investigation%20Transcript%20-%20May%2012,%202010.pdf> (last visited Aug. 24, 2010).

**(2) INTERVENTION AND CONTAINMENT “INADEQUACIES”**

#	<b>Basis Asserted in July 12 Decision</b>	<b>Pre-May 28 Information or Conclusion</b>
61	<p>“The BP Oil Spill is a dynamic situation, and new information is made available every day about the risks associated with deepwater drilling on the OCS, including: . . . (2) the inadequacies of a variety of attempted wild well intervention and blowout containment strategies . . .” July 12 Decision, p. 2.</p>	<p>The Department’s safety experts concluded by May 27 that well control and containment strategies were inadequate, as demonstrated by the following recommendations set forth in the <u>May 27 Safety Report</u>, Executive Summary, p. 2:</p> <ul style="list-style-type: none"> <li>- “[d]evelopment of enhanced deepwater well-control procedures. . .”</li> <li>- “[a] comprehensive study of methods for more rapid and effective response to deepwater blowouts.”</li> </ul> <p>See Basis 61 above.</p>
62	<p>“Recent events have also made clear that there are systemic problems that apply across different types of deepwater drilling, including, but not limited too, . . . a lack of viable deepwater wild well intervention and blowout containment strategies and capabilities . . .” July 12 Decision, p. 2.</p>	<p>2000 GOM Deepwater Report, p.II-16-II-17: “The availability of rigs capable of drilling in similar water depths, riser components, and associated deepwater drilling equipment may be limited. . . . Complications could arise because of the increased distance from shore and potentially greater spill rates.”</p>
63	<p>“The oil industry has limited capability to stop an uncontrolled blowout of an oil well in deepwater.” July 12 Decision, p. 4.</p>	<p>See Basis 6 above (quoting <u>May 24 Allen Statement</u> statement that the “ultimate solution” of the “relief well” will be “sometime in August” and <u>2000 GOM Deepwater Report</u> statement that “[i]t is estimated that the entire intervention effort for a blowout could range from 60 to 120 days.”)</p>
64	<p>“BP’s inability, after more than 80 days, to contain the Macondo blowout and spill provides continuing evidence that BP – and the rest of the industry, which has been cooperating with BP in its efforts to contain the on-going spill – had not prepared to contain a blowout in the deepwater environment.” July 12 Decision, pp. 4, 12.</p>	<p><u>May 12 McKay Statement</u>,<sup>46</sup> p. 2: “Work continues on a subsea oil recovery plan using a containment system . . . This system</p>
65	<p>“In Congressional testimony, industry executives have admitted that their industry is unprepared to stop deepwater oil</p>	<p>oil recovery plan using a containment system . . . This system</p>

<sup>46</sup> *Inquiry into the Deepwater Horizon Gulf Coast Spill Before the H. Comm. on Energy and Commerce Subcomm. on Oversight and Investigations*, 111th Congress (May 12, 2010) (statement by Lamar McKay, Chairman and President, BP America) (hereinafter “May 12 McKay Statement”), available at [http://energycommerce.house.gov/Press\\_111/20100512/McKay\\_Testimony.05.12.2010.pdf](http://energycommerce.house.gov/Press_111/20100512/McKay_Testimony.05.12.2010.pdf) (last visited Aug. 24, 2010).

	well blowouts effectively, and that many of the containment methods attempted with respect to the Macondo blowout have been improvised and untested.” July 12 Decision, p. 4, 13.	has never been used before at 5,000 feet. Engineers are now working to see if these challenges can be overcome.”
66	“Although industry has begun to organize efforts to address strategies and options for subsea well control and blowout containment, much work remains to be done to develop effective containment and response options as well as to achieve an appropriate level of preparedness in the event of another deepwater wild well [blowout].” July 12 Decision, pp. 4, 13. [citing API submissions 7/6/10]	<u>May 17 Joint Industry Task Force Paper</u> , p. 1: Stating that a general objective of the Joint Industry Task Force is to “[p]rovide a plan to apply findings from the GOM Incident Root Cause Analysis to revise existing API standards and MMS rule making processes to reflect any identified improvements.”
67	“I have witnessed on a daily basis the results of inadequate equipment and planning to contain a deepwater blowout.” July 12 Decision, p. 12.	<u>Hayes Dec.</u> ¶ 6: “I have traveled to the Gulf of Mexico to witness firsthand the massive nature of this disaster and the response effort to contain the spill.”
68	“[A] long litany of failed or only partially successful attempt to contain the leak, even as hundreds of thousands of additional barrels of oil and large volumes of gas continue to pollute the Gulf of Mexico.” July 12 Decision, p. 12.	<u>May 26 Birnbaum Statement</u> , p. 4: “Even before the relief well plans were submitted, MMS was also overseeing BP’s efforts to close off the flow of oil at the wellhead. MMS oversight of this BP effort continues to this day.”
69	“Immediately after the accident, ROVs made many unsuccessful attempts to close the BOP’s rams via ‘hot stabbing.’ Multiple attempts were made over many days on	<u>May 27 McKay Testimony</u> : <sup>47</sup> “Our first priority is to stop the flow of oil and secure the well. In order to do that, we are using multiple deepwater drilling units, numerous support vessels and Remotely Operated Vehicles (ROVs) working on several concurrent strategies: . . . ‘Top kill’ . . . Lower Marine Riser Package (LMRP) Cap . . . Riser Insertion Tube . . . Containment Recovery System . . . ‘Hot tap’ . . . Dispersant injection at the sea floor . . . Drilling relief wells.” <u>May 26 Birnbaum Statement</u> , p. 4: “[I]nitial attempts to close the blow-out preventer (BOP) using the approved secondary mechanism of a ‘hot stab’ from a remote operating vehicle

<sup>47</sup> *Outer Continental Shelf Oil and Gas Strategy and Implications of the Deepwater Horizon Rig Explosion Before the H. Committee on Natural Resources*, 111th Cong. (May 27, 2010) (statement of Lamar McKay, Chairman and President, BP America (hereinafter “May 27 McKay Testimony”), available at [http://resourcescommittee.house.gov/images/Documents/20100527/testimony\\_mckay.pdf](http://resourcescommittee.house.gov/images/Documents/20100527/testimony_mckay.pdf) (last visited Aug. 24, 2010).

	virtually all of the types of rams included in the BOP stack – all to no avail.” July 12 Decision, p. 12.	(ROV) did not succeed. Since then, efforts to reengineer the BOP stack while it sits on the wellhead have had varying degrees of success.”
70	“Next a containment dome was lowered over the well, but the failure to anticipate the formation of hydrates in the deepwater environment led to its failure as hydrates formed quickly, making the dome buoyant, and virtually uncontrollable.” July 12 Decision, p. 12.	<u>May 27 McKay Testimony</u> : “Initial efforts to place a large containment dome over the main leak point were suspended as a build-up of hydrates, essentially ice-like crystals, prevented a successful placement of the dome over the spill area.”
71	“After that, a hastily-engineered ‘riser insertion tool’ was installed at the end of the riser, providing limited containment, while the ‘kink’ in the riser near the wellhead continued to fail and emerged as a major additional leak.” July 12 Decision, p. 13.	<u>May 26 Birnbaum Statement</u> , p. 4: “BP has seen some success with the riser insertion tube tool, or RITT, which has brought some oil and gas directly to the surface and into a production vessel, reducing the amount of oil that is polluting the ocean.”
72	“[A] multiple-week construction effort was undertaken to prepare a long-distance hook-up for a ‘top kill’ operation, using heavy drilling mud. The top killed failed.” July 12 Decision, p. 13.	<u>May 27 McKay Testimony</u> : “It cannot be predicted how long it will take for the [‘top kill’] operation to prove successful or otherwise.”
73	“[E]fforts [were] made to execute a ‘clean’ cut of the riser near the top of the BOP stack and install a fitted cape over the riser.” July 12 Decision, p. 13.	<u>May 26 Incident Information Center Update</u> : <sup>48</sup> The “top kill” commenced on May 26, 2010.
74	“A more crude cut was accomplished and an ill-fitting ‘top hat’ was installed.” July 12 Decision, p. 13.	<u>May 27 McKay Testimony</u> : “[A] lower marine riser package cap containment option . . . would first involve removing the damaged riser from the top of the BOP, leaving a cleanly-cut pipe at the top of the BOP’s [Lower Marine Riser Package].”
75	“[A]dditional containment options have been pursued, with BP scrambling to identify ships and other equipment to undertake a large containment effort.” July 12 Decision, p. 13.	<u>May 27 McKay Testimony</u> : “A second, smaller containment dome, . . . called a “top hat,” is being readied to lower over the main leak point, if needed.” <u>May 27 McKay Testimony</u> : “The industry as a whole has responded in full support. Among the resources that have been made available[, including]: . . . more remotely operated vehicles (ROVs) for deep underwater work, barges, support vessels and

<sup>48</sup> *The Ongoing Administration-Wide Response to the Deepwater Horizon BP Oil Spill* (May 26, 2010) Deepwater Horizon Incident Joint Information Center, available at <http://app.restorethegulf.gov/doc/2931/568303/> (last visited Aug. 18, 2010).



76	<p>“All of these efforts have been greatly complicated by the lack of precise information regarding the size of the uncontained flow, and the fact that BP has not had the equipment available to measure the flow, either directly, or through the installation of pressure measurement equipment.” July 12 Decision, p. 13.</p>	<p>additional aircraft . . . .”</p> <p><u>May 27 Incident Information Center Update</u>:<sup>49</sup> “Since day one, the Administration’s deployments of resources and tactics in response to the BP oil spill have been based on a worst-case, catastrophic scenario, and had not been contained by flow rate estimates.”</p> <p><u>May 27 Flow Rate Press Release</u><sup>50</sup>: Estimated flow rate was calculated by National Incident Command Center’s Flow Rate Technical Group to be between 12,000 and 19,000 barrels per day.</p>
77	<p>“The BOEM’s daily incident reports chronicle the multiple unsuccessful or partially successful attempts to contain the Macondo well blowout.” July 12 Decision, p. 13.</p>	<p>See Bases 68-75 above (discussing containment attempts).</p>

<sup>49</sup> *The Ongoing Administration-Wide Response to the Deepwater Horizon BP Oil Spill* (May 27, 2010), Deepwater Horizon Incident Joint Information Center, available at <http://app.restorethegulf.gov/doc/2931/571367/> (last visited Aug. 18, 2010).

<sup>50</sup> Flow Rate Group Provides Preliminary Best Estimate Of Oil Flowing from BP Oil Well (May 27, 2010), Deepwater Horizon Incident Joint Information Center, available at <http://app.restorethegulf.gov/doc/2931/569235/> (last visited Aug. 18, 2010).



**(3) RESPONSE CAPABILITIES**

#	<b>Basis Asserted in July 12 Decision</b>	<b>Pre-May 28 Information or Conclusion</b>
78	<p>“The BP Oil Spill is a dynamic situation, and new information is made available every day about the risks associated with deepwater drilling on the OCS, including: . . . (3) inadequacies in oil spill response plans and resources, particularly in light of the ongoing response to the BP Oil Spill.” July 12 Decision, p. 2.</p>	<p>The Department’s safety experts concluded by May 27 that there were inadequacies in oil spill response plans and resources, as demonstrated by the following recommendation set forth in <u>May 27 Safety Report</u>, Executive Summary, p. 2:</p> <ul style="list-style-type: none"> <li>- “[n]ew rules requiring that offshore operators have in place a comprehensive, systems-based approach to . . . environmental management.”</li> </ul> <p>See Basis 78 above.</p>
79	<p>“Recent events have also made clear that there are systemic problems that apply across different types of deepwater drilling, including, but not limited too, . . . inadequacies in oil spill response plans and resources, particularly in light of the ongoing response to the BP Oil Spill” July 12 Decision, p. 2.</p>	
80	<p>“[T]he unprecedented deployment of spill response equipment and cleanup crews to address the massive BP Oil Spill raises serious legal and practical questions about whether other deepwater operators would be able to employ adequate quantities of skimmers, boom and other oil spill response resources to address another spill if it occurs.” July 12 Decision, p. 4. [citing 5/15/10 document]</p>	<p><u>May 19 Rep. Cummings Statement</u><sup>51</sup>, p. 1: “[T]here are . . . issues that require in-depth investigation, including . . . the adequacy of BP’s oil spill response plan for the Macondo well site and frankly the adequacy of all oil spill response plans for sites in deepwater . . .”</p>
81	<p>“Shallow water spills tend to be more confined and easier to address, if only because of the smaller geographic area affected by the spill. For example, with respect to the BP Oil Spill, it has been estimated that each molecule of oil can take</p>	<p><u>1997 Subsea Oil Well Blowouts Report</u>:<sup>52</sup> Containing a full analysis of the time for oil to reach surface and the distance it will travel prior to reaching the surface in a Gulf of Mexico 30,000 bbl/day deepwater blowout. The report predicted the rise</p>

<sup>51</sup> *Deepwater Horizon: Oil Spill Prevention and Response Measures, and Natural Resource Impacts Before the H. Comm. on Transportation and Infrastructure*, 111th Cong. (May 19, 2010) (opening statement by Honorable Elijah E. Cummings, Chair – Subcommittee on Coast Guard and Marine Transportation) (hereinafter “May 19 Rep. Cummings Statement”), available at <http://transportation.house.gov/Media/file/Full%20Committee/20100519/EEC.pdf> (last visited Aug. 24, 2010).

<sup>52</sup> *Fate and Behavior of Deepwater Subsea Oil Well Blowouts in the Gulf of Mexico for Minerals Management Service* (Oct. 1997), TA&R Project 287, available at <http://www.boemre.gov/tarprojects/287.htm> (last visited Aug. 24, 2010)

<p>as much as three hours to reach the surface, thereby creating conditions that allow for the spill to spread over a large geographic area.” July 12 Decision, p. 4 n.2.</p>	<p>time for a spill at 1500 meters to be between 4.9 hours and 10.5 hours depending upon oil density and the distance traveled would be between 7.5 and 17.6 kilometers between source and surface manifestation.</p>
<p>82</p> <p>“[T]here may be insufficient resources available to respond should another deepwater spill occur while the BP Oil Spill Containment and Clean-up efforts are at their peak.” July 12 Decision, pp. 4-5.</p>	<p>The extent of resources available to respond to a worst-case scenario was known as of May 28 based upon the following:</p> <ul style="list-style-type: none"> <li>- <u>National Response Resource Inventory (NRI)</u>,<sup>53</sup> p.1: A national database of response systems maintained by the Coast Guard National Strike Force Coordination Center pursuant to the Oil Pollution Act of 1999. The NRI catalogues all skimmers, transfer pumps, boom, vessels, and trained personnel in a single national database.</li> <li>- <u>National Vessel Documentation Center</u>.<sup>54</sup> The National Vessel Documentation Center administered by the United States Coast Guard maintains a registry of U.S. flag vessels and a list of foreign flag vessels operating on the Outer Continental Shelf.</li> <li>- See Basis 76 above (quoting <u>May 27 Incident Information Center Update</u> statement that “since day one” the Administration’s deployments were based on a “worst-case, catastrophic scenario”).</li> <li>- See <u>BP Regional Oil Spill Response Plan</u>,<sup>55</sup> on file with MMS (see Basis 83 below) and revision-dated June 30, 2009, providing that BP’s worst-case discharge scenario for an exploratory well from offshore drilling was 250,000 barrels of crude oil per day. <u>BP Regional Oil</u></li> </ul>

<sup>53</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B48\_00001\_0007 (“National Response Resource Inventory: Response Resources / Capabilities Remaining in each District”) (hereinafter “National Response Resource Inventory (NRI)”). A copy of the page of the National Response Resource Inventory (NRI) cited herein is attached hereto as Exhibit 1-K. See also *Resource Response (NRI) Inventory Branch*, available at <http://www.useg.mil/hq/nsfweb/nsfweb/ops/ResponseSupport/RRIB/tri.asp> (last visited Aug. 24, 2010)

<sup>54</sup> *National Vessel Documentation Center*, United States Coast Guard, available at <http://www.uscg.mil/hq/cg5/nvdc/> (last visited Aug. 24, 2010)

<sup>55</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B06\_00001\_0001 (“BP Gulf of Mexico Regional / Oil Spill Response Plan”) (hereinafter “BP Regional Oil Spill Response Plan”).

		<p><u>Spill Response Plan</u>, App. H, p. 30.</p> <p>See also <u>Other Operators’ Regional Oil Spill Response Plans</u>,<sup>56</sup> also on file with MMS (see Basis 83 below), which each provide their worst-case scenarios.</p> <p>Based upon this data available as of May 28 and the pre-May 28 conclusion that the Macondo spill was a “worst-case scenario”, the Department of the Interior could have conducted the necessary calculations to determine whether or not resources were available to respond to a second spill. See <u>generally Allen Skimmer Inventory Statement</u><sup>57</sup> (“We’re doing a national inventory [of skimmers] right now. . . . We may have to make a decision to move skimmers from some part of the United States. . . and we’re having that discussion right now.”).</p> <p><u>May 26 Lubchenco Statement</u>:<sup>58</sup> “Although unlikely, if another large spill was to occur simultaneously in another location across the United States, NOAA would have difficulty responding to its complete ability.”</p> <p>See Basis 80 above (quoting <u>May 19 Rep. Cummings Statement</u>).</p> <p>Copies of all Outer Continental Shelf operators’ response plans</p>
83	“Before deepwater drilling resumes, oil spill response plans need to be reviewed under the changed circumstances presented by the BP Oil Spill to determine whether sufficient spill response resources are available to address another	

<sup>56</sup> July 12 Decision Administrative Record, File Nos. DOI\_WDC\_B06\_00001\_0002 (“Chevron Gulf of Mexico Regional OSRP Oil Spill Response Plan”), DOI\_WDC\_B06\_00001\_0003 (“ConocoPhillips Gulf of Mexico Regional Oil Spill Response Plan”), DOI\_WDC\_B06\_00001\_0004 (“Exxon Mobil Gulf of Mexico Regional Response Plan Quick Guide”), and DOI\_WDC\_B06\_00001\_0005 (“Shell Offshore Inc. Gulf of Mexico Regional Oil Spill Response Plan”).

<sup>57</sup> *Transcript – National Incident Commander and White House Press Secretary – Press Briefing* (Jun 7, 2010), Deepwater Horizon Incident Joint Information Center, available at <http://app.restorethegulf.gov/go/doc/2931/597631/> (last visited Aug. 24, 2010).

<sup>58</sup> *Outer Continental Shelf Oil and Gas Strategy and Implications of the Deepwater Horizon Rig Explosion Before the H. Natural Resources Comm.*, 111th Cong. (May 26, 2010) (statement by Dr. Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmosphere and NOAA Coordinator, National Oceanic and Atmospheric Administration, U.S. Department of Commerce) (hereinafter May 26 Lubchenco Statement), available at, [http://resourcescommittee.house.gov/images/Documents/20100526/testimony\\_lubchenco.pdf](http://resourcescommittee.house.gov/images/Documents/20100526/testimony_lubchenco.pdf) (last visited Aug. 24, 2010).

	<p>deepwater event.” July 12 Decision, p. 5.</p>	<p>were on file with the Minerals Management Service (“MMS”) as of May 28, as demonstrated by the following statements:</p> <ul style="list-style-type: none"> <li>- <u>May 19 Birnbaum Statement</u>,<sup>59</sup> p. 7: “All regional and site-specific OSRPs are required to be reviewed and updated annually, and all modifications of an OSRP are submitted to MMS for approval.”</li> <li>- <u>May 19 Birnbaum Statement</u>, p. 8: “In the Gulf of Mexico, for example, digital copies of the MMS-approved OSRPs are maintained at the MMS office in New Orleans, Louisiana . . . .”</li> </ul>
84	<p>“The <i>Deepwater Horizon</i> incident has demonstrated the inadequacy of response plans, and steps must be considered to ensure that those engaged in drilling offshore are complying with current regulations.” July 12 Decision, p. 14.</p>	<p>See Basis 83 above.</p> <p><u>May 3 Letter from Rep. Issa to Secretary Salazar</u><sup>60</sup>, pp. 1-2: “[W]e will assess whether the Interior Department’s Minerals Management Service (MMS) . . . has promulgated regulations necessary to ensure the safety and operability of vessels drilling the Gulf of Mexico. . . . The American people also have a right to know whether the federal government possessed and implemented an appropriate emergency response plan to mitigate this disaster.”</p>
85	<p>“The current situation also poses a serious question as to whether industry is in compliance with existing regulatory requirements.” July 12 Decision, p. 14.</p>	<p><u>May 27 Safety Report: Recommending “increased enforcement of existing safety regulations and procedures”</u>.</p>
86	<p>“The BP Oil Spill response effort has revealed major</p>	<p><u>May 19 Rep. Oberstar Statement</u>,<sup>61</sup> p.1: “When BP obtained</p>

<sup>59</sup> *Deepwater Horizon: Oil Spill Prevention and Response Measures, and Natural Resource Impacts Before the H. Comm. on Transportation and Infrastructure*, 111th Cong. (May 19, 2010) (statement by S. Elizabeth Birnbaum, Director, Minerals Management Service) (hereinafter “May 19 Birnbaum Statement”), available at <http://transportation.house.gov/Media/file/Full%20Committee/20100519/Birnbaum%20Testimony.pdf> (last visited Aug. 24, 2010).

<sup>60</sup> Letter from Honorable Darrell Issa, Ranking Member, House Committee on Oversight and Government Reform, to Honorable Ken Salazar, Secretary, U.S. Department of the Interior (May 3, 2010). A copy of the May 3 Letter from Rep. Issa to Secretary Salazar is attached hereto as Exhibit 1-L.

<sup>61</sup> *Deepwater Horizon: Oil Spill Prevention and Response Measures, and Natural Resource Impacts Before the H. Comm. on Transportation and Infrastructure*, 111th Cong. (May 19, 2010) (opening statement by Honorable James L. Oberstar, Chairman – House Committee on Transportation and Infrastructure) (hereinafter “May 19 Rep. Oberstar Statement”), available at <http://transportation.house.gov/Media/file/Full%20Committee/20100519/JLO.pdf> (last visited Aug. 24, 2010).

	<p>deficiencies with respect to the adequacy and functionality of the equipment that was staged and deployed in connection with attempts to contain the spill; the adequacy of the applicable Offshore Spill Response Plan (OSRP) components and their implementation; and the expertise and training of personnel involved in the BP Oil Spill containment efforts.” July 12 Decision, p. 14.</p>	<p>approval for its safety and response plan for drilling the Gulf site, BP claimed that if there was a spill, the spill would not have an environmental impact because BP would rely upon ‘industry wide standards for using proven equipment and technology’ to respond to the spill. Almost a month has passed since the spill, and BP’s Response Plan has failed to stop most of the continuing discharge or to contain most of the oil already discharged.”</p> <p>See also Bases 69-74 above (discussing containment strategies attempted prior to May 28).</p>
87	<p>“This is not a question of a specific operator’s record, but a measure of the adequacy of the entire industry’s containment plans and capacity to address major spills in the deepwater environment. BP was not the only operator drilling with inadequate plans.” July 12 Decision, p. 14.</p>	<p>See Basis 80 above (quoting <u>May 19 Rep. Cummings Statement</u>).</p> <p>See Basis 86 above (quoting <u>May 19 Rep. Oberstar Statement</u>).</p> <p>See also Bases 69-74 above (discussing containment strategies attempted prior to May 28).</p> <p>See Basis 86 above (quoting <u>May 19 Rep. Oberstar Statement</u>).</p>
88	<p>“The House Subcommittee on Energy and Environment reviewed the preparedness plans of five major oil companies and concluded that they were no better prepared to deal with a major oil spill than BP, and if a major blowout had occurred at another operator’s well, they would not have been any more prepared to respond.” July 12 Decision, p. 14.</p>	<p>See Basis 82 above (discussing the RRI catalogue of all skimmers, transfer pumps, boom, vessels, and trained personnel in a single national database available as of May 28).</p>
89	<p>“The unprecedented deployment of spill response equipment and cleanup crews to the vicinity of the Macondo well and regional shorelines in response to the BP Oil Spill raises serious concerns about the industry’s and the Government’s current ability to respond in a meaningful way to another deepwater spill.” July 12 Decision, p. 14.</p>	<p>See Basis 82 above (quoting <u>May 26 Lubchenco Statement</u> about difficulty in responding to hypothetical second spill).</p>
90	<p>“There are insufficient resources currently available to respond should another deepwater spill occur while the BP Oil Spill containment and clean-up effort is going.” July 12 Decision, p. 14.</p>	

91	<p>“As an industry executive recently testified before Congress, [regional response] plans look the same because in fact they call upon the same resources to respond.” July 12 Decision, pp. 14-15.</p>	<p>See Basis 83 above (quoting <u>May 19 Birbaum Statement</u> to demonstrate that copies of all response were available and on file with MMS as of May 28).</p>
92	<p>“As late as March 2010, BP had submitted its report on cleanup capacity projecting the capacity to skim and remove 491,721 barrels of oil per day. As of July 5 BP’s skimming operations have averaged less than 900 barrels per day equivalent.” July 12 Decision, p. 15 (citing Kindy Kimberly, <i>Recovery Effort Falls Short of BP’s Promises</i>, The Washington Post (July 6, 2010)).</p>	<p>It was possible to calculate as of May 28 the average barrels of oil collected per day. That fact was available using the same formula or calculation that was applied to determine the number on July 5. See, e.g., <u>May 27 MMS Update</u>,<sup>62</sup> p. 2 (reporting that 11.5 million gallons of oily water had been recovered through May 27).</p>
93	<p>“Industry executives have testified and stated repeatedly that they already have offered all available resources to the BP Oil Spill.” July 12 Decision, p. 15.</p>	<p><u>April 30 Shell Letter to Secretary Salazar</u>: “Given the magnitude of the incident, Shell immediately provided support and resources to response and recovery.”</p> <p><u>April 30 Chevron Email to Director Birbaum</u>:<sup>63</sup> “We are actively working to provide both direct and indirect support.”</p> <p><u>April 30 ConocoPhillips Letter to Director Birbaum</u>:<sup>64</sup> “We have offered our assistance to BP and were in communication with their operations personnel this morning.”</p> <p><u>April 30 Incident Information Center Update</u>:<sup>65</sup> On April 30, it was reported that Secretary of Defense Robert Gates authorized the use of National Guard members.</p>
94	<p>“U.S. military and foreign resources are being utilized in the response effort.” July 12 Decision, p. 15.</p>	<p><u>May 1 Incident Information Center Update</u>:<sup>66</sup> On May 1, it was</p>

<sup>62</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B12\_00001\_0185 (“Offshore Incident Report Update – May 27, 2010 1830 CDT. Minerals Management Service, Gulf of Mexico Region, Offshore Incident Report Final Daily Update (May 27, 2010)).

<sup>63</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B02\_00001\_0004 (email from Gary P. Luquette, President, Chevron North America Exploration and Production Company, to Director Birbaum, dated April 30, 2010).

<sup>64</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B02\_00001\_0005 (letter from Donald G. Hrap, President, Americas, Exploration and Production, ConocoPhillips Company, to Director Birbaum, dated April 30, 2010).

<sup>65</sup> *Statement on National Guard Mobilization* (Apr. 30, 2010), available at <http://app.restorethegulf.gov/doc/2931/535139/> (last visited Aug. 24, 2010).

<p>reported that Secretary of Defense Robert Gates approved the use of two C-130 aircraft.</p> <p><u>May 10 Incident Information Center Update</u>.<sup>67</sup> On May 10, the use of United States Navy assets was reported.</p> <p><u>May 26 Press Briefing</u>,<sup>68</sup> p. 6: “[W]e’ve been taking help from all sorts of locations . . . we b[ro]ught boom in from more than a half dozen different countries.” “I can tell you that Australia was also bringing equipment.”</p> <p><u>Foreign Flag Vessels</u>.<sup>69</sup> Foreign flag vessels, including the <i>Development Driller II</i> and the <i>Development Driller III</i>, have been on-scene and part of the containment effort since early May (see Basis 14 above discussing relief wells being drilled by <i>Development Driller II</i> and <i>Development Driller III</i>).</p> <p><u>National Response Resource Inventory (NRI)</u>: As discussed above in Basis 82, the NRI tracks the response resource inventory – including boom, storage, and skimming capacity – throughout the United States. Therefore, on May 28, information was available to determine the current response resource inventory available and to project the resource inventory that would be available in the future.</p>	<p>“The USCG has determined that the number of oil spill response vessels currently skimming oil is inadequate to recover the oil released from the BP Oil Spill, and additional skimming vessels are being ordered and manufactured to aid with the response. The USCG recently determined that ‘There are simply not enough U.S. [oil spill response vehicles] capable of skimming oil available to keep up with the pace at which oil flows from the [Macondo] well.’” July</p>
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<sup>66</sup> *Update on Administration-wide response efforts in the Gulf Coast* (May 1, 2010), Deepwater Horizon Incident Joint Information Center, available at <http://app.restorethegulf.gov/go/doc/2931/535355/> (last visited Aug. 24, 2010).

<sup>67</sup> *The Ongoing Administration-Wide Response to the Deepwater BP Oil Spill* (May 10, 2010), Deepwater Horizon Incident Joint Information Center, available at <http://app.restorethegulf.gov/go/doc/2931/546651/> (last visited Aug. 24, 2010).

<sup>68</sup> July 12 Decision Administrative Record, File No. DOI\_WDB\_B01\_00001\_0023 (“BP North America Press Briefing”) (May 26, 2010) (statements by Doug Suttles, Chief Operating Officer, BP PLC, and Rear Adm. Mary E. Landry, Commander, Eighth Coast Guard District, U.S. Coast Guard).

<sup>69</sup> Both the *Development Driller II* and *Development Driller III* are Vanuatu-flagged vessels. See *GSF Development Driller II*, available at <https://exchange.dnv.com/exchange/main.aspx?extool=vessel&subview=summary&vesselid=29750> (last visited Aug. 24, 2010) and *GSF Development Driller III*, available at <https://exchange.dnv.com/exchange/main.aspx?extool=vessel&subview=summary&vesselid=30254> (last visited Aug. 24, 2010).



	12 Decision, p. 15.	<p>For instance, on May 28, information was available to determine and project the adequacy of oil spill response vessels on that date and in the future based on the following:</p> <ul style="list-style-type: none"> <li>- spill rate (either “worst case” or between 12,000 and 19,000 barrels per day, see Basis 76);</li> <li>- the longest estimated time necessary to drill a relief well (90 days, see Basis 6 above);</li> <li>- the total number of skimming vessels available and their skimming capacity (in the RRI, see Basis 82); and</li> <li>- the “coordinated response” of the administration “to do everything [it] can to help BP stop its leaks . . . .” See <u>May 10 Salazar Statement</u>.<sup>70</sup></li> </ul>
96	<p>“[T]he USCG and the Environmental Protection Agency (EPA) amended their oil spill response time requirements to allow certain commercial and military vessels normally required to be available for spills in other regions to be deployed in support of the BP Oil Spill response.” July 12 Decision, p. 15.</p>	<p>The joint USCG and EPA temporary interim rule was for the express purpose of “directly assit[ing] in the urgently needed immediate relocation of nationwide oil spill response resources to the Gulf of Mexico to aid in the response to the Deepwater Horizon SONs.” <u>USCG-EPA Interim Rule</u>,<sup>71</sup> p. 2. However, on May 28, information was available to confirm and/or predict such an “urgent need” for additional assistance. See Basis 95 above.</p>
97	<p>“In a June 28, 2010, meeting between Department officials and representatives from the drilling industry, the industry was unable to provide assurances that resources exist that would be available to address a second oil spill.” July 12 Decision, p. 15.</p>	<p>See Basis 76 above (quoting <u>May 27 Incident Information Center Update</u> statement that “since day one” the Administration’s deployments were based on a “worst-case, catastrophic scenario”).</p> <p>See Basis 83 above (quoting <u>May 19 Birnbaum Statement</u> to demonstrate that copies of all response were available and on file with MMS as of May 28).</p>

<sup>70</sup> *Salazar Dispatches NPS and FWS Directors to Gulf Coast Command Centers to Support Fight to Protect Coastal Communities and Wildlife* (May 10, 2010), Deepwater Horizon Incident Joint Information Center, available at <http://app.restoreshoregulf.gov/go/doc/2931/543295/> (last visited Aug. 24, 2010).

<sup>71</sup> July 12 Decision Administrative Record, File No. DOI\_WDC\_B05\_00001\_0025 (“USCG EPA Temporary Suspension of Certain Oil Spill Response Time Requirements 33 CFR Parts 154 and 155”).



<p>98</p> <p>“[A]s concerns about the recent Tropical Storm Alex system in the Gulf of Mexico demonstrate, clean-up operations during hurricane season are subject to multiple weather-related complications, difficulties, and delay. For example, while Alex took a path away from the Macondo site, ocean conditions generated by the storm necessitated that all 510 skimmers responding to the BP Oil Spill be temporarily recalled to shore.” July 12 Decision, pp. 15-16. [citing Admiral Allen briefings from 6/25, 6/26, and 6/28]</p>	<p>Information Center Statement.<sup>72</sup> “From the start, we knew we had the potential to commingle this response with the hurricane. We’ve been working probably for six or seven weeks to have plans on how we were going to manage the response during a hurricane but also how to integrate that response with hurricane response should that happen.”</p> <p>May 15 Landry Statement<sup>73</sup>, p.3: “But the weather sometimes challenges us and we need to be flexible in how we apply these tools.”</p>
<p>99</p> <p>“[T]he storm surge from a hurricane or other significant storm could distribute oil over a wider area and carry the oil into the coastline and inland areas.” July 12 Decision, p. 16. [citing Admiral Allen briefings from 6/29]</p>	<p>LaBelle Dec.<sup>74</sup> ¶ 6: “[H]urricane season, where storms have the potential to drive oil currently residing in the water column and floating on the ocean far inland on storm surges.”</p>
<p>100</p> <p>“The Atlantic hurricane season, which includes the Gulf of Mexico, runs from June 1, 2010 until November 30, 2010.” July 12 Decision, p. 156. [citing NOAA website].</p>	<p>The commencement and conclusion of the Atlantic hurricane season was known on May 28.</p>

<sup>72</sup> *Press Briefing by National Incident Commander* (June 30, 2010), Deepwater Horizon Incident Joint Information Center (statement by Admiral Thad Allen), available at <http://app.restorethegulf.gov/go/doc/2931/727351/> (last visited Aug. 24, 2010).

<sup>73</sup> *Press Briefing*, Deepwater Horizon Incident Joint Command Center (May 15, 2010) (statement by Rear Adm. Mary E. Landry, Commander, Eighth Coast Guard District, U.S. Coast Guard) (hereinafter “May 15 Landry Statement”), available at [http://www.deepwaterhorizonresponse.com/posted/2931/Press\\_Briefing\\_Transcript\\_MAY\\_15.555319.pdf](http://www.deepwaterhorizonresponse.com/posted/2931/Press_Briefing_Transcript_MAY_15.555319.pdf) (last visited Aug. 24, 2010).

<sup>74</sup> Rec. Doc. 33-3 (Declaration of Robert P. LaBelle, Deputy Associate Director, Offshore Energy and Minerals Management, Minerals Management Service, U.S. Department of the Interior) (submitted by Defendants in opposition to preliminary injunction motion).

**(4) REASONS FOR DURATION**

#	<b>Basis Asserted in July 12 Decision</b>	<b>Pre-May 28 Information or Conclusion</b>
101	<p>“This temporary pause in deepwater drilling will provide time for . . . (1) the collection and analysis of key evidence regarding the potential causes of the April 20, 20 10, explosion and sinking of the <i>Deepwater Horizon</i> offshore drilling rig . . . and further efforts to determine the root causes of the accident . . . .” July 12 Decision, p. 2.</p>	<p>See Basis 101 above.</p>
102	<p>“This temporary pause in deepwater drilling will provide time for . . . (2) the assessment of wild well intervention and blowout containment resources . . . to determine the strategies and methods by which they can be made more readily available should another blowout occur . . . .” July 12 Decision, p. 2.</p>	<p>See Basis 101 above.</p>
103	<p>“This temporary pause in deepwater drilling will provide time for . . . (3) the submission of evidence by operators demonstrating that they have the ability to respond effectively to a potential oil spill in the Gulf, given the unprecedented commitment of available oil spill response resources that are now being dedicated to the BP Oil Spill.” July 12 Decision, p. 2.</p>	<p>See Basis 101 above.</p>
104	<p>“The November 30 date will also allow BOEM and the Department to develop the interim rules required to address the safety issues that have recently come to light. Some of these interim rules are expected to be issued within 120 days of the issuance of the May 27, 2010, Departmental report entitled ‘Increased Safety Measures for Energy Development on the Outer Continental Shelf: (Safety Report),’ and additional time will be required after these rulemaking actions are completed for operators to implement the new requirements established by those rules.” July 12 Decision, pp. 2-3, 20.</p>	<p>See Basis 101 above.</p> <p><u>Hayes Dec. ¶ 11(a)</u>: “The Safety Report also explains that the suspension will allow the Department to implement new safety measures and regulations through the use of . . . interim final rules.”</p>

105	<p>“The Atlantic hurricane season also runs from June 1, 2010 until November 30, 2010.” July 12 Decision, pp. 3, 20.</p>	<p>See Basis 100 (the duration of Atlantic hurricane season known as of May 28).</p>
106	<p>“The November 30 end date also takes into account the expected killing or containment of the Macondo well, which is anticipated to occur by approximately mid-August 2010, and which may have an effect on the availability of spill containment and response capabilities for potential use in response to other incidents.” July 12 Decision, pp. 3, 20.</p>	<p>May 12 <u>McKay Statement</u>, p.4: “On Sunday, May 2nd, we began drilling the first of these wells. . . This relief well operation could take approximately three months.”</p> <p>See Basis 6 above (quoting <u>May 24 Allen Statement</u> stating the “ultimate solution” of the “relief well” is “sometime in August”).</p> <p>May 26 <u>Birnbaum Statement</u>, p. 2: “Permanent closure of the well will take several weeks yet as BP finishes drilling a relief well to stop the flow of oil form the damaged well at its source.”</p>
107	<p>“The November 30 date accounts for the requirement that certain Technical Workgroups, established as part of the Government’s response to the BP Oil Spill, provide recommendations to improve OCS drilling operations within 180 days of the issuance of the Safety Report.” July 12 Decision, pp. 3, 20-21.</p>	<p><u>Hayes Dec.</u> ¶ 11(a): “[T]he suspension provides time for the Department to establish technical working groups that would provide recommendations . . . .”</p>
108	<p>“The duration of the suspension is the time needed to ascertain what is necessary to improve the safety of operations in the OCS and adequate containment and response capabilities. The time provided by the suspensions allows for the acquisition and development of additional information on the risks of deepwater drilling operations and the needed equipment and procedures to reduce those risks to an acceptable level” July 12 Decision, p. 20.</p>	<p><u>Hayes Dec.</u> ¶ 12: “The Department reviewed the changed circumstances and new information available in the aftermath of the BP Oil Spill, and determined that it must suspend new drilling activity for a limited period of time to allow the Department to obtain further information and recommendations from the Presidential Commission and other ongoing investigations as well as to allow similarly situated operators to implement important safety measures, conduct testing, and install new equipment to mitigate the now apparent risk associated with deepwater drilling.”</p>
109	<p>“[T]he Department is undertaking its own investigations that will yield vital information on safety measures during the next several months.” July 12 Decision, p. 20.</p>	<p><u>May 27 Safety Report</u>, p. 28: “The Department will immediately establish a workgroup to investigate safety training requirements for floating drilling rig personnel and possible requirements for independent or more frequent certification and testing of</p>

		<p>personnel and safety systems.”</p> <p><u>May 27 Safety Report</u>, p. 30: “As the Presidential Commission completes its review and as the Department and the U.S. Coast Guard finish the root cause investigation, the Department will know more and will respond accordingly.”</p>
110	<p>“[A]dditional information development by the several investigations assigned to examine the causes of the <i>Deepwater Horizon</i> disaster, as well as the results of your public outreach efforts discussed in this memorandum, will be informative.” July 12 Decision, p. 20.</p>	<p>See Basis 98 above (quoting <u>May 15 Landry Statement</u> concerning impact of weather)</p>
111	<p>“[T]he ability to conduct containment activities and oil spill response can be compromised by hurricane storms. During this time of year, as we have already seen this year, the ability to contain and respond to a spill is often compromised by weather conditions.” July 12 Decision, p. 20.</p>	

**(5) ECONOMIC "CONSIDERATIONS"**

#	Basis Asserted in July 12 Decision	Pre-May 28 Information or Conclusion
112	<p>"I am reminded daily that deepwater drilling accidents can and have in the case of the BP Oil Spill do have a profound, devastating impact on the economic and environmental health of an entire region." July 12 Decision, p. 3.</p> <p>"It is self-evident that the economic and environmental costs of the current spill, which even now has not been brought under control, outweighs the economic impacts of a temporary suspension of drilling activities, especially since production operations in the Gulf continue." July 12 Decision, p. 17.</p>	<p>Hayes Dec. ¶ 11(c): "[I]n rendering the [May 28] decision to temporarily suspend deepwater drilling . . . economic and technical data was considered. . . ."</p>
113		<p>Hayes Dec. ¶ 12: "The Department weighed the risks and benefits of a temporary suspension and concluded that the risk of a similar event was too great to ignore . . . ."</p>

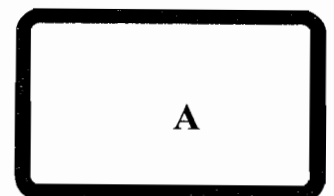
# **Gulf of Mexico Deepwater Operations and Activities Environmental Assessment**

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*Suggested Research and Information Synthesis*

Field studies to determine the distribution and dispersion of muds and/or cuttings discharged at the seafloor during pre-riser and riserless drilling operations would help refine current mitigation measures and help identify any additional mitigation measures.

*Blowouts*

Blowouts occur when improperly balanced well pressures result in the sudden, uncontrolled releases of fluids from a wellbore or wellhead. Blowouts can occur during any phase of offshore operations: exploratory drilling, development drilling, completion operations, production, or workover operations. However, these events are relatively rare. From 1971 to 1995, there were 24,237 well starts. Exploratory drilling operations had 49 blowouts (frequency of 0.00202) while development drilling resulted in 45 blowouts (frequency of 0.00186) (USDOJ, MMS, 1994 and 1997a). Only 100 bbl of oil/condensate were spilled in 1992 from two events associated with exploratory drilling activities. The condensate spill resulted from a blowout when the well unexpectedly encountered a shallow, overpressured gas reservoir. Typically, "blowout" refers to loss of control associated with the target reservoir. No spills have occurred associated with development drilling operations.

For the same 25-year span, blowouts from production, workovers, and completion operations were lower in number than from drilling operations: 18 blowouts occurred during production, 29 during workovers, and 10 during completions (USDOJ, MMS, 1994 and 1997a). Accounting for all sources of blowouts gives an average of 7 blowouts per 1,000 well starts.

Of the 24,237 well starts from 1971 to 1995, 901 (3.7%) were drilled in water depths greater than 1,000 ft. No major blowouts have occurred in the Gulf's deepwater areas. Many of the wells expected in deep water will have well control equipment located at the seafloor. Water depths may complicate well control operations. Of particular concern is the ability to stop a blowout once it has begun. The availability of rigs capable of drilling in similar water depths, riser components, and associated deepwater drilling equipment may be limited. The MMS is considering a rulemaking establishing the operator's responsibility for assuring the MMS of the accessibility and availability of an intervention drilling rig.

In the event a blowout occurs and the surface facilities are damaged enough to preclude well re-entry operations, a relief well may be needed to regain control of the situation. Drilling an intervention well could take anywhere from 30 to 90 days (Regg, 1998; Stauffer, personal communication, 1998; McCarroll, personal communication, 1998). The actual amount of time required to drill a relief well will depend upon a variety of factors including the complexity of the intervention, the location of a suitable drilling rig, the type of operations that must be completed in order to release the rig (e.g., may need to run and cement casing before the rig may be released), and any problems mobilizing personnel and equipment to the relief well site. It is estimated that the entire intervention effort for a blowout could range from 60 to 120 days (Regg, 1998; Stauffer, personal communication, 1998; McCarroll, personal communication, 1998). This estimate assumes that the depth of the intervention well will be approximately 10,000 ft (3,048 m) subsurface. The oil and gas industry has speculated that because the deepwater sediments are relatively unconsolidated, a deepwater blowout may stop flowing in several days to a few weeks as failure of a portion of the bore hole, called "bridging over," blocks the flow. The increased hydrostatic pressure at these water depths will contribute to failure of the wellbore and cessation of uncontrolled well flow.

Should a surface blowout occur at a deepwater facility (for example from a wellhead on the production deck of a TLP), spill response is expected to resemble that of a similar event in shallow

water. Complications could arise because of the increased distance from shore and potentially greater spill rates. Well control efforts for a surface blowout in deep water are expected to take approximately 60 days.

Further investigation is needed before the consequences of a blowout in deep water can be fully evaluated. Information is limited on the chemical behavior, phase changes, transport, and physics of the rising plume, given the temperature and pressure encountered in deep water. An MMS-funded modeling effort showed that hydrates might form from some of the gaseous components in a blowout fluid (S.L. Ross Environmental Research Ltd., 1997). Ross modeled the fate of the release of 30,000 bbl of oil per day and 60 mmcf of gas per day during a deepwater blowout for two extreme cases. In the first case, a bubble plume was assumed to form. Gas bubbles can create a pumping action that results in the development of a rising plume of gas, oil, and water to the surface at velocities that can override the effects of the prevailing water currents. In this scenario, for water depths ranging from 300 to 750 m (984 to 2,461 ft), not enough of the gas was converted to hydrate or dissolved to prevent the formation of a bubble plume. This blowout scenario assumed that the released gas pumped the oil, gas, and water to the surface. In the second case, all of the gas was assumed to convert to hydrate with no bubble or gas plume forming. This scenario assumed a blowout in water depths greater than 900 m (2,953 ft). Rapid conversion of all of the gas to hydrate is expected to occur in blowouts at this water depth; oil is expected to eventually rise to the water surface because of its buoyancy. A more detailed investigation is needed to validate the results of this preliminary study.

The International Association of Drilling Contractors (IADC) and the OOC recently published Deepwater Well Control Guidelines (IADC/OOC, 1998). The guidelines are designed to assist the drilling industry in planning and conducting operations in deepwater areas around the world. The guidelines are structured into five chapters: Well Planning, Well Control Procedures, Equipment, Emergency Response, and Training. Each chapter provides the recommended practices and procedures for a given situation or condition. The guidelines are derived from the knowledge and experience gained by the drilling industry in conducting operations in deepwater areas. Though the guidelines are intended for worldwide use, many of the examples are based on the Gulf of Mexico operations.

### *Well Intervention*

Intervention into a wellbore is generally for recompletion, workover, or well-control purposes. A recompletion is usually a scheduled event to change the production interval in a well from its existing depth. Workover operations are usually unscheduled events performed on an "as needed" basis. Well-control problems are usually emergency situations. An operator's actions are focused on regaining control of the situation, stopping the well from flowing, and returning the well to production.

As operators move into deeper water, some of the newly designed deepwater production systems may not be capable of accommodating a conventional platform drilling rig on their decks. Deepwater structures are being designed to minimize the size, load capacity, and complexity of the facility to control costs. As a result, interventions in subsea wells will likely require a floating drilling rig, specially designed workover rig or equipment (limited capabilities), or a specialized intervention vessel. If a floating drilling rig is used, operations would be similar to mobilizing for a drilling activity, except the length of time on location (10-30 days) is expected to be less than that for drilling a new well (70-90 days). If a floating drilling rig is involved in intervention work, it is not available for exploratory or development drilling. This may be a critical factor for operators in the current "tight" rig market until more floating drilling rigs become available. By 2003-2007, as



probability that it could reach the Florida Keys within 30 days. There is also a very small probability that the eastern portion of Florida would be contacted; the area near Miami has a 2-percent probability of being contacted from a spill occurring in the CPA in deep water. If a spill were to occur in the WPA in water deeper than 3,000 m (9,843 ft), there is a very small chance (1%) that it could reach the Mexican area just south of Matamoros. The model did not analyze the risk of contact south of this area.

### *Persistence of the Slick*

The OSRA model results do not include the likelihood that the slick may break up and disperse before 30 days. The resultant surface slick may dissipate naturally over time or be contained and cleaned up before reaching coastal waters. Most of the smaller spills are expected to dissipate prior to reaching shallow water. Only the largest of slicks are expected to remain on the surface of the water long enough (30 days or longer) for a very large volume of oil to possibly reach coastal resources. Of concern is the fact that very large volume spills projected for subsea blowouts might be continuous spills lasting up to 120 days. These spills will not weather as quickly as spills that are of short duration because there is a continuous source of unweathered oil. There may be substantial quantities of oil transported by winds and currents for even longer than the 30-day period analyzed by the OSRA model runs.

The form that the slick takes from a subsea spill in deep water may be very different from oil spilled at the surface and may affect the persistence of the surface slick. Oil released subsea (e.g., subsea blowout or pipeline leak) in these deepwater environments could remain submerged for some period of time and travel away from the spill site and then surface as a very thin slick covering a large diffuse area. It is expected that weathering of such a slick will occur very rapidly, resulting in the slick disappearing from the surface of the water after a short time, thus decreasing the likelihood that the slick will reach sensitive coastal features.

To complicate further any assessment of the persistence of a deepwater slick, information is limited about the characteristics of oil that will be produced in deep water. Initial geochemical information on oil characteristics in deep water shows that some of the oil may be fairly heavy, may be waxy, and/or may contain fairly high asphaltenes, high metals, and high sulfur relative to typical oils produced in shallower waters in the Gulf of Mexico. All of these characteristics will affect the way spilled oil will weather over time. Oils having an API gravity less than 10 are generally expected to sink. Oils having an API gravity ranging from 10 to 17.5 are expected to float initially but could sink after weathering and/or incorporating particulate matter. Lighter oils with low asphaltene content are known to dissipate rapidly. At present, both the oil and gas industry and MMS are gathering data on the chemical and physical characteristics of deepwater oils.

### *Response to Deepwater Spill Incidents*

The ability to respond to a spill that might occur in deepwater will vary, dependent upon a number of factors. Among these factors are the chemical and physical characteristics of the oil, the volume of oil spilled, the rate of spillage, the weather conditions at the time of a spill, the source of the spill (e.g., subsea blowout, pipeline release, surface release from an FPSO or a drill ship), and the amount of time necessary for response equipment or chemical countermeasures to reach the spill site. Since no single, spill-response method is 100 percent effective, larger spills in deep water under certain conditions may require the simultaneous use of multiple cleanup methods (e.g., mechanical cleanup, *in situ* burning, and dispersant application). Spill responses may be complicated by the potential for very large magnitude spills (because of the high production rates associated with deepwater wells), the length of time it could take to abate the source of the pollution (e.g., subsea

blowout or pipeline leak), and the possibly longer response times from shore-based facilities to deepwater locations. However, the distance from shore will generally allow more time for containment and cleanup efforts and natural dissipation of the oil to take place at sea.

The capability to respond to a spill depends, in part, on the physical and chemical properties of an oil. Since the physical and chemical characteristics of future deepwater oils are unknown, it is difficult to determine how slicks of these oils will respond to any of the existing oil-spill-response countermeasures. Although there is a possibility that oil spilled from either a drillship or an FPSO in deep water could sink or that oil released subsea (e.g., subsea blowout or pipeline leak) in deep water could remain submerged for some period of time and travel away from the spill site, there are few practical spill-response options for dealing with submerged oil. It should be expected that it may not be possible to predict the movement of the oil or to detect submerged oil in the deepwater environment. Containment and recovery operations are most effective when the oil is in shallow, clear, sheltered waters, so the oil slick is relatively stationary and restricted in extent (Brown et al., 1998).

The model results of a recently completed study (S.L. Ross Environmental Research Ltd., 1997), which was discussed previously, indicate that slicks from bubble plume blowouts in deep water will be too thin and too wide, even near the source, to consider containment and removal operations. In those cases where the gas plume from a blowout does not develop, the slicks formed are expected to be narrower at the source, but more patchy than the bubble plume slicks. These slicks (where a gas plume does not develop) will also be thin and, as a result, are also not expected to be amenable to containment and removal operations. Chemical dispersants appear to be the only likely viable spill-response countermeasure that would be effective under these conditions. Burning may not be a feasible response option for subsea spills, which are likely to incorporate large percentages of water through emulsification. It is possible that natural dispersion of these oil slicks would alleviate the necessity for any response action to be mounted for blowouts in some deepwater locations (S.L. Ross Environmental Research Ltd., 1997). The MMS is funding a study to provide an in-depth analysis of oil-spill behavior from subsea blowouts and subsea pipeline releases in deep water. The ability to determine appropriate spill-response countermeasures to these deepwater events will be enhanced by the results of this study.

Spill response to an oil release that could occur from deepwater drill rigs/ships and FPSOs in the Gulf of Mexico is also a concern because of the potentially very large volumes of oil stored on these facilities. Since information is limited about the chemical and physical properties of future deepwater crudes, it is difficult to determine which of the available spill-response strategies would be the best option for these areas. Response to spills in these areas will of necessity vary, dependent upon the weather and sea conditions present during a spill event. Again, it would be expected that, for the larger spills in deep water, the simultaneous use of multiple cleanup methods (e.g., mechanical cleanup, *in situ* burning, and dispersant application) would be initiated.

Since the application of dispersants may be the only feasible oil-spill-response option to some deepwater spills, the availability and suitability of dispersant application in the deepwater environment is a concern. Spill-response plans submitted for owners/operators of the deepwater leases generally cite contracts with the following oil-spill removal organizations (OSROs): (1) Clean Gulf Associates (CGA); (2) Marine Spill Response Corporation (MSRC); and/or (3) National Response Corporation (NRC). At present, both CGA and MSRC have contracts with Airborne Support Inc. (ASI) located in Bourg, Louisiana, which has a stockpile of 45,300 gal of the dispersant Corexit 9527 available for application by two DC-3 and one DC-4 aircraft. The NRC has a verbal agreement with ASI for assistance (Barker, personal communication, 1999). At a 20:1 application ratio, the DC-3 holds enough dispersant to spray a slick of approximately 476 bbl of oil and the DC-4 can spray a 952-bbl slick. At this same 20:1 ratio, the stockpile of dispersant available through

Gaseous sediments, hydrocarbon seeps, and vents may indicate areas of potential geologic hazards. Gaseous sediments may result from decomposition of organic matter or may be gas from a deeper reservoir that has migrated into surficial sediments along faults. Gaseous sediments may have lower shear strength and less load-bearing capacity than nongaseous sediments, so the stability of bottom-founded structures may be of concern. Seeps and vents may indicate near-surface faulting. Hard substrates, called hardpans, are often associated with hydrocarbon seeps. They are solid carbonate strata formed at the mudline by anaerobic organisms. Hardpans have greater density than the unconsolidated sediments, which can affect the drilling program and the anchoring or mooring of drill rigs or production platforms/structures. Chemosynthetic communities are associated with seeps. Chemosynthetic communities are protected resources, and OCS operations are required to avoid impacting them.

The topography of the seafloor in the deepwater areas of the Gulf has both local and regional dip that makes the occurrence of landslides a threat. Unconsolidated surficial sediments are water saturated and susceptible to mass movement, which can be triggered by earthquakes, storm surges, faulting, sediment loading, dissociation of hydrates, or dewatering processes. This mass movement of sediment can be a local event or cover a large area. The slope of the seafloor controls the direction and speed of the slides. There is an increased risk of sediment failure near steep slopes and scarps, especially along the Sigsbee Escarpment. Although the actual loss of operational equipment (drill string, conductor casing, drilling rig, production platform/structure, riser, subsea production tree, or pipeline) to a landslide is a rare occurrence, the hazard is real. The risk associated with mass movement can be reduced through careful design, siting, and structural engineering.

The topography of the continental slope is very uneven. Mud volcanoes, mud mounds and ridges, salt diapir formations, channels and canyons, escarpments, and consolidated lumps of biogenic calcium carbonate are found throughout the area. Uneven seafloor topography presents challenges to mooring, structure siting, and pipeline routing and emplacement.

Shallowly buried channels or new channel fill may also pose a hazard to deepwater operations. Possible contrasts in load-bearing capacity of the seafloor may exist over short vertical and horizontal distances.

A phenomenon called gas hydrates is also found in the deepwater areas of the Gulf of Mexico. Gas hydrates are natural, solid methane-water ice matrices that form under conditions of high pressure and low temperatures in water depths greater than 300 m. Chemosynthetic community "ice worms" have been found associated with hydrates exposed at the seafloor. Hazards arise from the fact that hydrates are only quasi-stable. The dissociation of hydrates can be gradual or instantaneous. Drilling into the gas hydrates can result in problems in well control and the release of methane into the wellbore and/or water column. Hydrates can also cause sediment instability. Physical disturbances can cause the hydrates to dissociate, which may result in seafloor collapse or subsidence.

In deep water, as in other areas of the Gulf, there is a risk of encountering sour gas or liquids that contain sulfur, hydrogen sulfide ( $H_2S$ ), and/or carbon dioxide ( $CO_2$ ). These substances create problems in drilling, production, and processing the hydrocarbons due to their toxicity and corrosive nature. Specialized equipment must be used in the detection, treatment, and/or separation of the hydrogen sulfide, carbon dioxide, and sulfur from the production stream. Based on the amount of  $H_2S$ ,  $CO_2$ , and sulfur, and the field's volume, another cost variable must be considered in determining the economic feasibility of extracting the hydrocarbons.



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May 24, 2010



## Failures of the Deepwater Horizon Semi-Submersible Drilling Unit

The following are preliminary insights into the failures of the Deepwater Horizon Drilling Unit on and after April 20, 2010. The insights are based upon more than 450 hours of analyses of currently available data provided by approximately 60 informants.

### Statement of Robert Bea, Professor, UC Berkeley Department of Civil and Environmental Engineering

Based upon the evidence I have been able to gather, develop and analyze, this disaster was preventable had existing progressive guidelines and practices been followed. Some of these guidelines are implemented internationally where the same industry players, including BP PLC, operate. Moreover, other existing U.S. guidelines that were simply waived by the responsible regulatory authority could have prevented this incident.

The information available to me so far indicates that BP PLC and the Department of Interior's Minerals Management Service (MMS) failed to properly assess and manage the natural hazards and human fallibilities in a prudent manner. Consequently, the public, resources and environment were and are being severely punished.

#### Lessee – BP PLC

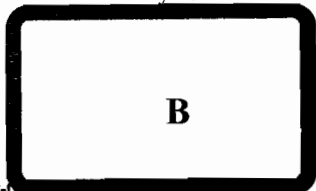
As the lessee, BP PLC bears the primary responsibilities for operational Quality (serviceability, safety, compatibility, durability), Reliability (likelihood of realizing desirable Quality) and Stewardship of the exploration of these public resources vis-à-vis the public trust, as well as for the protection of the environment in relation to its operations. Under the terms of these public trust obligations assumed from DOI MMS, BP PLC assure it would live up to the conditions contained its environmental permits and abide by the clear expressions of Congress' laws; conditions it clearly failed to properly address.

#### Regulatory – DOI MMS

As the Congressionally appointed trustee of the federal – public resources subject of this incident, the DOI MMS bears the primary responsibility for stewardship and regulatory oversight of the operations of BP PLC. This responsibility primarily includes assuring that adequate Quality and Reliability (e.g. acceptable probabilities and consequences of failures – Pfs and Cfs) for the subject development are implemented. Furthermore, the same adequate and acceptable Quality and Reliability attributes need to be implemented, maintained and inspected for the life-cycle of the developments used in the subject operations (concept, design, construction, operation, maintenance, decommissioning).

### How Did This Happen?

The environment in which the oil drilling took place – 5,000 feet below the ocean's surface – is extremely hazardous. The hazards are comparable to that of exploration on the Moon and Mars. USCG Admiral Thad Allen described this underwater environment as the "Tyranny of Depth and Distance." I would add "Darkness." These are the natural hazards presented by the pressures, forces and movements of the water and the seafloor, and by the extremely low and high temperatures of the deep ocean environment.





Previous studies of more than 600 catastrophic failures – costing more than US \$1 billion – have led to a simple equation to describe these catastrophes:  $A + B = C$ . “A” represents natural hazards. “B” represents human fallibilities, such as acquiescence, indifference, ignorance, hubris, arrogance, greed and sloth. “C” is catastrophe, which will happen sooner or later.

These studies show that approximately 80% of the failures are rooted in Extrinsic Uncertainties (human and organizational performance, knowledge acquisition and utilization). The remaining 20% of the failures are rooted in Intrinsic Uncertainties (natural variability and analytical model limitations). Approximately 80% of these failures develop during the system operating and maintenance phases. The studies show that more than 60% develop during the design phase, including concept development. Based on the information currently available to me, the failures of the Deepwater Horizon drilling unit is an excellent example of these findings.

The evidence I have collected to date shows that BP PLC and the DOI MMS failed to:

- properly or effectively evaluate and manage the Risks (Pfs and Cfs) associated with development of the previous and vital public resources. Pfs and Cfs were not acceptable to the U.S. publics, governments, and the environment; this appears to be a violation of the public trust held by the DOI MMS and the corresponding assurances of the industry,
- satisfy the legal Standards of Care (SOC) established by law and by the Best and Safest Available Technology (BAST) in design, construction, operation, and maintenance of a state-of-the-art deepwater drilling and development system; due diligence was not demonstrated,
- meet the requirements of, inter alia, the Clean Water Act, Oil Pollution Act, the National Environmental Protection Act (NEPA), and the Outer Continental Shelf Lands Act (OCSLA), and
- act in the best interest of the public, which might be categorized as an issue subject to the “Public Trust Doctrine.”

This catastrophic failure appears to have resulted from multiple violations of the laws of public resource development, and its proper regulatory oversight.

#### **Seven Steps Leading to Containment Failure, Pf (Blowout Prevention)**

Based on the information available to me thus far, I believe the Deepwater Horizon failure developed due to:

- improper well design (configuration of well tubulars),
- improper cement design and placement (segmented discontinuous cement sheath, minimal volume placed adjacent to lost circulation zone),
- flawed Quality Assurance and Quality Control (QA / QC) – no cement bond logs, ineffective oversight of operations,
- bad decision making – removing the pressure barrier – displacing the drilling mud with sea water 8,000 feet below the drill deck,
- loss of situational awareness – early warning signs not properly detected, analyzed or corrected (repeated major gas kicks, lost drilling tools, including evidence of damaged parts of the Blow Out Preventer [BOP] during drilling and/or cementing, lost circulation, changes in mud volume and drill string weight),
- improper operating procedures – premature off-loading of the drilling mud (weight material not available at critical time),
- flawed design and maintenance of the final line of defense – including the shear rams of the Blow Out Preventer (BOP) and the associated electrical and hydraulic equipment.

From the information I have analyzed, the failures by BP PLC and DOI MMS can be characterized as follows:

- drilling and well completion operations did not meet industry standards,
- operations were “Faster” and “Cheaper,” but not “Better” – the operation records clearly show excessive economic and schedule pressures resulting in compromises in the Quality and Reliability of this high-end deepwater oil and gas development system, and thus ignoring the Pfs’ and
- the involved parties did not anticipate a blowout and, accordingly, did not develop effective, collaborative and constructive interactions, equipment and procedures to ensure that the methods needed to control and mitigate Cfs in case of a blowout would be available.

### **Three Steps to the Failure to Respond (Containment, Clean-up, Secure, Cf)**

My analysis of the facts developed to date show that BP PLC and the DOI MMS did not develop or implement effective measures for:

- well control after loss of containment – blowout ,
- capturing the loss of control materials (gases, oil, high salinity water at the sea surface and within the water column),
- clean-up of the loss of control materials in the open ocean, and adjacent marshes and beaches (booms, skimmers, burning, dispersants).

Because BP PLC and the DOI MMS believed that the potential consequences were “insignificant,” they were not prepared for the failures (Cfs) associated with the Deepwater Horizon operations, both in prevention and containment. The consequences of these deeply flawed assessments and decisions were catastrophic to life, property, resources, the industry, and the environment. As this incident continues to unfold, it is clear that BP PLC and the DOI MMS had no effective plans, measures or preparations for mitigating the Cfs.

The developing record shows that BP PLC and the DOI MMS had ineffective QA/QC of BP PLC plans, operations and maintenance. Diligent and effective efforts are required to correctly detect, analyze and rectify important flaws during the life-cycle of “cutting edge” systems and operations.

### **How Can This Be Prevented?**

The likelihood of such failures as the Deepwater Horizon blowout and the subsequent containment and clean-up operations can be reduced to desirable and acceptable levels by developing and implementing a leading, collaborative, and diligent Life-Cycle Risk Based Management (LC RBM) government and industrial regime to explore and develop a precious and vital public resource – offshore oil and gas reserves (life-cycle Safety Case regime).

The industrial LC RBM should be based on Pfs and Cfs assessed using qualitative and quantitative methods that develop and maintain Pfs and Cfs that are acceptable to the public and government, and that comply with the legal SOC, NEPA, OCSLA and the Public Trust Doctrine. Proactive, Reactive, and Interactive methods must be used to assure development of acceptable and desirable Pfs and Cfs during the life-cycle of the activities. Definition of the acceptable and desirable Pfs and Cfs is a social process that involves informed and respectful deliberations involving the affected publics, the governments, the industry, and environmental advocates. Of particular importance are laws promulgated by the administrative branches, enacted by the legislative branches, and interpreted – applied by the legal branches of government to help assure that acceptable and desirable Pfs and Cfs are incorporated and maintained in the systems used to explore for and develop public resources in very hazardous environments. These methods are founded on continuous effective efforts to reduce the likelihood and severity of malfunctions, and increase the likelihood of effective detection, analysis, and correction of malfunctions.

The OCS Lessees and the DOI MMS should develop and sustain:

- a technically superior, challenging, collaborative, and diligent program of life-cycle QA/QC based on effective and timely detection, analysis and correction of defects and flaws,
- High Reliability Organizations that effectively practice High Reliability Management (planning, organizing, leading, controlling) in all segments of the operations. This will require organizational Commitment (to develop acceptable P<sub>f</sub> and C<sub>f</sub> throughout the life-cycle), Capabilities (technical and managerial superiority), Cognizance (awareness of hazards and uncertainties that threaten acceptable P<sub>f</sub> and C<sub>f</sub> through the life-cycle), Culture (balancing production and protection), and Counting (development of acceptable costs, benefits, and profitability),
- programs of international industry – government – academia collaborative Research and Development projects and Public Outreach to help educate the public,
- long-term collaborations with international regulatory agencies to enable realization of continuous improvements and implementation of best practices in regulations of deepwater oil and gas exploration and production, and
- effective deepwater oil and gas development Technology Delivery System (TDS) that effectively engages the public interests, the responsibilities of the governments (of, by, and for the people), the technology of industry and commerce, and the stewardship of the environment.

These recommendations do not address the hardware, equipment, procedure, and structural elements associated with ultra deepwater exploration and production developments – the ‘engineering technical’ elements associated with these systems. These recommendations are based on analyses of the performance of previous systems summarized earlier. The primary challenge that must be properly addressed as a first priority are the human and organizational aspects. Experience clearly shows that if we are able to develop the ‘right stuff’ – High Reliability Organizations and Management, then systems (comprised of hardware, structures, operating personnel, operating and oversight organizations, procedures, cultures, and interfaces among the foregoing) that have acceptable reliability and quality characteristics will be realized. We must have the right stuff to realize the right things.

*Professor Robert Bea, PhD, PE*

*Deepwater Horizon Study Group  
Center for Catastrophic Risk Management  
University of California, Berkeley*





5. The blind shear rams are generally set high in the stack to provide more pipe hang-off options below. With the blind shear rams closed over hung-off pipe, the well can be monitored or circulated in pipe or annulus.
6. The choke and kill lines are dual purpose, i.e., either can be used to kill (pump in) or choke (direct to choke manifold).
7. Figure K1-20C illustrates an “alternate” outlet below the upper annular to facilitate purging trapped gas after a kill operation. This is particularly important in deep water operations.
8. Two fail-safe valves for each choke and kill BOP outlet that are fail-safe in the closed position.
9. Two hydraulic or electro hydraulic control PODs each with 100% redundancy.

10. All rams equipped with remote operated ram locks.

### I. TESTING SUBSEA BOP STACK

Test pressures and test frequency are similar to surface stacks with the following notable exception.

All subsea BOP stack rams and valves are generally tested at surface (on a test stump) to their rated working pressure. The annular is generally tested to 70% of rated working pressure. The subsea stack, once deployed and connected to the conductor casing wellhead is not disconnected until the well is complete. Therefore, a higher stump test pressure is required than is normal for surface stacks.

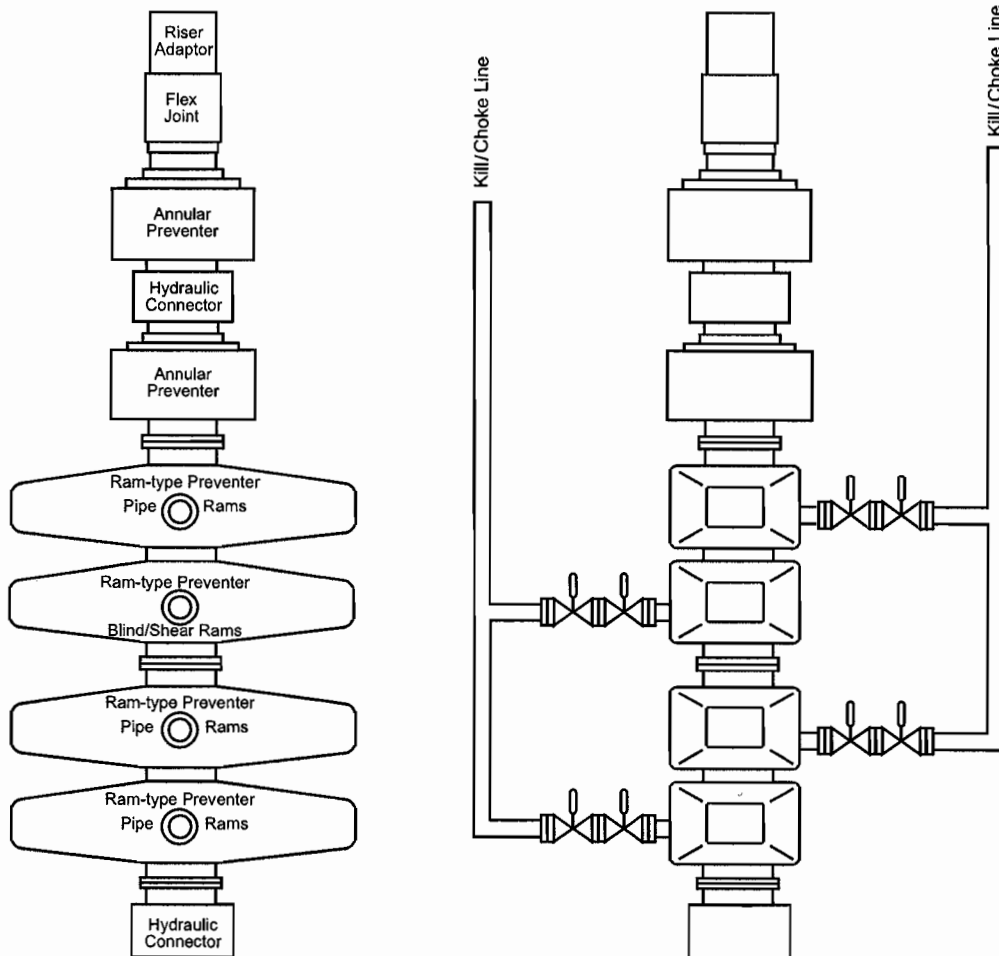
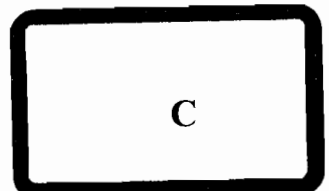


FIGURE K1-21C: Typical Subsea BOP Arrangement





### 1. Testing procedure for subsea BOPs

#### a. Tests before lowering the BOP stack.

All subsea BOP stack components should be installed, checked, and pressure tested to their rated working pressure and to a low pressure of 250 psi while the stack is mounted on the test stump. After the surface tests, all clamp connections and all studded connections should be checked for tightness. The complete BOP operating unit should be tested in accordance with manufacturer's recommendations and pressure tested to its rated working pressure. The test should include at least the following:

- to test every BOP control
- to check that each function is properly connected
- to activate the functions which are indicated from both control pods
- to check and record test volumes and response times for each function

The choke manifold, valves, kill-and choke lines and fail-safe valves should be pressure tested with water to the rated working pressure of the ram type preventers, or the rated working pressure of the manifold, whichever is the lower.

The kelly or top drive and kelly stop-cocks should be pressure tested to their rated working pressure with a test sub.

### 2. Tests during lowering and after connecting the BOP stack, kill and choke lines, marine riser, and operating hoses.

When running the BOP stack on riser joints, the kill and choke lines should be pressure tested at least when the stack is below the splash zone and both before and after landing. More frequent testing may be stipulated, i.e., each 5 or 10 riser joints.

After the BOP stack is connected to the wellhead, a full function test on both pods, plus a low pressure test of 250 psi should be carried out.

The pressure test upon initial and any subsequent mating of the BOP and wellhead should be performed with sea water to the maximum anticipated pressure at TD of the well to confirm connector/wellhead integrity. This pressure is only required against one pipe ram if the stack has been completely stump tested prior to running. For routine tests, the BOP will be tested with the fluid in the hole at the time of the test.

<i>Inside BOP name</i>	<i>Normal location</i>	<i>Common type</i>	<i>Figure Illustration</i>
<b>1. Rigs with Kelly Drive</b>			
a. Upper kelly valve or upper kelly cock	Between swivel and kelly	Flapper or full open ball	Figure K1-22C
b. Lower kelly valve or upper kelly cock	Between kelly and kelly saver sub	Full open ball	Figure K1-23C
c. Safety valve	In front of drawworks	Full open ball	Figure K1-23C
<b>2. Rigs with Top Drive</b>			
a. Upper remote safety valve	Between main shaft and lower valve	Full open ball	Figures K1-24C & -25C
b. Lower safety valve	Below upper safety valve	Full open ball	Figures K1-24C & -25C
<b>3. Kelly Drive or Top Drive Rigs</b>			
a. Inside BOP	In front of drawworks	Poppet check	Figure K1-26C
b. Drop-in check valve	Top of BHA	Ball check	Figure K1-27C
c. Bit float	Installed in bit sub	Flapper or poppet check	Figure K1-28C

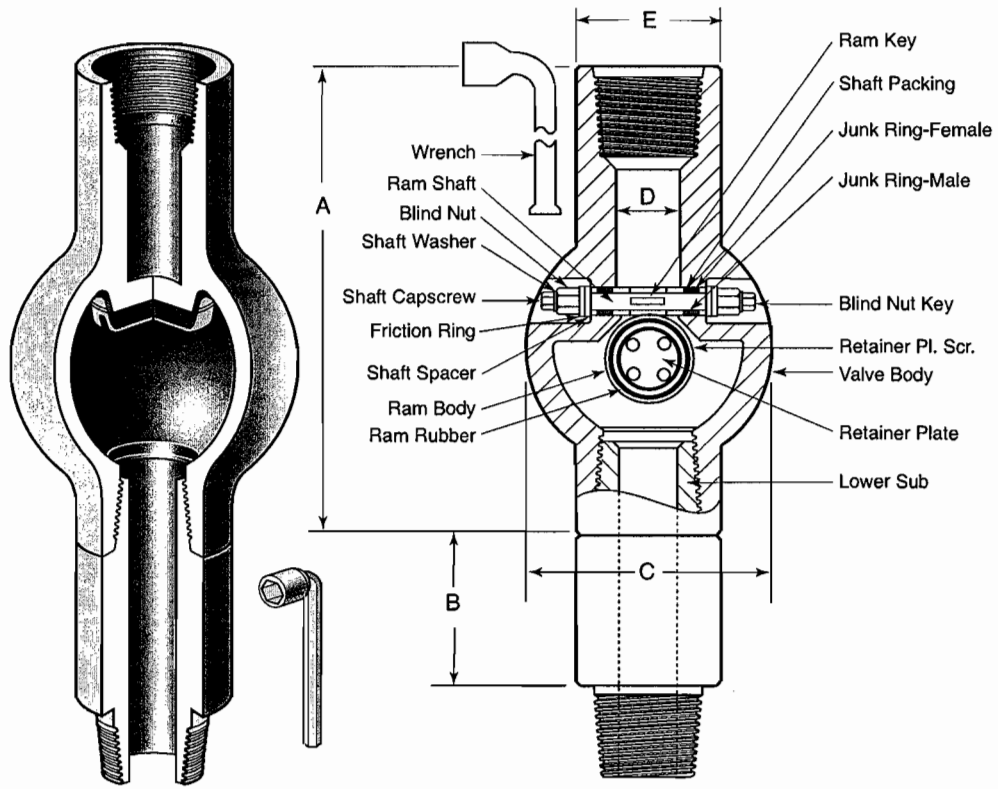


FIGURE K1-22C: Upper Kelly Valve

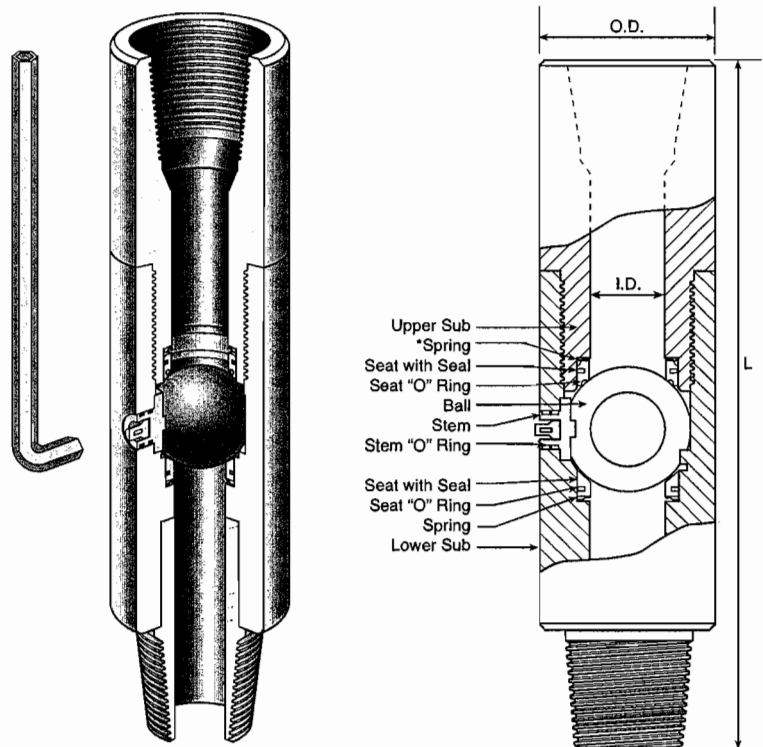


FIGURE K1-23C: Lower Kelly Valve

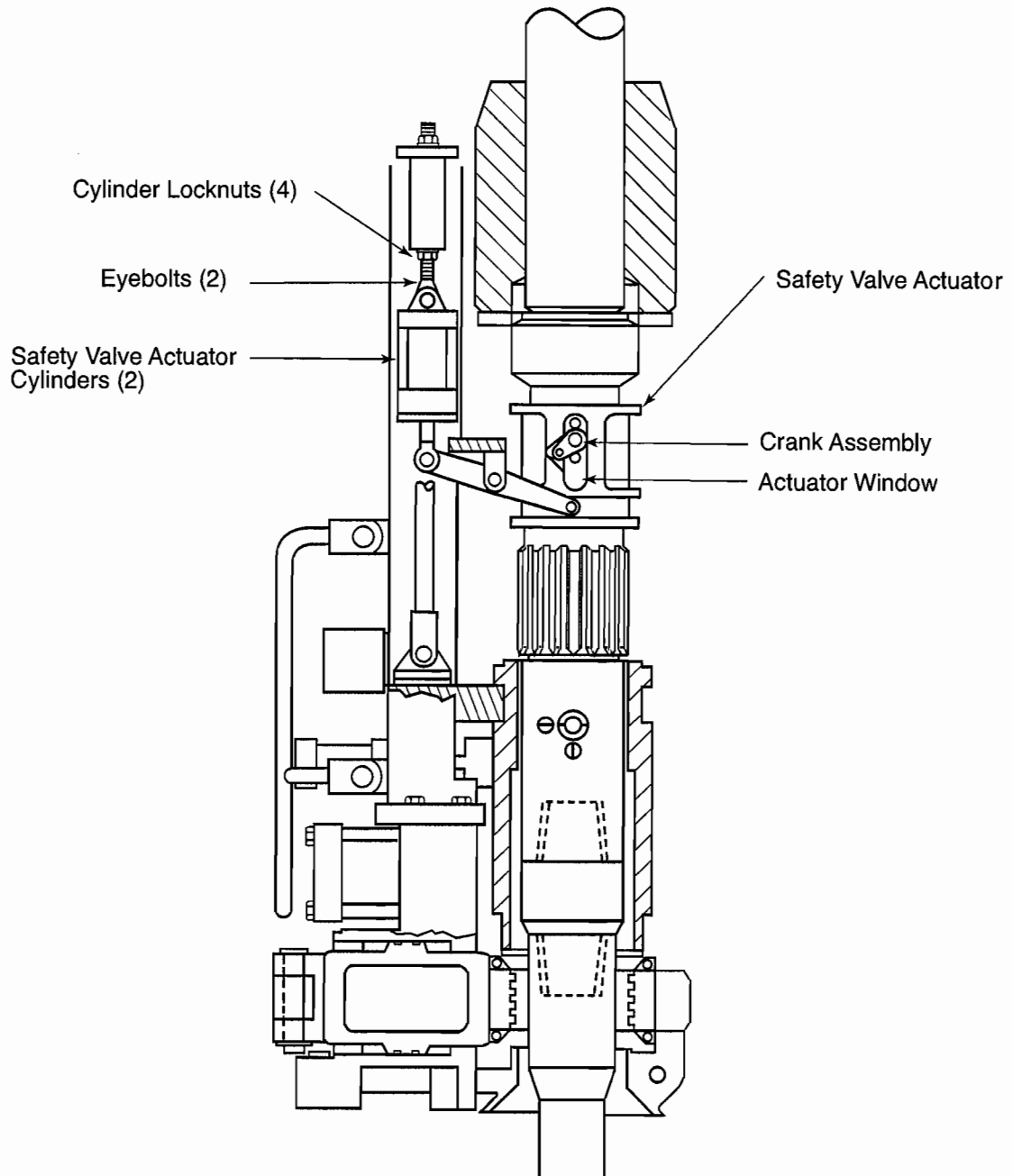


FIGURE K1-24C: Safety Valves Installed in Top Drive System

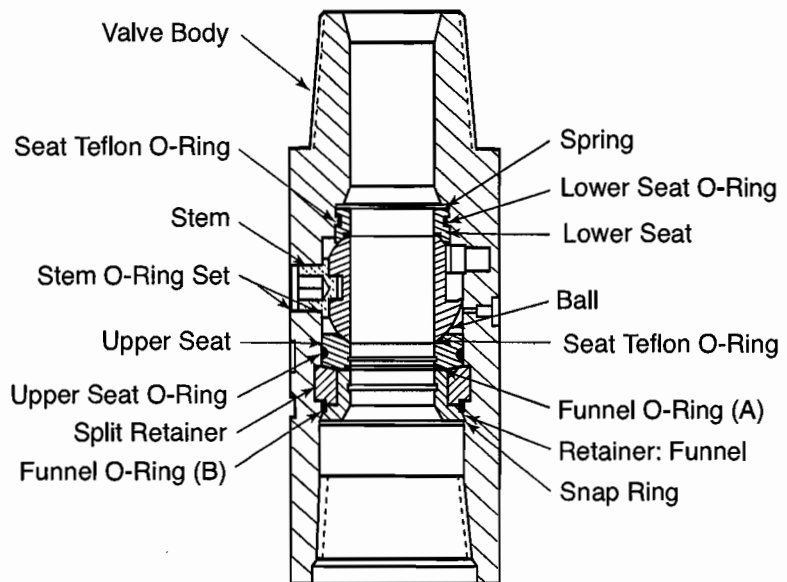
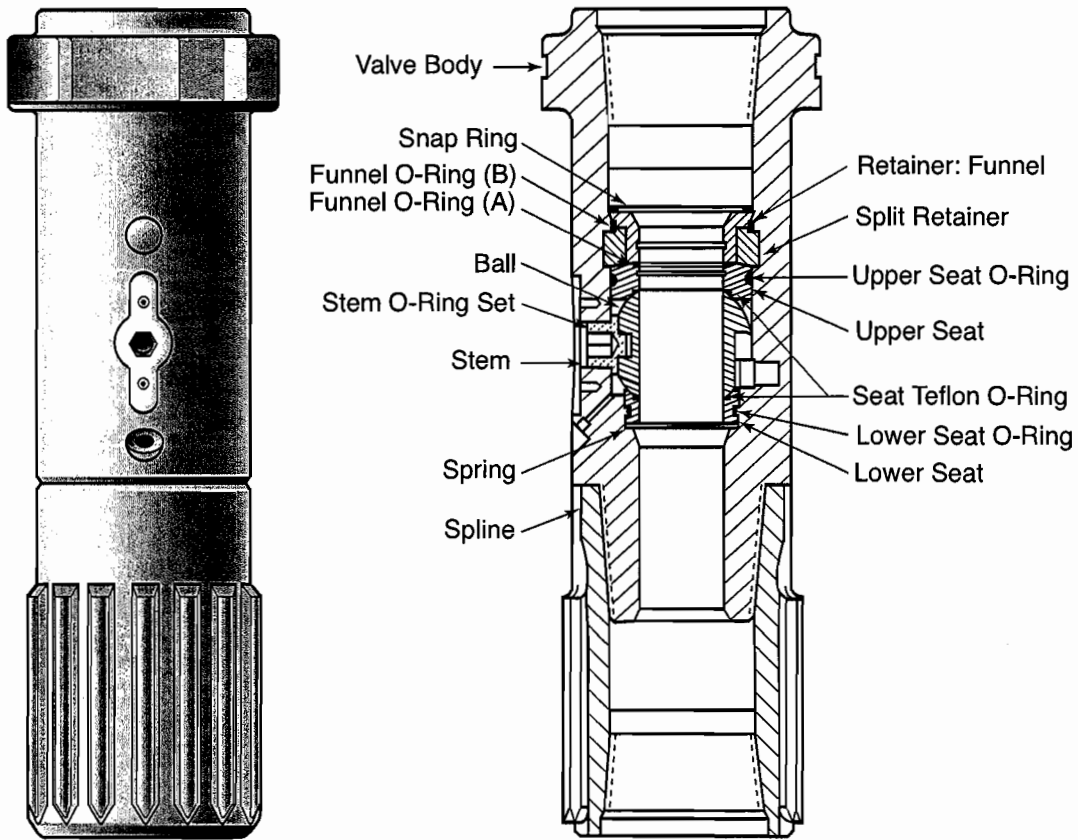


FIGURE K1-25C: Splined and Plain-Top Drive Safety Valves

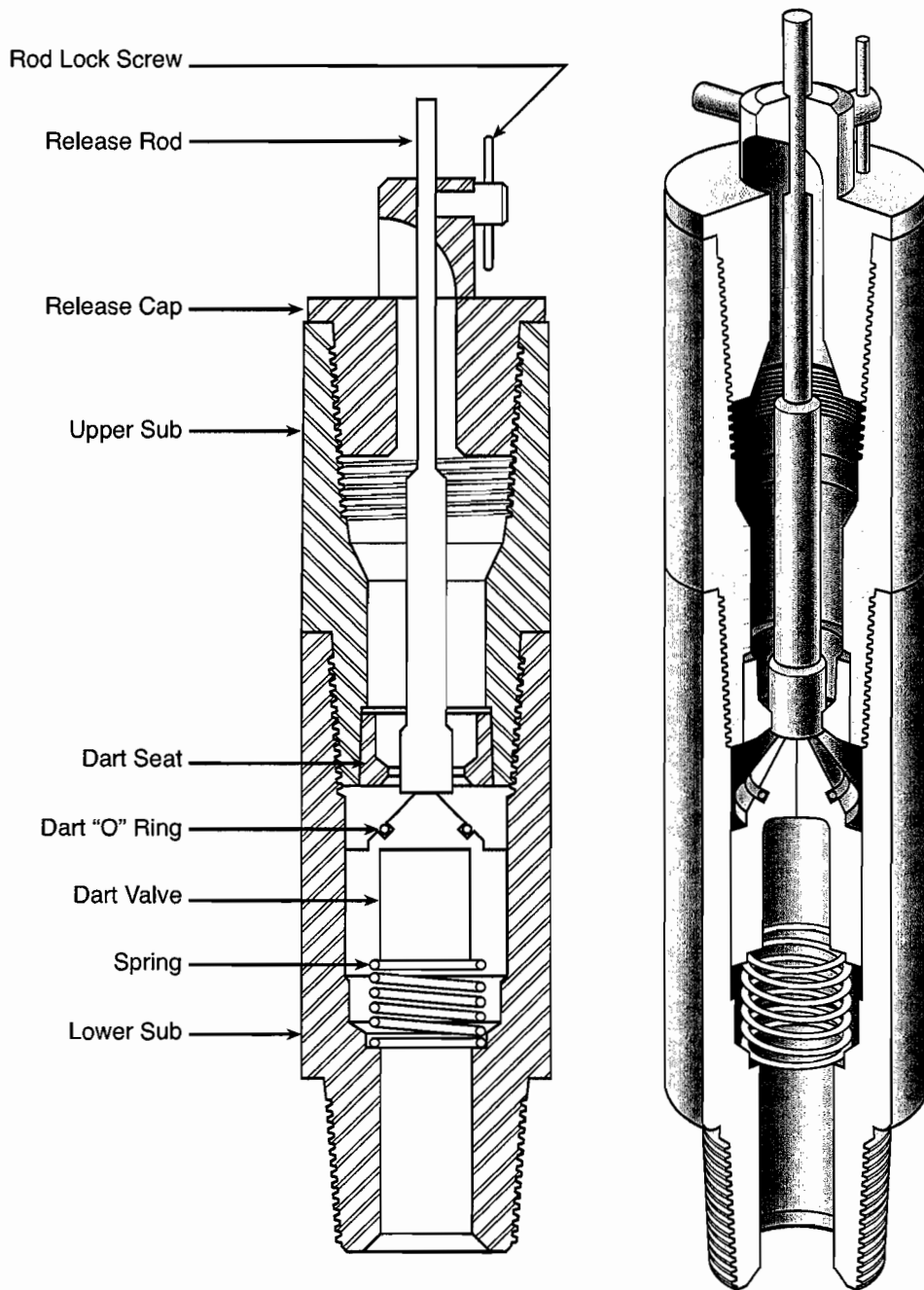


FIGURE K1-26C: Inside BOP

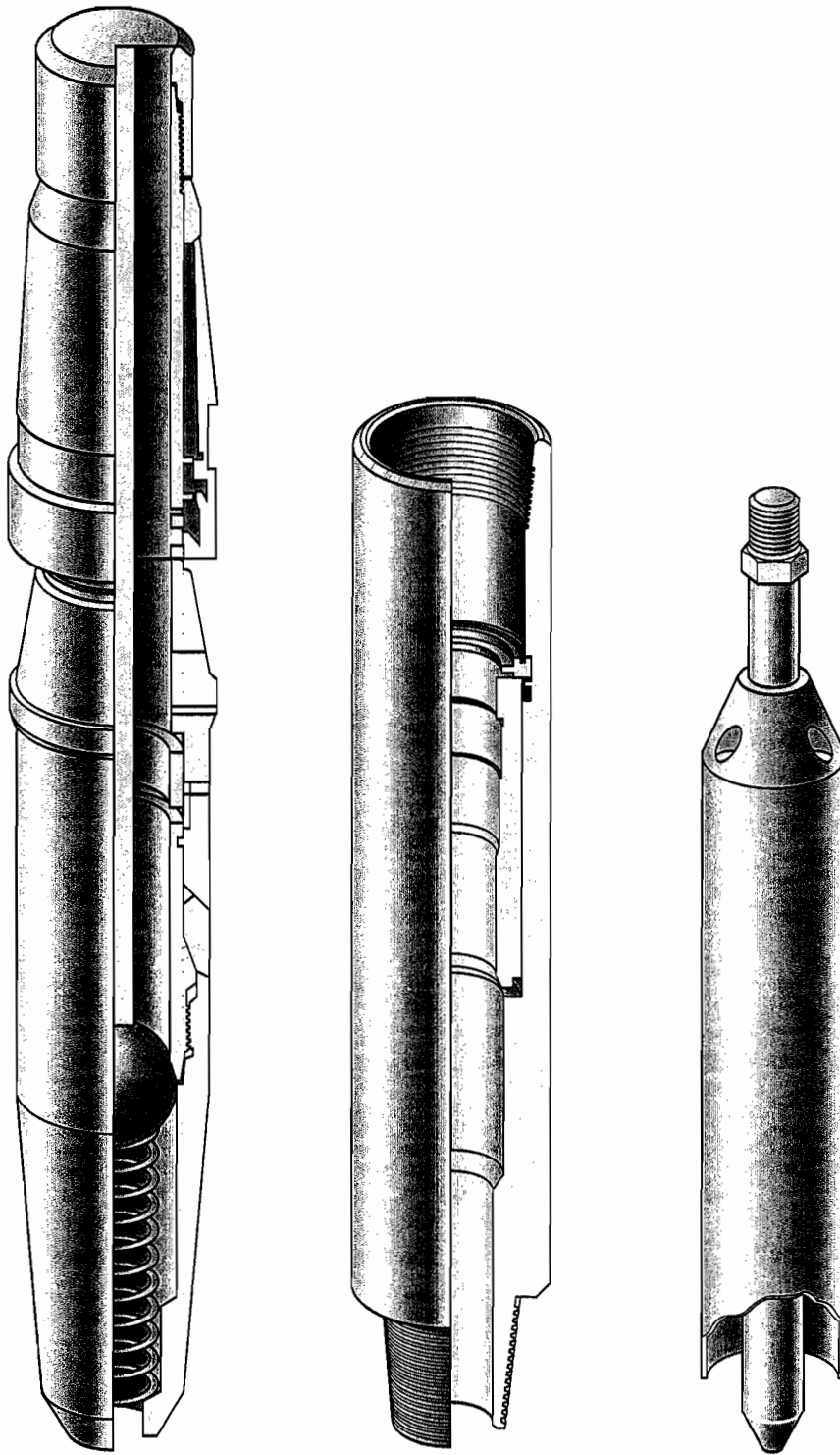


FIGURE K1-27C: Wireline Retrieval and Drop-In Check Valve

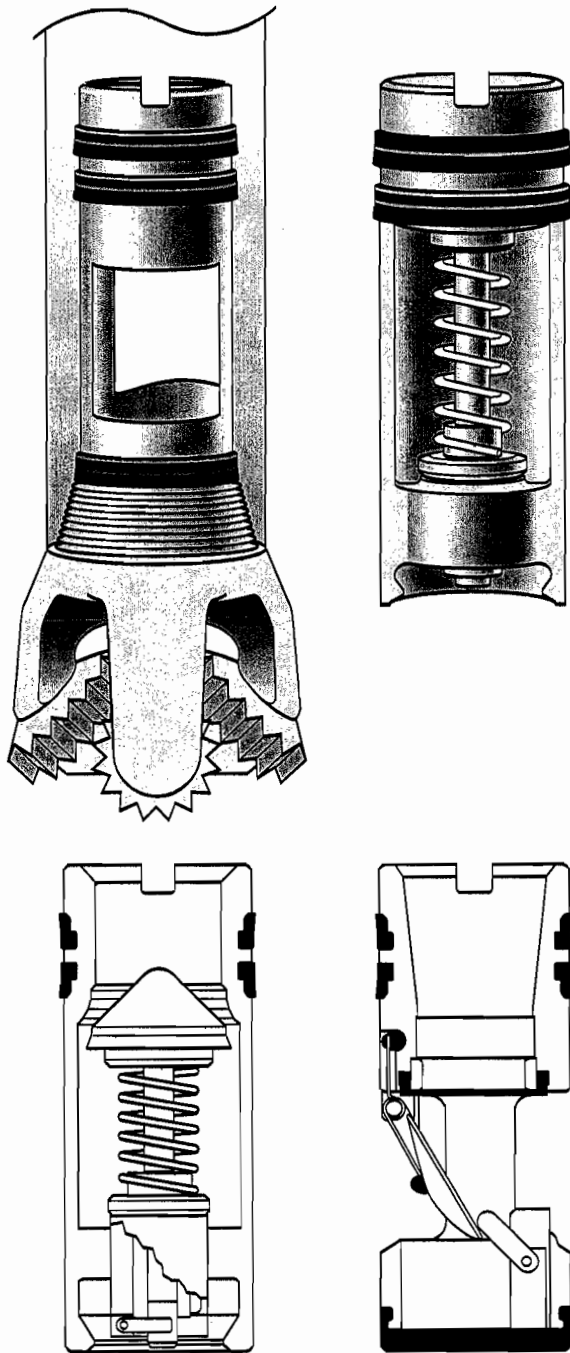


FIGURE K1-28C: Bit Float, Poppet-Type, and Flapper-Type

In deep water, a serious well control problem could develop due to loss of hydrostatic head, with the choke and kill line full of water. Therefore, after initial and subsequent mating of the BOP on the wellhead, the choke and kill lines will be kept full of in-hole drilling fluid. All lines should be flushed daily to ensure they are not blocked.

In shallow water (less than 1500 ft), operators may prefer to keep the choke/kill lines filled with sea water to prevent solids from settling out. Blind shear rams are normally tested against casing prior to drilling out; to 250 psi and then again at a higher pressure as indicated on the actual drilling prognosis. The blind shear rams are generally not retested during the normal test intervals as is done with the other BOP components unless the seal integrity is in question, but will be retested prior to drilling out of subsequent casing strings.

### 3. Routine Tests

The opening/closing times and the volumes of hydraulic operating fluid required for the operation of the various underwater stack components (i.e., rams, kill-and-choke line valves, annular preventers, hydraulic connectors, etc.) shall be recorded during testing of the stack underwater. These results shall be compared with the normal opening/closing times and volumes required of the hydraulic system. Any major differences are an indication that the system is not operating "normally" and shall require further investigation and possible repair. Pressures of the wellhead or preventers should be to the anticipated wellhead pressure with a maximum limit for the annular preventer of 70% of its working pressure. It should also be pressure tested to a low pressure of 250 psi.

## IV. INSIDE BLOWOUT PREVENTERS

There are several pieces of equipment in addition to the primary blowout prevention equipment that are sometimes necessary to control a kick. The equipment which furnishes closure inside the drill string is called an "inside" blowout preventer.

A number of devices serve this purpose. The "names" of these devices are often confusing. The following table classifies inside BOPs to eliminate this confusion.

### 1a. Upper Kelly Valve

The upper kelly valve, or kelly cock (Figure K1-22C), is installed between the kelly and the swivel and normally has left hand threads. Because it is installed above the kelly, it is always available. The basic purpose of this valve is to isolate the fluid in the drill string from the



**From:** Cruikshank, Walter  
**To:** Beaudreau, Tommy;  
**Subject:** RE: Relief Well BOP Testing Summary  
**Date:** Thursday, July 01, 2010 6:33:23 PM

---

In case I wasn't clear, some but not all testing issues are covered by the NTL. Others could be covered in interim rule.

---

**From:** Cruickshank, Walter  
**Sent:** Thursday, July 01, 2010 5:55 PM  
**To:** Beaudreau, Tommy  
**Subject:** FW: Relief Well BOP Testing Summary

Tommy -- Here's the summary of the BOP testing on the relief wells. As noted in Mike Saucier's e-mail immediately below, testing issues are addressed by the Safety NTL.

Walter

---

**From:** Saucier, Michael  
**Sent:** Thursday, July 01, 2010 5:39 PM  
**To:** Cruickshank, Walter  
**Cc:** Herbst, Lars; Hauser, William  
**Subject:** FW: Relief Well BOP Testing Summary

Walter,

See results of BOP testing from Dave Trocquet and Peter Botros. Also, the hot stab testing is address in NTL 2010-N05 in the following "ROV Hot Stab Function Testing of the ROV Intervention Panel" and secondary control is addressed in the section "Secondary Control System Requirements and Guidelines for Subsea BOP Stacks."

Michael J. Saucier  
Regional Supervisor  
Field Operations  
Gulf of Mexico Region  
Bureau of Ocean Energy Management, Regulation and Enforcement

---

**From:** Trocquet, David  
**Sent:** Thursday, July 01, 2010 4:05 PM  
**To:** Saucier, Michael  
**Cc:** Trosclair, Troy; Botros, Peter  
**Subject:** Relief Well BOP Testing Summary

Mike,

Please see the summaries below for BOP Stump and On-bottom testing for the two relief wells (MC 252 002 – DD II and MC 252 003 – DD III)

**D**

### Stump Test summary

#### 1. ROV Hot Stab Testing

Several LMRP and BOP stack hot stab functions were conducted with the actual ROV pump. The LMRP disconnect function was unsuccessful because of a leaking shuttle valve. After several attempts to repair the valve, the disconnect function was successfully conducted. It should be noted that NTL No. 2010-N05 requires this function.

NTL No. 2010-N05 also requires the testing of a pipe ram and a blind shear ram. The DD II does not have a pipe ram function on its BOP stack hot stab panel so it obviously could not be tested. It does have two blind shear rams and two blind shear ram hot stabs on its BOP stack panel. Both blind shear rams were successfully functioned closed.

Other functions that were successfully functioned were the Casing shear ram close and Wellhead Connector unlatch. Another unsuccessful function that was not required is the All Stabs Retract function. After several attempts to repair a shuttle valve which had failed, the function was successfully tested.

#### 2. EDS Testing

EDS testing for the Casing and Drill pipe sequence was conducted and everything worked according to specs. It was done Electronically (Dry) and Hydraulically (Wet).

#### 3. Deadman Testing

Performed a Deadman testing. There was a huge problem with the BOP design and testing for the Deadman. Before they would not use the BOP accumulators, and install a Mobile Accumulator and test the deadman that would bypass components within its Deadman circuit. We required them to test the Deadman with the BOP accumulators and that is where a major problem was found. The Deadman circuit would not function. For several days troubleshooting began and after several processes it was found to be a design issue. A shuttle valve was improperly installed into the Deadman circuit where when initiated it would not allow a Deadman scenario to be initiated; where there would be a complete loss of hydraulics and electricity. With this shuttle valve installed it would always allow hydraulic pressure to be received and would never allow the Deadman to release hydraulics from the solenoid to activate the deadman sequence. The shuttle valve was taken off the Deadman circuit and it worked as advertised.

#### 4. Component Pressure Testing

Pressure testing of the BOP components was successfully conducted with no issues.

### On-Bottom Testing

## 1. ROV Hot Stab Testing

Functioned the upper blind shear rams closed with ROV. Confirmed successfully closed via 5 min pressure test to 1000 psi.

## 2. Deadman Testing

The deadman test was conducted successfully closing the casing shear rams and lower blind shear rams. The lower blind shear rams were confirmed closed via a 250 psi test. Upon function testing of blind shear rams and casing shear rams on both pods, the blue pod was unable to close the casing shear rams. The BOP stack was pulled to find the problem. The problem was identified as the solenoid connection; it was repaired, the stack was rerun, and the casing shear rams were successfully functioned closed.

## 3. EDS Testing

Not conducted on bottom

## 4. Component Pressure Testing

All required components were successfully pressure tested.

## MC 252 003 Relief Well drilled with the Transocean Development Driller III

### Stump test summary

1. All pertinent hot stab functions on the LMRP and BOP stack were successfully tested via the ROV auxiliary pump. The auxiliary pump had been calibrated to the same rate and pressure as the ROV pump. The actual ROV pump could not be used for all of the testing because of overheating concerns but it was used to calibrate the auxiliary pump.
2. There was a complete hydraulic actuation of the EDS (Emergency Disconnect Sequence) that was successful. Also dry or electronic testing of the EDS was conducted from remote panels.
3. There was a deadman test which was unsuccessful because of a failed SPM valve that dumped hydraulic control fluid before it could be transmitted to the Casing Shear Ram to activate its closing. This was a very telling test in that it was not normally conducted as part of the stump test. After repairing the SPM valve (and two others – one for “chattering” which indicated possible near term failure and the other one for precautionary measures since it was the only other SPM valve in the 3 valve circuit), the deadman test was conducted successfully.
4. The pressure tests of all components were successful and had no issues.

### On-Bottom testing

1. ROV closing of the upper blind shear ram; confirmed closed via 1000 psi pressure test.
2. Deadman test conducted successfully; confirmed lower blind shear ram closed via 250 psi pressure test.

Conclusion:

Current regulation only requires pressure testing of the BOP components with no secondary controls required. Conventional testing of BOP stacks on the stump usually include electronic or dry testing of the EDS system and ROV functioning with a flying lead. Additional testing on the stump conducted for these relief wells included a hydraulic or wet testing of the EDS, a deadman test with BOP stack accumulator, and the hot stab functioning with the actual ROV pump or a pump calibrated to the ROV pump output.

Additional on-bottom testing for these relief wells included a deadman test and actual functioning of the upper blind shear ram closed with the ROV. Obviously, on bottom testing where practical is more valuable than stump testing.

Thanks,  
Dave

**David J Trocquet**  
New Orleans District Manager  
US Dept of the Interior  
Bureau of Ocean Energy Management, Regulation, and Enforcement  
Gulf of Mexico Region



# The White House Blog

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## The Ongoing Administration-Wide Response to the Deepwater BP Oil Spill

Posted by Heidi Avery on May 05, 2010 at 05:55 AM EDT

*Ed. Note: For more information on federal response resources, volunteer opportunities, and assistance for those in affected areas visit [WhiteHouse.gov/Deepwater-BP-Oil-Spill](http://WhiteHouse.gov/Deepwater-BP-Oil-Spill). The latest updates will now be available on the [Deepwater BP Oil Spill](#) blog. This post was updated on 5/25/10 at 3:56PM.*

Since the Deepwater Horizon explosion the night of April 20, federal authorities, both military and civilian, have been working onsite and around the clock to respond to and mitigate the impact of the resulting BP Oil Spill in the Gulf of Mexico.

We have compiled this chronology in the spirit of transparency so the American people can have a clear understanding of what their government has been and is doing to respond to the massive and potentially unprecedented environmental disaster.

*Heidi Avery is White House Deputy Homeland Security Advisor*

### **NIGHT OF TUESDAY, APRIL 20**

#### **Search and Rescue**

The U.S. government response to the BP Oil Spill began immediately after the explosion on the night of April 20 as an emergency search-and-rescue mission. At approximately 10:30 p.m. that night, notification was received that Mobile Offshore Drilling Unit (MODU) Deepwater Horizon had exploded and was on fire. The rig was located 45 miles southeast of Venice, La.

#### **Establish Command Center to Address Potential Environmental Impacts**

Concurrently, the administration also quickly establishes a command center on the Gulf Coast to address the potential environmental impact of the event and to coordinate with all state and local governments. Since this point, the administration has continuously anticipated and planned for a worst-case scenario.

#### **NOAA Mobilizes to Provide Trajectory Support**

The National Oceanic and Atmospheric Administration (NOAA) mobilizes within three hours of the explosion and started to provide trajectory support and coordinated scientific weather and biological response services. The NOAA weather forecast office in Slidell, La., also provided weather information to the Coast Guard at its request shortly after the explosion to support initial search-and-rescue operations.

C A T E

Civil I

Defen

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Energ

Ethics

Famil

E

**The President is Alerted**

The President is alerted to the event and he begins actively monitoring the situation. At the time, it was known that 126 people were on the rig when the explosion occurred.

**Assets Deployed To Date**

*Total response vessels: Two Coast Guard cutters*

*Total response aircraft: Four helicopters and one rescue plane*

**WEDNESDAY, APRIL 21**

**Deputy Secretary of Interior David Hayes is Deployed to the Gulf Coast**

The morning after the explosion, Secretary of the Interior Ken Salazar deployed Deputy Secretary David J. Hayes to the Gulf Coast to assist with coordination and response to the event, and provide hourly reports to Secretary Salazar and other administration officials.

**Interagency Coordination Begins Across the Government, Federal On-Scene Coordinator is Named and Regional Response Team is Stood Up**

Interagency coordination begins immediately among federal partners—including the Coast Guard; the Departments of Homeland Security (DHS), Commerce (DOC), Interior (DOI); and the Environmental Protection Agency (EPA)—providing federal assets and overseeing BP’s response. Pursuant to the National Contingency Plan, Rear Admiral Mary Landry was named the Federal On-Scene Coordinator and a Regional Response Team was stood up that included the U.S. Coast Guard, DHS, DOC/NOAA, DOI and the EPA, as well as state and local representatives. The Regional Response Team immediately began developing plans, providing technical advice and access to resources and equipment from its member agencies, and overseeing BP’s response.

**The Administration Oversees BP’s Response**

The administration begins holding meetings and regular calls with BP leadership to discuss BP’s response effort, as well as federal oversight and support, and urged BP to leverage additional assets to help respond to this event.

**Interagency Joint DHS-DOI Investigation Begins**

Secretary Salazar and Secretary Napolitano direct that a joint investigation begin into the cause of the event. The investigation, jointly led by the U.S. Coast Guard and the Minerals Management Service (MMS), are given subpoena power, will hold public hearings, and call witnesses. MMS and USCG begin interviewing rig personnel.

**National Park Service Plans Contingencies to Protect Vulnerable Parks Along Gulf Coast**

The National Parks Service (NPS) Spill Response Coordinator, Regional Emergency Services Coordinator, and Deputy Chief of Emergency Services begin strategic planning of contingencies to protect potentially vulnerable national parks along the Gulf Coast.

**MMS Establishes Ops Center and Deploys Staff to BP and Transocean Command Posts**

MMS establishes an Emergency Operations Center at its Gulf of Mexico Regional Office in New Orleans, and

Fiscal  
Foreign  
Health  
Home  
Immig  
Pover  
Rural  
Senior  
Servic  
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deployed employees to the BP Incident Command Post (ICP) and the Transocean ICP in Houston.

### **NOAA Selects Scientific Support Coordinator and Deploys Him to USCG Command Post**

NOAA Environmental Scientist Charlie Henry arrive on site at the Coast Guard's Command Post in Morgan City, La., to serve as NOAA's Scientific Support Coordinator. NOAA issued the initial trajectory advice and began providing them twice daily.

### **The President is Briefed**

The President monitors the response and is briefed throughout the day by the White House Situation Room

### **Search and Rescue Continues**

Of the 126 total people on the rig at the time of the event, 115 crew members were accounted for. The Coast Guard continued to actively search for all 11 individuals still missing through the night, with multiple units, vessels and aircraft responding.

### **Daily Response On-Site Press Briefing Begins**

The first in a daily series of press briefings was conducted between the Minerals Management Service (MMS), the Coast Guard, BP and Transocean.

### **Assets Deployed To Date**

*Total response vessels: Two Coast Guard cutters*

*Total response aircraft: Four helicopters and one rescue plane*

### **Response Photos:**

[http://cgvi.uscg.mil/media/main.php?g2\\_itemId=836364](http://cgvi.uscg.mil/media/main.php?g2_itemId=836364)

[http://cgvi.uscg.mil/media/main.php?g2\\_itemId=836361](http://cgvi.uscg.mil/media/main.php?g2_itemId=836361)

[http://cgvi.uscg.mil/media/main.php?g2\\_itemId=835864](http://cgvi.uscg.mil/media/main.php?g2_itemId=835864)

[http://cgvi.uscg.mil/media/main.php?g2\\_itemId=837369](http://cgvi.uscg.mil/media/main.php?g2_itemId=837369)

## **THURSDAY, APRIL 22**

### **Deepwater Horizon Oil Rig Sinks**

At approximately 10:22 a.m., the oil rig sank with approximately 700,000 gallons of diesel fuel on board.

### **The National Response Team (NRT) is Activated**

On the afternoon of April 22, the National Response Team (NRT) convenes its first daily meeting with leadership from across the federal government, including the White House, U.S. Coast Guard, the Department of Defense,

DHS, DOC, DOI and EPA, among others. The NRT is an organization of 16 federal departments and agencies responsible for coordinating emergency preparedness and response to oil and hazardous substance pollution events. During this event, NRT meetings have been run by Secretary Napolitano.

#### **The President Convenes a Principal Level Meeting: "Treat This Response as The Number One Priority"**

The President convenes a meeting in the Oval Office with principals across the government to discuss the situation and ongoing response efforts, and ordered that the administration use every single available resource at its disposal to respond to the event and investigate its cause. A readout was issued to press stating: "The President made sure that the entire federal government was offering all assistance needed in the rescue effort as well as in mitigating and responding to the environmental impact and that this response was being treated as the number one priority. The President asked the responding departments to devote every resource needed to respond to this incident and investigate its cause."

#### **The NRT Holds Second Meeting of the Day to Implement President Obama's Instructions**

Following the Oval Office meeting, the NRT holds a second evening meeting—again including the Coast Guard, the Department of Defense, DHS, DOC, DOI and EPA, among others.

#### **No Apparent Leak**

Air and sea restriction zones are established around the sink site for safety purposes. The Coast Guard conducted overflights and multiple unsuccessful dives were made with remote operated marine vehicles to find the wellhead. No leak was apparent.

#### **Dispersants Are Pre-Positioned In Case Situation Worsens**

Despite a lack of apparent leak, 100,000 gallons of dispersants are already pre-positioned between Stennis, Miss., Houma and Lake Charles, La., and pre-approved for use by EPA Regions VI and IV Regional Response Teams.

#### **NOAA Begins to Provide Marine Pollution Surveillance Reports**

NOAA Satellite and Information Service provides the first experimental marine pollution surveillance report using satellite data, and began providing daily updates.

#### **Search and Rescue Continues**

Coast Guard continues to actively search for all 11 missing individuals from the rig through the night, with multiple units responding.

#### **Intergovernmental Calls with Potentially Impacted Gulf Coast Communities Begin**

Intergovernmental calls update potentially impacted gulf coast communities the response are communicated to potentially impacted Gulf Coast communities

#### **Daily Response On-Site Press Briefing is Conducted**

The next in a daily series of press briefings was conducted between the Minerals Management Service (MMS), the Coast Guard, NOAA, BP and Transocean.



## **Assets Deployed To Date**

*Total response vessels: Two Coast Guard cutters*

*Total response aircraft: Four helicopters and one rescue plane*

## **Response Photos:**

<http://www.flickr.com/photos/uscgd8/4551846015/in/set-72157623940838176/>

<http://www.flickr.com/photos/39955793@N07/4545746887/>

[http://cgvi.uscg.mil/media/main.php?g2\\_itemId=838790](http://cgvi.uscg.mil/media/main.php?g2_itemId=838790)

## **FRIDAY, APRIL 23**

### **No Apparent Leak**

The rig was found—sunken and upside down approximately 1,500 feet northwest of the blowout preventer. An oil sheen was reported with approximately 8,400 gallons estimated on the water and there was no apparent leak discovered.

### **White House Convened Principal Level Meeting to Discuss Response and Planning In Case Situation Worsens**

White House convenes principal level meeting with top officials from across the government including Secretary Napolitano and the NRT in the White House Situation Room to review actions underway and discuss policy considerations and planning in case the situation worsens.

### **U.S. Government Continues to Mobilize and Move More Resources In Case Situation Worsens**

The U.S. government continues to mobilize and move more resources into the gulf to support BP, the responsible party, and apply federal resources to mitigate environmental damage, including moving 8 more vessels to the area

### **EPA Prepares To Deploy Staff to the Region for Air Monitoring**

EPA begins preparations to deploy staff to the region to support the Coast Guard with air monitoring and other activities.

### **MMS Shuts Down Two Pipelines In the Area To Do Inspection**

MMS reports that two pipelines in the vicinity of the sunken rig were shut down until they could be inspected.

### **Sunken Rig Assessments Continue**

Four remote operated marine vehicles continue to monitor the stack, conduct surveys of the riser and pipelines, and assess the stability of the sunken rig.

### **Unified Area Command is Formally Stood Up**

The Unified Area Command is formally and fully stood up in Robert, La., after three days of informal operations and planning.

#### **The President is Briefed**

The President monitors the response and is briefed throughout the day by the White House Situation Room

#### **NOAA's National Weather Service Begins Coordinated Scientific Weather Reports**

NOAA's National Weather Service begins providing coordinated scientific weather and biological response services to federal, state and local organizations.

#### **Search and Rescue Suspends at 5p.m**

The Coast Guard continues to actively search for all 11 missing individuals until approximately 5 p.m., when the search was suspended.

#### **Daily Legislative Calls Begin and Daily Response On-Site Press Briefing and Intergovernmental Calls Are Conducted, Deepwaterhorizonresponse.com is Launched**

The Coast Guard conducts the next in a daily series of press briefings and intergovernmental calls. A response website with consolidated information was established at <http://www.deepwaterhorizonresponse.com>.

#### **Assets Deployed To Date—8 More Vessels Arrive**

*Total response vessels: approximately 10*

*Oily water recovered: 7,600 gallons*

*Dispersant used: 1,900 gallons*

#### **SATURDAY, APRIL 24**

#### **First Oil Leaks Discovered and USCG Elevates Response**

For the first time, oil was found to be leaking—one leak from the riser and one leak from the drill pipe. The Coast Guard elevated the response and established a Regional Command Center and Joint Information Center in Robert, La., inviting all partners in the response to join.

#### **NPS Prepares for Potential Oil Spill on national park land along the Gulf Coast**

NPS begins cataloging resources and sampling pre-landfall conditions of resources in order to prepare for potential impact of the oil spill on national park land along the Gulf Coast.

#### **MMS Begins to Review BP Applications for Permit to Drill Two Relief Wells**

MMS reports that they expected to receive and begin reviewing BP Applications for Permit to Drill (APD) for two relief wells. Four remote operated marine vehicles continued to monitor the stack, conduct surveys of the riser and pipelines, and assess the stability of the sunken rig.

#### **The President is Briefed**

The President monitors the response and is briefed throughout the day by the White House Situation Room

### **Daily On-Site Press Briefing, Legislative and Intergovernmental Calls are Conducted**

The next in a daily series of press briefings is conducted between the Minerals Management Service (MMS), the Coast Guard, NOAA, BP and Transocean—this time at the newly-formed Joint Information Center in Robert, La., as well as daily legislative and intergovernmental calls.

### **Assets Deployed To Date**

*Total response vessels: approximately 10*

*Oily water recovered: approximately 40,000 gallons*

### **Response Photos:**

<http://www.flickr.com/photos/uscgd8/4549418892/>

### **SUNDAY, APRIL 25**

Overflights indicated the oil spill size was approximately 48 miles wide by 39 miles long.

### **Outreach to Potentially Impacted Gulf Coast States, Response Equipment Staging Areas Established**

All potentially impacted Gulf Coast states are notified and invited to participate in the command center located in Robert, La. Response equipment staging areas were established in Venice, La., Biloxi, Miss., and Pensacola, Fla.

### **U.S. Naval Air Station Serves as Staging Facility**

At the request of the Coast Guard, the U.S. Navy provides Naval Air Station Pensacola as a staging facility for BP-contractor provided equipment (i.e. containment booms, recovery barges, tractor trailer trucks, various pumps and other related oil response equipment).

### **20 More Vessels and 500 Responders Are Deployed In Case Situation Worsens**

The response continues to mobilize and move more resources into the gulf to support BP, the responsible party, and apply federal resources to mitigate environmental damage, including moving 20 more vessels to the area and deploying 500 responders

### **MMS Approves Resumption of One of the Two Pipelines Previously Shut Down and Works With BP on Exploration Plan to Drill Relief Wells**

MMS approves resumption of one of the two pipelines that were previously shut down to allow for inspection, and continued to work with BP on an exploration plan to drill the two relief wells.

### **The President is Briefed**

The President monitors the response and is briefed throughout the day by the White House Situation Room

### **Daily On-Site Press Briefing, Legislative and Intergovernmental Calls are Conducted**

The next in a daily series of press briefings is conducted between the Minerals Management Service (MMS), the Coast Guard, NOAA, BP and Transocean at the Joint Information Center in Robert, La., as well as daily legislative and intergovernmental calls.

### **Assets Deployed To Date-20 More Vessels and 500 Responders**

*Total response vessels: more than 30*

*Boom deployed: 21,340 feet*

*Oily water recovered: approximately 42,000 gallons*

*Dispersant used: 12,600 gallons*

*Dispersant available: approximately 100,000 gallons*

*Overall personnel responding: approximately 500*

### **Response Photos:**

[http://cgvi.uscg.mil/media/main.php?q2\\_itemId=841178](http://cgvi.uscg.mil/media/main.php?q2_itemId=841178)

<http://www.flickr.com/photos/uscgd8/4552485336/>

### **MONDAY, APRIL 26**

#### **Secretary Salazar Announces Physical Inspections of All Deepwater Rigs**

Secretary Salazar directs MMS to commence physical inspections of all deepwater rigs to be concluded with two weeks, followed by physical inspections of all deepwater platforms.

#### **U.S. Fish and Wildlife Service Begin Identifying High Priority National Resources for Booming Operations**

The U.S. Fish and Wildlife Service begin working with the Coast Guard and other partners to identify high-priority natural resources (national wildlife refuges) for booming operations along potentially affected Gulf Coast areas.

#### **The President is Briefed**

The President monitors the response and is briefed throughout the day by the White House Situation Room

#### **BP Submits Application for Preliminary Drilling**

MMS reports that the Application for Preliminary Drilling (APD) for the *Development Driller III* had been submitted by BP and was currently under review. A total of 15 MMS personnel were deployed to support event response.

### **Daily On-Site Press Briefing, Legislative and Intergovernmental Calls are Conducted**

The next in a daily series of press briefings is conducted between the Minerals Management Service (MMS), the Coast Guard, NOAA, BP and Transocean at the Joint Information Center in Robert, La., as well as daily legislative and intergovernmental calls.

## **Assets Deployed To Date- 500 More Responders Deploy**

*Total response vessels: more than 30*

*Boom deployed: 21,340 feet*

*Oily water recovered: 48,384 gallons*

*Dispersant used: 14,654 gallons*

*Dispersant available: 119,734 gallons*

*Overall personnel responding: more than 1,000*

## **Response Photos:**

<http://www.flickr.com/photos/uscgd8/4557684643/in/set-72157623940838176/>

<http://www.flickr.com/photos/uscgd8/4558317388/in/set-72157623940838176/>

<http://www.flickr.com/photos/uscgd8/4558215118/>

## **TUESDAY, APRIL 27**

### **DOI-DHS Announce Formal Investigation Next Steps**

Secretary Salazar and Secretary Napolitano announce the formal next steps to their joint investigation underway into the causes of the explosion that left 11 workers missing, three critically injured, and an ongoing oil spill that the responsible party and federal agencies are working to contain and clean up. It is proceeding under a Joint Statement of Principles and Convening Order, which convenes the formal joint investigation, and a Memorandum of Agreement, which lays out roles and responsibilities that relate to each agency's area of expertise.

### **White House Meets with BP to Discuss Response Efforts**

Numerous top administration officials, including Secretary Napolitano, Secretary Salazar, White House Senior Advisor Valerie Jarrett and Assistant to the President for Energy and Climate Carol Browner hold meetings in Washington with BP executives and received briefings on company efforts to stop the oil flow.

### **The President is Briefed**

The President monitors the response and is briefed throughout the day by the White House Situation Room

### **Controlled Burn Plans Are Approved**

Plans for a controlled burn of contained oil were approved late at night for the following day. Burns of this type are heavily dependent on weather conditions.

### **Daily On-Site Press Briefing, Legislative and Intergovernmental Calls are Conducted**

The next in a daily series of press briefings is conducted between the Minerals Management Service (MMS), the Coast Guard, NOAA, BP and Transocean at the Joint Information Center in Robert, La., as well as daily legislative and intergovernmental calls.

### **Assets Deployed To Date-20 Additional Vessels Arrive**

*Total response vessels: approximately 50*  
*Boom deployed: 29,280 feet*  
*Boom available: 80,900 feet*  
*Oily water recovered: 260,652 gallons*  
*Dispersant used: 29,140 gallons*  
*Dispersant available: 119,734 gallons*  
*Overall personnel responding: more than 1,000*

**Response Photos:**

<http://www.flickr.com/photos/uscgd8/4563748656/in/set-72157623940838176/>

<http://www.flickr.com/photos/uscgd8/4563118299/in/set-72157623940838176/>

<http://www.flickr.com/photos/uscgd8/4558745875/>

[http://governor.alabama.gov/gallery/images\\_detail.aspx?ID=995](http://governor.alabama.gov/gallery/images_detail.aspx?ID=995)

**WEDNESDAY, APRIL 28**

**Controlled Burn Is Conducted**

A successful controlled, on-location burn is conducted for approximately 30 minutes—a strategy designed to minimize environmental risks by removing large quantities of oil in the Gulf of Mexico following the April 20 explosion. Burns of this type are heavily dependent on weather conditions.

**Secretary Salazar Travels to BP Command Center in Houston**

Secretary Salazar travels to the BP command center in Houston to review BP's operations and response efforts.

**MMS Approves First Drilling Permit for First Relief Well**

MMS reports that the drilling permit for the first relief well had been approved, and that the application for the second relief well was under review.

**U.S. Navy Sends Additional Assets**

In direct support of the Coast Guard under an existing pollution clean-up and salvage operations agreement, the Navy provides a variety of oil pollution control equipment. The Navy sent thousands of feet of inflatable oil boom with mooring equipment, several skimming systems, related support gear, and personnel to support oil spill response efforts. Naval Air Station Pensacola is serving as a staging facility for Coast Guard contractor-provided equipment.

**Daily On-Site Press Briefing, Legislative and Intergovernmental Calls are Conducted**

The next in a daily series of press briefings is conducted between the Minerals Management Service (MMS), the Coast Guard, NOAA, BP and Transocean at the Joint Information Center in Robert, La., as well as daily legislative and intergovernmental calls.

**Additional Breach Discovered, President is Briefed and Response Escalates**

Late in the day, BP alerted the U.S. government to an additional breach. As soon as the additional breach was discovered, senior officials from across the government already convened in the White House Situation Room immediately briefed the President on Air Force One, and Rear Admiral Landry is sent back out for the second time that day to brief press, this time on the additional breach and the steps the administration is taking to respond, including that the President urged – out of an abundance of caution, and mindful of the new information – that we must continue to pre-position resources to continue to aggressively confront this incident.

#### **Assets Deployed To Date**

*Total response vessels: approximately 50*  
*Boom deployed: 147,100 feet*  
*Oily water recovered: 400,080 gallons*  
*Dispersant used: 56,000 gallons*  
*Dispersant available: 119,734 gallons*  
*Overall personnel responding: more than 1,000*

#### **Response Photos:**

<http://www.flickr.com/photos/uscgd8/4563719473/in/set-72157623940838176/>

<http://www.flickr.com/photos/39955793@N07/4566316896/>

#### **THURSDAY, APRIL 29**

#### **Oil Spill Update During the PDB**

The President receives another in depth briefing of the escalating situation in his morning PDB session

#### **Spill of National Significance is Declared and White House Holds Briefing for White House Reporters on The Additional Breach and Corresponding Response Efforts**

Senior officials from across the government, including Secretary Napolitano, EPA Administrator Jackson and NOAA Administrator Lubchenco and White House Press Secretary Robert Gibbs brief White House reporters in the White House briefing room on the change in the event: the additional breach.

Secretary Napolitano announces that the event would now become designated a Spill of National Significance (SONS), which built on the efforts already underway from day one to leverage the full resources of the federal government to be brought to bear in response to this further escalating event. The SONS designation enabled the appointment of a National Incident Commander to coordinate response resources at the national level. The designation does not provide additional funding or authority—nor was it needed, as that authority already existed and resources were mobilized in case the situation worsened from day one. This is why the day DHS announced the SONS designation, there were already more than 70 vessels in the Gulf of Mexico responding to the spill and approximately 1,100 personnel already deployed and on scene to assist.

#### **The President Orders Secretary Salazar to Deliver Report on Additional Safety Measures for Offshore Operations to be Completed Within 30 Days**

Secretary Salazar receives direction from the President to deliver in 30 days a report with recommendations on what, if any, additional safety measures should be required for offshore operations. He then announced that inspections of all deepwater rigs and platforms were underway.

### **The President Makes Remarks on the Oil Spill's Escalated Situation**

The President updates the American people on the worsening situation in the Gulf of Mexico and states that his administration will continue to use every single available resource at our disposal, including potentially the Department of Defense, to address the incident.

### **White House Convenes Deputy's Committee Meeting in Situation Room**

The White House convenes a meeting at the deputy secretary level with senior officials from across the government to discuss the escalating situation, the response and to continue planning for worsening situations

### **DoD Designates Mississippi's Kessler Air Force Base as Base Support Installation**

DOD designates Keesler Air Force Base in Mississippi as a base support installation. The installation will serve as a location where military units conduct logistical operations.

### **DOI Secretary Salazar Hosts Meeting of Oil and Gas Companies to Urge Them To Help**

Secretary Salazar spends the day in Houston reviewing BP's operations and response efforts. Upon his return from Houston, Secretary Salazar hosts a meeting of oil and gas companies in his office and urged them to make available all available resources to the response.

### **Daily On-Site Press Briefing, Legislative and Intergovernmental Calls are Conducted**

The next in a daily series of press briefings was conducted between the Minerals Management Service (MMS), the Coast Guard, NOAA, BP and Transocean at the Joint Information Center in Robert, La., as well as daily legislative and intergovernmental calls.

### **Assets Deployed To Date-Additional 25 Vessels Arrive**

*Total response vessels: approximately 75*

*Boom deployed: 174,060 feet*

*Boom available: 243,260 feet*

*Oily water recovered: 763,560 gallons*

*Dispersant used: 98,361 gallons*

*Dispersant available: 75,000 gallons*

*Overall personnel responding: more than 1,000*

### **Response Photos:**

[http://cgvi.uscg.mil/media/main.php?g2\\_itemId=844167](http://cgvi.uscg.mil/media/main.php?g2_itemId=844167)

[http://cgvi.uscg.mil/media/main.php?g2\\_itemId=844164](http://cgvi.uscg.mil/media/main.php?g2_itemId=844164)

[http://www.nasa.gov/images/content/449676main\\_gulf-spill-full.jpg](http://www.nasa.gov/images/content/449676main_gulf-spill-full.jpg)

### **FRIDAY, APRIL 30**

### **The President Dispatches Senior Administration Officials to the Gulf Coast**



The President dispatches Secretary Napolitano, Secretary Salazar, EPA Administrator Lisa Jackson, Assistant to the President for Energy and Climate Change Policy Carol Browner, and NOAA Administrator Jane Lubchenco to the Gulf Coast.

#### **The President Makes Remarks on the Oil Spill's Escalating Situation**

The President updates Americans on the ongoing federal response to the worsening BP oil spill

#### **National Guard Activation**

In response to the BP oil spill, the Secretary of Defense authorizes under Title 32 the mobilization of the Louisiana National Guard to help in the ongoing efforts to assist local communities in the cleanup and removal of oil and to protect critical habitats from contamination.

#### **Secretary of Defense Approves Request for Two C-130 Aircrafts To Respond**

The Secretary of Defense approves a request for two C-130 aircraft with Modular Aerial Spray Systems (MASS), which are currently en route to the affected area. The Coast Guard requested assistance from the Department of Defense for these aircraft. These aircraft dispense the same dispersant chemical being used by BP and the federal responders. Each system is capable of covering up to 250 acres per flight with three flights per aircraft per day.

#### **Response Crews Begin Testing New Dispersant Technique**

Response crews begin testing a new technique to break up the oil before it reaches the surface—a remotely operated underwater vehicle dispensing sub-surface dispersant at a rate of nine gallons per minute. Nearly 3,000 gallons of subsea dispersants were applied, and BP and NOAA evaluated these tests to determine the feasibility of continued use of subsea dispersants.

#### **EPA Begins Monitoring Water Quality, Administrator Jackson Remains On The Ground**

EPA begins monitoring water quality in the Gulf Coast region. EPA Administrator Jackson remains on the ground in the region for the following three days, visiting sites in Louisiana and Mississippi and meeting with community leaders, local industry and elected leaders at the state and local level.

#### **The President is Briefed**

The President monitors the response and is briefed throughout the day by the White House Situation Room

#### **DOI Establishes Outer Continental Shelf Safety Oversight Board**

DOI establishes the Outer Continental Shelf (OCS) Safety Oversight Board to provide recommendations regarding interim measures that may enhance OCS safety, as well as improving and strengthening the Department's overall management, regulation and oversight of OCS operations. Secretary Salazar will provide a report to President Obama within 30 days on what, if any, immediate additional precautions and technologies should be required

#### **Senior Federal and State Officials Hold Joint Press Briefing On-Site**

Secretary Napolitano, Secretary Salazar, EPA Administrator Jackson, Louisiana Governor Bobby Jindal and BP Chief Operating Officer Doug Suttles conducted a press briefing. Daily legislative and intergovernmental calls were also conducted.

## **NOAA Provides Additional Resources To Protect Critical Wildlife**

Personnel from NOAA's National Marine Sanctuaries program provided additional resources for both response and assessment efforts to protect critical wildlife.

## **Sixth Staging Area Stood Up**

A sixth staging area is set up in Port Sulphur, La., joining five others in Venice, La., Biloxi, Miss., Pascagoula, Miss., Theodore, Ala., Pensacola, Fla.

## **Assets To Date—1,000 More Responders Arrive**

*Total response vessels: approximately 75*

*Boom deployed: 217,000 feet*

*Boom available: 305,760 feet*

*Oily water recovered: 853,146 gallons*

*Dispersant used: 139,459 gallons*

*Dispersant available: 51,000 gallons*

*Overall personnel responding: approximately 2,000*

## **Response Photos:**

<http://www.flickr.com/photos/usnavynvns/4574068993/>

<http://www.flickr.com/photos/usnavynvns/4574069413/>

[http://cgvi.uscg.mil/media/main.php?g2\\_itemId=844563](http://cgvi.uscg.mil/media/main.php?g2_itemId=844563)

<http://www.flickr.com/photos/uscgd8/4566787948/>

## **SATURDAY, MAY 1**

### **Secretary Napolitano Names U.S. Coast Guard Commandant Admiral Thad Allen to Serve as National Incident Commander**

As part of the designation of the BP Oil Spill as a Spill of National Significance, Secretary Napolitano announces that Coast Guard Commandant Admiral Thad Allen will serve as the National Incident Commander for the administration's continued, coordinated response— providing additional coordinated oversight in leveraging every available resource to respond to the BP oil spill and minimize the associated environmental risks. Admiral Allen has overseen Coast Guard efforts since the moment this event began, when the agency responded quickly to the April 20 explosion in a search and rescue capacity in order to save lives. With this formal designation Admiral Allen is able to continue to lead and coordinate ongoing federal actions to mitigate the oil spill, for which BP is responsible and required to pay response and cleanup costs.

### **The President is Briefed**

The President monitors the response and is briefed throughout the day by the White House Situation Room

### **White House Convenes Deputy's Committee Meeting in Situation Room**

The White House convenes a meeting at the deputy secretary level with senior officials from across the government to discuss the escalating situation and the response

### **White House Homeland Security Advisor and U.S. Coast Guard commandant Brief Reporters Via Conference Call on the Ongoing Response Efforts**

White House Homeland Security Advisor John Brennan and Admiral Allen brief media via conference call about ongoing efforts to contain the spill and minimize associated environmental risks.

### **DoD Airlifts Additional Booms To Better Protect Gulf Coast**

To prepare for the possible spreading of the oil slick across the Gulf Coast and in support of the 2nd Unified command Center in Mobile, Ala., the Department of Defense airlifted additional boom materials to Mobile, located on four tractor trailers to expedite transportation on the receiving end.

### **Eight Staging Areas Begin Operating**

Eight staging areas were operating in Venice, La., Biloxi, Miss., Pascagoula, Miss., Theodore, Ala., Pensacola, Fla., Port Sulphur, La., Gulfport, Miss., and Port Fourchon, La.

### **Assets To Date**

*Total response vessels: approximately 75*  
*Boom deployed: 275,580 feet*  
*Boom available: 316,470 feet*  
*Oily water recovered: more than 1 million gallons*  
*Dispersant used: 142,914 gallons*  
*Dispersant available: 68,300 gallons*  
*Overall personnel responding: approximately 2,000*

### **Response Photos:**

[http://cgvi.uscg.mil/media/main.php?g2\\_itemId=847276](http://cgvi.uscg.mil/media/main.php?g2_itemId=847276)

## **SUNDAY, MAY 2**

### **President Obama Visits Gulf Coast to Inspect Response Effort**

President Obama visits the Gulf Coast to inspect response operations firsthand, underscoring the administration's all-hands-on-deck response to protect the coastline of potentially affected Gulf Coast states.

### **EPA Posts First Air Monitoring Data Results**

EPA posts on its [dedicated response website](#) the first air monitoring data it has collected in the area—with no red flags.

### **NOAA Announces Fishing Restriction**

NOAA announces a fishing restriction for a minimum of ten days in federal waters most affected by the BP oil spill, largely between Louisiana state waters at the mouth of the Mississippi River to waters off Florida's Pensacola

Bay. The closure was effective immediately. This order balances economic and health concerns and only closes those areas affected by oil. Details can be found [here](#).

### **Secretaries Napolitano and Salazar Host Gulf Coast States Conference Call**

Secretaries Janet Napolitano and Ken Salazar spoke by conference call to Governors Haley Barbour (MS), Bob Riley (AL), Rick Perry (TX), Charlie Crist (FL) and the Deputy Chief of Staff to Gov. Bobby Jindal (LA). Gov. Jindal was with President Obama. They briefed the Governors on the ongoing response to the BP oil spill in the gulf. They spoke specifically about efforts to stop the oil leaks and about mitigating the oil's impact on the shorelines of their states. Additionally, they spoke about ways to enhance what has been strong cooperation between the federal government and the states.

### **30 More Vessels and Additional 1,000 Responders Are Deployed to the Gulf Coast**

The response continues to mobilize and move more resources into the gulf to support BP, the responsible party, and apply federal resources to mitigate environmental damage, including moving 30 more vessels to the area and deploying an additional 1,000 responders

### **BP Begins Accepting Claims**

BP begins accepting claims for the Gulf Coast oil spill via BP's helpline at 1-800-440-0858. A BP fact sheet with additional information is available [here](#). Those who have already pursued the BP claims process and are not satisfied with BP's resolution can call the Coast Guard at 1-800-280-7118. More information about what types of damages are eligible for compensation under the Oil Pollution Act as well as guidance on procedures to seek that compensation can be found [here](#).

### **Additional DoD Assets Arrive**

Two Modular Aerial Spray System (MASS) aircraft were deployed in support of the event. Both aircraft have multiple missions scheduled daily, contingent on weather. These aircraft can dispense the same dispersant chemical being used by BP and the federal responders. Each system is capable of covering up to 250 acres per flight with three flights per aircraft per day—building on existing dispersant capabilities.

A C-17 aircraft carrying pollution response boom components for support flew from Travis AFB in California and arrived at Mobile International Airport.

### **MMS Reports that BP Begins Drilling First Deep-Water Intercept Relief Well**

MMS reported that BP began drilling the first deep-water intercept relief well. This action is expected to take approximately 90 days.

### **Assets To Date—30 More Vessels and Additional 1,000 Responders Arrive**

*Total response vessels: 104*  
*Boom deployed: 243,200 feet*  
*Boom available: 522,821 feet*  
*Oily water recovered: more than 1 million gallons*  
*Dispersant used: 156,012 gallons*  
*Dispersant available: 75,124 gallons*  
*Overall personnel responding: approximately 3,000*

## **MONDAY, MAY 3**

### **The President Dispatches Senior Cabinet Officials Back to the Gulf Coast**

The President dispatches the secretaries of Commerce, Interior and Homeland Security, the EPA Administrator and the NOAA Administrator to return to the Gulf Coast this week. Specific details on their travel will come from their departments and agencies, but collectively they will be inspecting the ongoing, coordinated response efforts to mitigate the impact of the spill on public health, the environment and the economy. They will meet with business owners to discuss potential economic impacts of this spill across the Gulf Coast region.

### **Senior Administration Officials Meet with BP Senior Leadership**

Secretary Salazar, Secretary Napolitano, EPA Administrator Jackson and other members of the Obama administration met with BP CEO Tony Hayward and BP America Chairman and President Lamar McKay at the Department of the Interior to discuss ongoing, coordinated response efforts and receive an update on BP's mitigation plans for potentially impacted Gulf Coast states. This was the most recent in a series of meetings that have taken place between administration leadership and BP leadership.

### **White House Convenes Deputy's Committee Meeting in Situation Room**

The White House convenes a meeting at the deputy secretary level with senior officials from across the government to discuss the escalating situation, the response and to continue planning for worsening situations

### **More Than 2,000 Volunteers Are Trained To Assist**

More than 2,000 volunteers receive training to assist in the response effort to that date. Volunteer recruitment efforts include outreach to local fishermen with boats, which can be used as vessels of opportunity to assist contractors in deploying boom.

### **OSHA Ensures Cleanup Workers Receive Necessary Protection**

Assistant Secretary of Labor for Occupational Safety and Health Dr. David Michaels visits Louisiana with a team of experienced hazardous materials professionals leading an effort to ensure that oil spill cleanup workers receive necessary protections from the hazards of this work. OSHA is consulting with BP, as well as federal agency partners, to ensure that workers receive appropriate training and protective equipment.

### **Assets To Date—80 More Vessels Arrive**

*Total response vessels: 183*

*Boom deployed: 156,703 feet*

*Boom available: 530,061 feet*

*Oily water recovered: more than 1 million gallons*

*Dispersant used: 156,012 gallons*

*Dispersant available: 230,138 gallons*

*Overall personnel responding: approximately 3,000*

## **TUESDAY, MAY 4**

### **Cabinet Officials Brief Members of Congress**

Secretary Salazar, Secretary of Commerce Gary Locke, Administrator Jackson, DHS Deputy Secretary Jane Holl Lute and Admiral Allen provided a bi-partisan and bi-cameral briefing to Congress on the administration's all-hands-on-deck response to the spill. They updated members of Congress on the status of ongoing, coordinated response efforts in the Gulf coast states and delivered an update on BP's mitigation plans for potentially impacted Gulf Coast states.

### **Cabinet Officials Host Daily Coordination Calls with the Gulf Coast State Governors**

To ensure consistent coordination with the Gulf Coast states, Admiral Thad Allen, Secretaries Janet Napolitano and Ken Salazar, Administrator Lisa Jackson and NOAA Deputy Under Secretary Monica Medina began daily calls with the Governors from the five Gulf Coast states to provide updates on the response to the BP oil spill and answer any questions that arise. Governors Barbour, Crist, Jindal, Perry and Riley have been invited to participate in the daily calls moving forward. These daily calls are a follow up to the calls last Friday and Sunday between the Governors and the agencies involved in the federal response, as well as the calls last week between the President and the Governors and the President's visit to the region on Sunday. These calls are intended to further the already unprecedented cooperation and focused effort between state and local officials and the federal government in response to this situation.

### **National Guard Activation**

Secretary Gates has authorized use of Title 32 status for up to 17,500 National Guard members in four states: Alabama (3,000), Florida (2,500), Louisiana (6,000) and Mississippi (6,000).

The state of Louisiana has activated approximately 1,200 National Guard members under Title 32 for command and control and sandbagging operations in St Bernard and Plaquemines parishes. Louisiana National Guard personnel are actively manning the Joint Operations Center and Tactical Aviation Cell.

### **20 More Vessels and 4,500 Responders Are Deployed to the Gulf Coast**

The response continues to mobilize and move more resources into the gulf to support BP, the responsible party, and apply federal resources to mitigate environmental damage, including moving 20 more vessels to the area and deploying an additional 4,500 responders

### **Air Quality Monitoring**

EPA's Air Quality Index (AQI) tracks levels of particulate matter and ozone along the Gulf Coast—data available publicly daily at <http://www.airnow.gov> and <http://gulfoast.airnowtech.org>. In addition to these monitors, EPA's emergency response teams have put up multiple monitoring stations to track larger particulate matter. The location of these monitoring stations is flexible as conditions change during this response.

The next in a daily series of press briefings was conducted between the Minerals Management Service (MMS), the Coast Guard, NOAA, BP and Transocean at the Joint Information Center in Robert, La., as well as daily legislative and intergovernmental calls.

### **Assets To Date—20 More Vessels and 4,000 Responders Arrive**

*Total response vessels: nearly 200*

*Boom deployed: 367,881 feet*

*Boom available: more than 1 million feet*

*Oily water recovered: more than 1 million gallons*

*Dispersant used: nearly 160,000 gallons*

*Dispersant available: 230,000 gallons*

*Overall personnel responding: approximately 7,500*

## **WEDNESDAY, MAY 5**

### **Secretary Salazar Gulf Coast Visit**

Secretary of the Interior Ken Salazar surveyed ongoing response efforts to combat the BP oil spill in the Gulf of Mexico, inspecting the four-story cofferdam that will attempt to capture the largest leak from the damaged wellhead; making an aerial survey of containment and cleanup efforts underway on Gulf waters; and visiting national wildlife refuges on the Louisiana and Alabama coast to assess on-the-ground efforts to protect sensitive areas.

### **Successful Controlled Burn**

Favorable weather conditions allowed responders to conduct a successful controlled burn operation. As part of a coordinated response that combines tactics deployed above water, below water, offshore, and close to coastal areas, controlled burns efficiently remove oil from the open water in an effort to protect shoreline and wildlife.

### **NASA Satellite Assets**

At NOAA's request, NASA has agreed to use their ER-2 aircraft, equipped with a highly specialized scanner (the Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) system) to provide NOAA high resolution images of the threatened Gulf shoreline. This will assist valuable NOAA's damage assessment activities by forecasting spill trajectories and conducting mass balance calculations. Additionally, NASA has employed satellite instruments both to detect the extent of the entire oil spill, and to see the details of the extent of selected areas of the spill.

### **Additional Staging Location**

A 10th staging location was established in Panama City, Fla., joining nine others in Biloxi, Miss., Pensacola, Fla., Pascagoula, Miss., Dauphin Island, Ala., Port Sulphur, La., Shell Beach, La., Slidell, La., Port Fourchon, La., and Venice, La.

### **Aerial Dispersant Spray Missions**

Modular Aerial Spray System (MASS) aircraft flew four missions—dispensing the same dispersant chemical being used by BP and the federal responders. These systems are capable of covering up to 250 acres per flight.

### **Seafood Inspection**

NOAA Fisheries continues to collect seafood samples and transfer those to the National Seafood Inspection Lab.

### **NOAA Ocean and Marsh Imaging Flights**

Two NOAA turbo-prop aircraft are positioned in Mobile, Ala. One will fly marine mammal survey missions—the second aircraft will conduct ocean imaging missions, providing valuable information about the oil thickness and density on the sea surface. A third NOAA aircraft is positioned in New Orleans and staged to conduct aerial photographic flights of marsh areas.

### **Ocean Exploration Mission**

A NOAA Office of Ocean Exploration and Research-sponsored mission is en route to collect seafloor and water column data from areas near the oil spill source.

### **National Park Service Response Website**

The National Park Service created an oil spill response website, available at <http://www.nps.gov/aboutus/oil-spill-response.htm>, to update the public about potential park closures, resources at risk, and NPS actions to protect vital park space and wildlife.

*Total response vessels: nearly 200*

*Boom deployed: 564,991 feet (regular plus sorbent boom)*

*Boom available: 1.6 million feet (regular plus sorbent boom)*

*Oily water recovered: more than 1.2 million gallons*

*Dispersant used: more than 190,000 gallons*

*Dispersant available: more than 55,600 gallons*

*Overall personnel responding: approximately 7,900*

### **THURSDAY, MAY 6**

#### **Top Officials Visit Gulf Coast**

Top administration officials traveled to the Gulf Coast at the direction of the President to meet with federal, state and local officials, as well as local business leaders, as part of their continued oversight of BP's efforts to plug the leak and contain the spill, and their ongoing emphasis on interagency coordination in response to the event.

Secretary Napolitano and Secretary Locke visited to Biloxi, Miss., and Pensacola, Fla., to inspect response operations, meet with state, local and private sector leaders, and view firsthand staging areas for the deployment of boom to protect vital shoreline from the oil spill. Administrator Lubchenco accompanied the group to Biloxi, then joined White House Council on Environmental Quality Chair Nancy Sutley in Pascagoula, Miss., to tour NOAA's seafood inspection lab.

Secretary Salazar visited the Mobile Command Center in Mobile, Ala., to observe response efforts and talk with responders about ongoing operations and mitigation plans. He also met with BP Officials at their command center in Houston to get an update on BP's efforts to close down their leaks.

EPA Deputy Administrator Bob Perciasepe traveled to Louisiana, where he reviewed EPA's ongoing air and water monitoring activities, met with local and community leaders, and assessed the environmental situation on the ground.

#### **Low-Interest Loans for Small Businesses**

Small Business Administration Administrator Karen Mills announced the agency is making low-interest loans available to Louisiana Gulf Coast small businesses suffering financial losses following the oil spill, which shut down commercial and recreational fishing along the state's southeast coast—acting under the SBA's authority to offer economic injury assistance in response to a May 4 request from Gov. Bobby Jindal.

#### **NOAA Mission Redirected for Oil Spill Response**



A NOAA-sponsored ocean mission, set to explore for deep sea corals, has been redirected to collect seafloor and water column data from areas near the Gulf of Mexico oil spill source. Researchers from the National Institute for Undersea Science and Technology are on a university research ship to obtain core sediment samples from the seafloor and water samples from the water column in areas near the spill source. The samples are expected to provide important information about the abundance of marine organisms and the presence of chemicals in ocean water and sediments—information for a baseline against which to measure change if those areas are affected by sinking oil.

### **Oil Reaches Shoreline**

Shoreline Cleanup and Assessment Teams (SCAT)—federal, state and BP officials working to assess and determine how cleanup will be conducted, and oversee cleanup operations—confirmed that oil was found on the beach at Chandeleur Islands, a small group of uninhabited barrier islands off the northeast of the Mississippi Delta. The Chandeleur Islands are part of the Breton National Wildlife Refuge.

### **Successful Controlled Burn**

Favorable weather conditions allowed responders to conduct a successful controlled burn operation for the second consecutive day. As part of a coordinated response that combines tactics deployed above water, below water, offshore, and close to coastal areas, controlled burns efficiently remove oil from the open water in an effort to protect shoreline and wildlife.

### **Emergency Response Stockpiles Arrive**

More than 80 flatbed trucks carrying Emergency Ship Salvage Material supplies—part of a managed network of emergency response equipment stockpiles pre-positioned to support and augment U.S. Navy Fleet capabilities to respond to pollution and other events—have arrived at staging areas for immediate deployment.

### **Cofferdam Drill Ship Inspection Completed**

MMS completed its production system inspection for the drill ship Discoverer Enterprise—the vessel that will be used to operate the cofferdam system and process the oily water pumped from the riser plume.

### **CDC Toxic Substance Monitoring**

The Center for Disease Control and Prevention (CDC) National Center for Environmental Health and Agency for Toxic Substances and Disease Registry are monitoring the gulf oil spill and offering assistance as needed to lead federal agencies and impacted states and communities.

### **Oil Cleanup Worker Health & Safety Training**

National Institute of Environmental Health Sciences is working with BP contractors to provide technical assistance in development and deployment of health and safety training to workers.

### **New Weather Forecast Website**

NOAA's National Weather Service has created a special forecast website, available at <http://www.srh.noaa.gov/lix/>.

### **NOAA Aircraft Missions**

NOAA aircraft flew marine mammal survey missions and ocean imaging missions—providing valuable information about the oil thickness and density on the ocean surface.

### **NPS Incident Management Teams**

The National Park Service has activated two incident management teams in the Gulf. Many other park service employees in the area are supporting the response with technical information and assistance.

### **Aerial Dispersant Spray Missions**

Modular Aerial Spray System (MASS) aircraft flew numerous dispersant missions—dispensing the same dispersant chemical being used by BP and the federal responders. These systems are capable of covering up to 250 acres per flight. To ensure nearby residents are informed and protected, the EPA is constantly monitoring air quality in the Gulf area through air monitoring air craft, and fixed and mobile air stations.

*Total response vessels: nearly 270*

*Boom deployed: approximately 750,000 feet (regular plus sorbent boom)*

*Boom available: 1.4 million feet (regular plus sorbent boom)*

*Oily water recovered: more than 1.8 million gallons*

*Dispersant used: more than 253,000 gallons*

*Dispersant available: more than 317,000 gallons*

*Overall personnel responding: more than 10,000*

### **FRIDAY, MAY 7**

#### **Deploying and Activating the Cofferdam**

The Unified Area Command is carefully tracking the complicated procedure to assemble a subsea capture system that would entail pumping leaking oil up to a vessel on the surface.

#### **Offshore Drilling Permit Applications Halted**

Secretary Salazar announced that, as a result of the Deepwater Horizon explosion and spill, beginning April 20—the date of the explosion—no applications for drilling permits will go forward for any new offshore drilling activity until the Department of the Interior completes the safety review process that President Obama requested. In accordance with the President's request, the Department will deliver its report to the President by May 28. The only exceptions to the new rule regarding permit approvals are the two relief wells that are being drilled in response to the Deepwater Horizon disaster.

#### **Expanded Fishing Restriction**

NOAA has modified and expanded the boundaries of the closed fishing area to better reflect the current location of the oil spill, and is extending the fishing restriction until May 17. The closed area now represents slightly less than 4.5 percent of Gulf of Mexico federal waters. The original closure boundaries, which took effect last Sunday, encompassed less than three percent. This leaves many areas that are still available for fishing. The vast majority of Gulf waters has not been affected by the oil spill and continues to support productive fisheries and tourism activities. NOAA Administrator Jane Lubchenco and her staff will continue to meet with fishermen in the oil-affected area to listen to their concerns and share with them what NOAA scientists have learned so far about how the oil might be affecting their potential seafood catch.

## **Fish & Wildlife Monitoring**

More than 160 Fish & Wildlife Service personnel are involved in the oil spill response in Louisiana, Mississippi, Alabama and the west coast of Florida. Shoreline Cleanup Assessment Teams (SCAT) continue to assess and determine how cleanup will be conducted, and oversee cleanup operations.

FWS personnel continue to conduct overflights of the Chandeleur Islands today to monitor the status of the brown pelican colonies. FWS closed the Breton National Wildlife Refuge to public entry. The refuge closure is important to keep the public safe, to minimize disturbance to nesting colonial sea birds, and to allow personnel conducting cleanup operations and recovery efforts to work safely and efficiently.

## **Emergency Food Support**

USDA's Food and Nutrition Service (FNS) met with Louisiana food bank directors to discuss potential need for USDA food support and to assess inventory that might be available for distribution to affected areas. FNS was informed that BP has made a \$100,000 contribution to assist with local emergency food needs. FNS discussed income eligibility of potential Louisiana women, infants and children affected by the oil spill with the State of Louisiana.

## **Secretary Salazar Oversight Activities**

Secretary Salazar continued his oversight activities in a meeting with BP officials in Houston today and met with the manufacturers of the Blowout Preventer (BOP) device to discuss the damaged wellhead. The BOPs contain mechanisms designed to shut off the flow of oil and gas, either on command or automatically, when a wellhead is damaged or experiences a blowout. Federal and company engineers are seeking to determine why the BOP atop the Deepwater Horizon well failed to activate as designed.

Secretary Salazar directed U.S. Geological Survey Director Dr. Marcia McNutt to remain at BP's command center to help coordinate the joint efforts of federal scientists and BP engineers who are working on several technological challenges and approaches to securing the damaged well head, capturing the leak and controlling the spill.

## **Aerial Dispersant Missions**

Modular Aerial Spray System (MASS) aircraft flew multiple missions—dispensing the same dispersant chemical being used by BP and the federal responders. These systems are capable of covering up to 250 acres per flight.

## **Successful Controlled Burn**

Favorable weather conditions allowed responders to conduct a successful controlled burn operation for the second consecutive day. As part of a coordinated response that combines tactics deployed above water, below water, offshore, and close to coastal areas, controlled burns efficiently remove oil from the open water in an effort to protect shoreline and wildlife.

*Total response vessels: nearly 270*

*Boom deployed: approximately 829,000 feet – more than 150 miles (regular plus sorbent boom)*

*Boom available: approximately 1.3 million feet (regular plus sorbent boom)*

*Oily water recovered: nearly 1.9 million gallons*

*Dispersant used: more than 282,000 gallons*

*Dispersant available: more than 317,000 gallons*

*Overall personnel responding: more than 10,000*

## **SATURDAY, MAY 8**

### **Natural Resources Impact Assessments**

Department of the Interior Assistant Secretary for Fish and Wildlife and Parks Tom Strickland and National Parks Service Director John Jarvis surveyed the impact of the oil spill on natural resources in the Gulf Islands. In total, 310 DOI personnel have been deployed as part of the oil spill response, representing the DOI Gulf Leadership Team, FWS, MMS, NPS and the DOI Office of Emergency Management.

### **U.S. Geological Survey Oil Response Team Activated**

The U.S. Geological Survey Oil Response Team was activated to communicate and coordinate daily response activities, including supplying biologic, coastal geology, hydrology and geographic data to other agencies, partners, and emergency responders.

### **Damage Assessment Activities**

NOAA's Damage Assessment Remediation and Restoration Program is coordinating an assessment of damage to natural resources with federal partners, BP (as the responsible party), and trustees in Louisiana, Alabama, Mississippi and Florida. Multiple agencies from each state are engaged. This assessment will gauge impacts to fish, shellfish, marine mammals, turtles, birds and other sensitive resources as well as their habitats, including wetlands, beaches, mudflats, bottom sediments, corals and the water column. The trustees will also assess any lost human uses of these resources, for example, fishing, hunting, and beach recreational closures. The trustees are also assessing the efficacy of evaluating impacts from the response, including burning, and dispersant use at the surface and at depth.

Natural Resource Damage Assessment (NRDA) is a legal process to determine the type and amount of restoration needed to compensate the public for harm to natural resources and their human uses that occur as a result of an oil spill. For more information, visit [here](#).

### **Expanded Low-Interest Small Business Loans**

SBA Administrator Karen Mills announced that SBA is making economic injury assistance available in 21 additional parishes for small businesses suffering financial losses following the Deepwater BP oil spill that shut down commercial and recreational fishing along the state's southeast coast. With these additions, SBA economic injury loans are now available in 34 Louisiana parishes and seven Mississippi counties.

### **Fishing Industry Engagement**

NOAA Administrator Jane Lubchenco and her staff continue to meet with fishermen in the oil-affected area to listen to their concerns and share with them what NOAA scientists have learned so far about how the oil might be affecting their potential seafood catch.

### **NOAA Observational Flights**

NOAA aircraft flew observational overflights of the oil spill, during which trained observers recorded locations of oil and affected wildlife. NOAA aircraft also flew coastal photography and mapping missions. A NOAA P-3 aircraft (one of NOAA's hurricane hunter aircraft) flew preparatory missions to calibrate trajectory models of the Gulf of Mexico Loop Current.

*Total response vessels: more than 270*  
*Boom deployed: approximately 923,000 feet (regular plus sorbent boom)*  
*Boom available: approximately 1.3 million feet (regular plus sorbent boom)*  
*Oily water recovered: nearly 2.1 million gallons*  
*Dispersant used: approximately 290,000 gallons*  
*Dispersant available: more than 185,000 gallons*  
*Overall personnel responding: more than 10,000*

## **SUNDAY, MAY 9**

### **DOI Leadership Deployments**

Secretary of the Interior Ken Salazar dispatched Director of the National Park Service Jon Jarvis and Acting Director of the Fish and Wildlife Service Rowan Gould to command centers along the Gulf Coast to help lead efforts to protect coastal communities and natural resources from oil spill. Jarvis is stationed in the Mobile, Ala., Incident Command Center, and Gould is stationed in the Houma, La., Incident Command Center.

### **Drilling Rig Inspection and Oversight**

MMS has completed its inspections of all 30 deepwater drilling rigs and is now inspecting all deepwater production platforms. The Minerals Management Service (MMS) continues to work with BP to explore all options that could stop or mitigate oil leaks from the damaged well. Pursuant to MMS's regulatory authority, all plans are being reviewed and approved by MMS before implementation.

### **Snare Booms Erected**

Cleanup crews have placed snare boom to collect tarballs in the affected area on Dauphin Island. Snare boom can be staked along beaches and shoreline to act as a filter and prevent tarballs from coming ashore. Analysis of the tarballs is being conducted to determine the origin of the oil and may take 48 hours to complete. Shoreline assessment teams typically consist of three or four trained personnel prepared to evaluate a section of shoreline, equipped with proper protective gear. Trained volunteers may assist members of the group. Team members must have basic site safety training and training sufficient to complete an evaluation of the beach. Reports of tarballs can be made to the Coast Guard at any time at 1-800-448-5816.

### **13 Staging Areas Along Gulf Coast**

13 staging areas have been set up to protect vital shoreline in all potentially affected Gulf Coast states (Biloxi, Miss., Pascagoula, Miss., Pensacola, Fla., Panama City, Fla., Dauphin Island, Ala., Grand Isle, La., Shell Beach, La., Slidell, La., Venice, La., Orange Beach, Al., Theodore, Al., Pass Christian, Ms., Cocodrie, La.).

### **NOAA Oversight Activities**

NOAA Administrator Jane Lubchenco met with scientists at the Dauphin Island (Ala.) Sea Lab and representatives from the Mobile (Ala.) Port Authority, and participated in a briefing at the Mobile Incident Command Center. NOAA continues to provide scientific support including: modeling the trajectory and location of the oil, getting pre-impact shoreline samples surveys and baseline measurements, and planning for open water and shoreline remediation.

### **NOAA Observational Flights**

One of NOAA's P-3 (hurricane hunter) aircraft conducted a flight to help monitor the location of the Gulf of Mexico Loop Current. NOAA also flew missions for marine mammal surveys, coastal photography and mapping purposes.

## **Assets to Date**

*Total response vessels: more than 275*  
*Boom deployed: more than 1 million feet (regular plus sorbent boom)*  
*Boom available: more than 1.3 million feet (regular plus sorbent boom)*  
*Oily water recovered: approximately 3.5 million gallons*  
*Dispersant used: approximately 325,000 gallons*  
*Dispersant available: more than 500,000 gallons*  
*Overall personnel responding: approximately 10,000*

## **MONDAY, MAY 10**

### **The President Meets with Cabinet Members in the Situation Room**

President Obama met with a number of Cabinet members and senior staff in the White House Situation Room to review BP's efforts to stop the oil leak as well as to decide on next steps to ensure all is being done to contain the spread, mitigate the environmental impact and provide assistance to affected states, including individuals, businesses, and communities.

The President asked Energy Secretary Stephen Chu to lead a team of top administration officials and government scientists to Houston this week for an extensive dialogue with BP officials to continue to aggressively pursue potential solutions.

In addition, to deal more generally with the harms created by oil spills, the President has requested that legislation be sent to Congress to toughen and update the law surrounding caps on damages.

### **EPA Administrator Jackson Returns to the Gulf Coast**

Administrator Jackson made another visit to the Gulf region to oversee efforts to mitigate the environmental and human health impact of the ongoing BP oil spill—visiting Baton Rouge, La., to receive a briefing by Louisiana State University scientists; and Robert, La., to receive a briefing by federal agency scientists.

### **Secretary Salazar Dispatches Top Land Management Official**

Interior Secretary Ken Salazar announced today that Director of the Bureau of Land Management Robert Abbey has been dispatched to the Gulf Coast to support ongoing response efforts to the BP Deepwater oil spill.

### **Navy Supports Skimming Operations**

The U.S. Navy is providing assistance in the areas of skimming and salvage operations—including 16 Modular Skimming Systems deployed to Gulfport, Miss. 1,400 total associated Department of Defense personnel have been deployed in support of spill cleanup and mitigation.

### **New Staging Location Opens in Amelia, La.**

14 staging areas have been set up to protect vital shoreline in all potentially affected Gulf Coast states (Biloxi, Miss., Pascagoula, Miss., Pensacola, Fla., Panama City, Fla., Dauphin Island, Ala., Grand Isle, La., Shell Beach, La., Slidell, La., Venice, La., Orange Beach, Al., Theodore, Al., Pass Christian, Ms., Amelia, La., and Cocodrie, La.).

### **Property Damage Claims Processed**

BP reports that 5,710 property damage claims have been opened, from which \$2.4 million has been disbursed. No claims have been denied at this time. Approximately 60 operators are answering phones, and average wait time is currently less than a minute. To file a claim, or report spill-related damage, call BP's helpline at (800) 440-0858. For those who have already pursued the BP claims process and are not satisfied with BP's resolution, can call the Coast Guard at (800) 280-7118.

### **NOAA Conducts Research and Evaluation**

NOAA Research is evaluating the information obtained from the NOAA P-3 (hurricane hunter) aircraft flight over the Gulf of Mexico Loop Current on May 8.

### **Lessons Learned from Exxon Valdez Examined**

Alaska and Louisiana Sea Grant personnel are meeting regularly with Alaska Oil Spill Responders to explore lessons learned from the Exxon Valdez incident and possible applications to the Deepwater Horizon. NOAA's Sea Grant is a university-based network of more than 3,000 scientists, engineers and educators.

### **Fish & Wildlife Field Crews Respond**

Eight field crews have been deployed from the Dennis Pass Wildlife Staging Area to observe the impact on wildlife due to the spill. Wildlife search and capture teams conducted boat operations from the Lake Borgne to the Southwest Pass of the Mississippi River and west to Cameron, La. Four helicopters conducted aerial surveys to observe wildlife and determine if rescue operations are needed in potentially affected areas.

### **Water and Sediment is Sampled**

The U.S. Geological Survey completed water and sediment sampling at 16 sites along coastal Alabama and Mississippi. USGS is preparing for sampling in Texas and Florida, and also for sea-grass bed surveys.

### **Plans Begin for Bioremediation**

USDA's Natural Resources Conservation Service is assessing the capabilities of Plant Materials Centers and asking commercial growers to ramp up plant propagation efforts for potential future bioremediation efforts.

### **Aerial Dispersant Spray Missions Flown**

Modular Aerial Spray System (MASS) aircraft flew multiple missions—dispensing the same dispersant chemical being used by BP and the federal responders. These systems are capable of covering up to 250 acres per flight.

### **Assets to Date**

*Total response vessels: more than 290*  
*Boom deployed: more than 1 million feet (regular plus sorbent boom)*  
*Boom available: more than 1.4 million feet (regular plus sorbent boom)*  
*Oily water recovered: approximately 3.6 million gallons*  
*Dispersant used: approximately 372,000 gallons*  
*Dispersant available: more than 180,000 gallons*  
*Overall personnel responding: approximately 10,000*

### **TUESDAY, MAY 11**

## **Interior Department Announces Reforms to Enhance Oil and Gas Oversight**

As part of an ongoing agenda to change the way the Department of the Interior does business, Secretary of the Interior Ken Salazar announced a set of reforms that will provide federal inspectors more tools, more resources, more independence, and greater authority to enforce laws and regulations that apply to oil and gas companies operating on the Outer Continental Shelf.

Salazar has also enlisted the National Academy of Engineering to provide a set of fresh eyes on the issues surrounding the *Deepwater Horizon* incident and an independent, science-based understanding of what happened.

## **NOAA Modifies Fishing Closed Areas in Gulf; 93 Percent Remains Open**

NOAA's Fisheries Service modified the area closed to fishing in the Gulf of Mexico due to the spill, which will include federal waters seaward of Louisiana state waters in the vicinity of Timbalier Island to waters off Florida's Choctawhatchee Bay. These changes will leave more than 93 percent of the Gulf's federal waters open for fishing, and supporting productive fisheries and tourism.

NOAA also will expedite updates to the areas closed to fishing in the Gulf of Mexico, as well as public notice of those changes. The closure process is being improved to cut down on the red tape necessary to modify the boundaries of the closure area. Area boundaries could be modified daily, based on where and how fast the oil spill is moving. NOAA will provide daily updates at <http://sero.nmfs.noaa.gov> by 12 p.m. EDT.

## **Scientific Assets Continue to Join the Response**

NASA mobilized its remote-sensing assets to help assess the spread and impact of the Deepwater Horizon BP oil spill in the Gulf of Mexico at the request of U.S. disaster response agencies. NASA has deployed its instrumented research aircraft the Earth Resources-2 (ER-2) to the Gulf. The agency is also making extra satellite observations and conducting additional data processing to assist the National Oceanic and Atmospheric Administration, the U.S. Geological Survey, and the Department of Homeland Security in monitoring the spill.

## **Top Fisheries Scientist Dispatched**

As part of its ongoing efforts to protect consumers, NOAA is sending one of its top fisheries science directors to the Gulf this week to lead its effort to rapidly assess, test and report findings about risks posed to fish in the Gulf of Mexico by contaminants from the BP oil spill and clean-up activities.

NOAA's Northeast Fisheries Science Center (NEFSC) Director Nancy Thompson, Ph.D., will head to Pascagoula, Miss., to lead NOAA's response team. Thompson will work closely with Bonnie Ponwith, Ph.D., the director at the agency's Southeast Fisheries Science Center, who is leading an intensified effort to monitor and assess the spill's effects on important species in the Gulf of Mexico.

Asian American and Pacific Islander Community Liaison Dispatched

White House Initiative on Asian Americans and Pacific Islanders Advisor on Community Engagement Miya Chen is joining the Area Unified Command Center in Robert, La., to assess the immediate needs of the Asian American community.

The Department of Labor's Occupational Safety and Health Administration (OSHA) and NIEHS are monitoring BP and its contractors to ensure that every worker receives necessary training in the worker's language, as OSHA regulations require.



The National Institute for Environmental Health Sciences (NIEHS) is collaborating with BP to provide Vietnamese-language translators and trainers. Vietnamese, Cambodian and Taiwanese translations of the BP Vessels of Opportunity fishing contracts is being provided at the Venice Community Center. BP has hired a local Vietnamese American liaison officer and is contracting additional office support and translation.

#### **OSHA Develops Multi-Lingual Worker Guides**

OSHA is developing pocket-sized health and safety guides for cleanup workers and volunteers. Guides available in English should be ready by this weekend and guides in Spanish and Vietnamese should be ready for distribution early next week.

#### **Leak Plug Tactic Approved by MMS**

MMS approved the methanol injection to prevent hydrate formation in the "top hat" structure. The top hat should be on site by mid-week after modifications are made.

#### **DOD Transports Boom and Equipment from Alaska**

Following approval by Secretary of Defense Robert Gates for assistance, several commercial aircraft and numerous C-17 aircraft commenced missions to transport 150,000 feet of BP pollution response boom and approximately 250 short tons of Navy salvage equipment commenced movement from Anchorage, Alaska, to New Orleans.

*Total response vessels: more than 460*  
*Boom deployed: approximately 1.4 million feet (regular plus sorbent boom)*  
*Boom available: approximately 1.5 million feet (regular plus sorbent boom)*  
*Oily water recovered: approximately 4 million gallons*  
*Dispersant used: approximately 430,000 gallons*  
*Dispersant available: more than 120,000 gallons*  
*Overall personnel responding: approximately 13,000*

#### **WEDNESDAY, MAY 12**

#### **The President Introduces Legislation to Enhance the Response**

As part of the administration's commitment to pursue full compensation for damages from BP and other responsible parties, the President sent a legislative package to Congress that will enable the Deepwater BP Oil Spill response to continue expeditiously, speed assistance to people affected by this spill, and strengthen and update the oil spill liability system to better address catastrophic events.

While the President's proposal will ask for additional funds in some cases, the federal government will not relent in pursuing full compensation for the expenses it has incurred, and for damage caused by the spill. The President has been clear from the beginning: his Administration will not rest until the leak is contained and cleaned up. To learn more about the President's proposed legislation, please visit this site: [Fact Sheet: Deepwater Horizon Oil Spill Legislative Package](#)

#### **Top Officials Spearhead Efforts to Find Innovative Solutions to Plug Leak**

At the request of the President, Secretary Salazar and Secretary Chu traveled to Houston to participate in meetings with DOE and national lab staff, industry officials and other engineers and scientists involved in finding solutions to cap the flow of oil and contain the spill. Secretary Salazar and Secretary Chu conferred at the BP Command Center in Houston with teams of federal and industry scientists and engineers who are using cutting-edge technological

resources and innovative ideas to find solutions to containing the oil spill and protecting Gulf Coast communities.

#### **Town Hall Meeting Held with Minority Business Owners**

The Minority Business Development Agency and the Asian Chamber of Commerce of Louisiana hosted a town hall meeting with Vietnamese American community-based organizations and local business development organizations; the Small Business Administration Disaster Relief Team; and others, to share information with fisherman, shrimpers and crew members and discuss their rights and privileges as minority business owners in regards to the oil spill.

#### **Top Oceans and Atmosphere Official is Sworn In and Immediately Deployed to Gulf**

Dr. Larry Robinson was sworn in this week as assistant secretary of commerce for oceans and atmosphere at NOAA, and has already arrived on the Gulf Coast. He conducted an over flight of the oil spill area and received operational updates at the Robert, La., Incident Command Center, NOAA's National Weather Service office in Slidell, La., and was briefed on NOAA's seafood inspection efforts in Mississippi.

#### **Secretary Salazar Dispatches National Parks Superintendent**

Secretary Salazar dispatched Superintendent of Everglades and Dry Tortugas National Parks Dan Kimball to the new Command Center in St. Petersburg, Fla., to help lead efforts to protect coastal communities and natural resources from the Deepwater Horizon oil spill.

Superintendent Kimball, a 24-year veteran of the National Park Service, is joining other members of Interior's senior leadership team dispatched over the last two weeks to command centers along the Gulf coast. Kimball is among the more than 410 DOI personnel who have been deployed as part of the oil spill response.

#### **Community Town Hall Held in Ocean Springs, Miss.**

Today, representatives from Coast Guard, EPA, NOAA, the Department of the Interior, the Department of Labor, the Agency for Toxic Substance and Disease Registry and BP participated in a town hall meeting in Ocean Springs, Mississippi to provide an update on the response to Deepwater Horizon BP oil spill and continue the dialogue with members of the community, local business leaders and other organizations.

#### **Oversight Continues of BP's Containment Efforts**

MMS reports that significant progress has been made by BP on the construction of the "top hat" containment system. The "top hat" has been placed on the seabed and the Drill Ship Enterprise is constructing and lowering the riser piping that will bring the captured oil to the surface. MMS also reports that the drill ship drilling the second relief well is en route to the drill site to begin drilling preparations. Gas and oil production from the Gulf of Mexico remains near normal with few adverse impacts to other operators from the oil spill.

#### **Bottlenose Dolphin Studies Conducted**

NOAA's National Centers for Coastal Ocean Science and NOAA Fisheries Southeast Fisheries Science Center are conducting bottlenose dolphin studies in Mississippi and Louisiana. The samples will be used to evaluate baseline levels of exposure to oil and other environmental contaminants. The team will be working near Grand Isle, La., and in Mississippi Sound.

#### **NOAA Continues to Provide State-of-the-Art Modeling**

NOAA Air Resources Laboratory is providing its HYSPLIT forecast air dispersion model—a model that projects the trajectory of airborne particles—to support National Weather Service smoke forecasts from controlled burn operations.

NOAA's National Geophysical Data Center is providing coastal digital elevation models (DEMs) for the Gulf area. DEMs use coastal sea floor depth and land elevation data which then provides information about the likely movement of the ocean as it approaches the coastal area.

*Total response vessels: more than 510*

*Boom deployed: approximately 1.5 million feet (regular plus sorbent boom)*

*Boom available: approximately 1.5 million feet (regular plus sorbent boom)*

*Oily water recovered: approximately 4 million gallons*

*Dispersant used: approximately 436,000 gallons*

*Dispersant available: more than 120,000 gallons*

*Overall personnel responding: approximately 13,000*

## **THURSDAY, MAY 13**

### **Secretary Salazar Announces First Steps in MMS Restructuring**

As the federal government continues its relentless response to the Deepwater BP Oil Spill and investigates the cause of the explosion and oil spill, Secretary Salazar directed Assistant Secretary for Policy, Management and Budget Rhea Suh and Senior Advisor Chris Henderson to oversee a restructuring of the Minerals Management Service that will ensure the independence of the agency's inspections and enforcement mission.

Secretary Salazar also sent a letter to Congressional leaders asking for their ideas and input on his plan to reform the agency.

### **Officials Inspect Rig Preparing to Drill Relief Well**

National Incident Commander and Coast Guard Commandant Admiral Thad Allen and Federal On-Scene Coordinator Rear Admiral Mary Landry inspected the Development Driller II, which is set to begin drilling the second relief well shortly to permanently cap the leaking well.

### **BP's "Top Hat" Containment System Approaches Completion**

MMS reports that BP has approached completion of the "top hat" containment system, and expects an update from BP as early as tomorrow on its operational status.

### **Community Town Hall Held in Port Sulpher and Dulac, La.**

Representatives from the Coast Guard, EPA, NOAA, the Department of the Interior, the Department of Labor, the Agency for Toxic Substance and Disease Registry and BP participated town hall meetings in Port Sulpher and Dulac, La., to provide an update on the response to the oil spill and continue the dialogue with members of the community, local business leaders and other organizations.

### **Shoreline Cleanup Teams Continue to Assess Impact**

Shoreline Cleanup and Assessment Teams (SCAT) surveyed 19 miles of Dauphin Island, Ala., and the Jackson

County shoreline with minimal tarball findings. An additional five teams were deployed to Bon Secour National Wildlife Refuge to recover tarballs.

The Department of the Interior has deployed 568 total personnel to the affected area to assist in cleanup, wildlife protection and rehabilitation, and shoreline assessment efforts.

### **Unified Area Command Continues to Build Web and New Media Engagement**

The Unified Area Command in Robert, La., continues to grow its public engagement via its website ([www.deepwaterhorizonresponse.com](http://www.deepwaterhorizonresponse.com)), which has received more than 19 million hits since it was launched on April 23, as well as Facebook (18,277 users) and Twitter (3,707 followers). These resources contain information about response efforts, jobs, volunteer opportunities, impacts to wildlife and other important public information.

### **DOD Aircraft Conduct Dispersant Spray Missions**

The Department of Defense's Modular Aerial Spray System (MASS) aircraft flew multiple missions—dispensing the same dispersant chemicals being used by BP and federal responders. These systems are capable of covering up to 250 acres per flight, and flights are coordinated with the EPA and the State of Louisiana to ensure all environmental concerns are addressed. Since MASS flights began on May 1, a total of 47 missions have been flown and nearly 70,000 gallons of dispersant have been applied.

### **National Guard Support Continues to Build**

1,304 National Guard personnel are currently supporting oil response—952 from the Louisiana National Guard are providing Command and Control and sandbagging support to St. Bernard and Plaquemines parishes, supporting marina operations and conducting HAZMAT training; 323 from the Alabama National Guard are deploying protective barriers around Dauphin Island and conducting sandbag and security operations; 25 from the Mississippi National Guard personnel are providing helicopter support and liaison officers to aid local officials with emergency response; and four from the Florida National Guard are performing liaison duties in support of the response effort to the Unified Command Center in Alabama and to its own emergency operations center in Tallahassee.

### **Five Oil Platforms Have Been Evacuated to Ensure Health and Safety**

A total of five platforms have been evacuated in order to ensure the safety and health of rig workers. Estimated oil production shut-in is 2,300 barrels a day (0.14 percent of the Gulf's oil production) and approximately 1.2 million cubic feet of gas (0.02 percent of the Gulf's gas production).

### **Joint Bird Rescue Operations Are Dispatched**

U.S. Fish and Wildlife Services and the National Parks Services dispatched a joint boat operation to Horn Island, Miss., to recover potentially oiled wildlife and transport them to a wildlife rehabilitation center for treatment. Treatment and rehabilitation operations are also ongoing on Chandeleur Island.

*Total response vessels: more than 520  
Boom deployed: approximately 1.5 million feet (regular plus sorbent boom)  
Boom available: approximately 1 million feet (regular plus sorbent boom)  
Oily water recovered: more than 5 million gallons  
Dispersant used: approximately 475,000 gallons  
Dispersant available: more than 215,000 gallons  
Overall personnel responding: approximately 13,000*

**FRIDAY, MAY 14**

### **President Obama Holds Principals Meeting and Updates Public on Response**

The President met with members of his Cabinet and other senior administration officials to determine next steps in the ongoing effort to stop the BP oil spill, contain its spread, and help affected communities. He also provided an update to the American people—stressing the seriousness and urgency of the situation by stating that he will not be satisfied until the leak is stopped at the source, the oil in the Gulf is contained and cleaned up, and the people of the Gulf are able to go back to their lives and their livelihoods.

The President emphasized that the administration-wide mobilization and response efforts have always been geared toward the possibility of a catastrophic event, no matter how large the leak. He stressed that every available resource is being used to stop the oil from coming ashore. The President also asked for prompt action on the legislation sent to Congress that would provide additional resources to mitigate the damage caused by the spill, help with cleanup efforts, provide unemployment assistance and job training to folks whose jobs are affected by this crisis, and help with the region's economic recovery.

In addition, the President announced that there will now be a new examination of the environmental procedures for oil and gas exploration and development and reaffirmed his commitment to putting in place every necessary safeguard and protection to ensure that a tragedy like this does not happen again—a responsibility shared by all parties involved, including the oil companies, the equipment manufacturers, and the federal government. He asserted that Gulf Coast residents deserve nothing less than for the federal government to do whatever is necessary to stop the spill, prevent further damage and ensure all who have already been harmed are compensated.

### **Review is Launched to Examine Environmental Procedures of Oil and Gas Exploration**

The Council on Environmental Quality and the Department of the Interior announced a review of the National Environmental Policy Act procedures for the Minerals Management Service (MMS), the bureau in DOI that manages the nation's natural gas, oil and other mineral resources on the outer continental shelf (OCS). The review will examine the MMS NEPA procedures for OCS oil and gas exploration and development

### **Coast Guard and BP Officials Brief Local Elected Officials**

Officials from the U.S. Coast Guard and BP briefed local elected officials from Mobile County and Baldwin County, Ala., on shore cleanup plans.

### **Admiral Allen Meets with Local Responders**

National Incident Commander and Coast Guard Commandant Admiral Thad Allen met with local responders—bouy tenders and Shoreline Cleanup Assessment (SCAT) Teams—at staging areas in Dauphin Island, Ala. and Biloxi, Miss.

### **DOD Aircraft Conduct Dispersant Spray Missions**

The Department of Defense's Modular Aerial Spray System (MASS) aircraft flew multiple missions—dispensing the same dispersant chemicals being used by BP and federal responders. These systems are capable of covering up to 250 acres per flight, and flights are coordinated with the EPA and the State of Louisiana to ensure all environmental concerns are addressed.

### **DOD Supply Transport Completed**

The transport of 150,000 feet of BP pollution response boom and approximately 250 short tons of Navy salvage equipment from Anchorage, Alaska, to the Gulf Coast was completed as the two remaining C-17 lift missions—authorized by Secretary of Defense Robert Gates—arrived in New Orleans.

### **Wildlife Surveillance and Recovery Teams Search for Impacted Wildlife**

Eight joint surveillance and recovery teams were deployed via air, land, and sea. Two helicopter surveys were conducted. Typical marine birds (pipers, gulls, pelicans, herons, osprey) were observed in the normal clumped pattern along the shoreline. No evidence of oiled shoreline or oiled wildlife was observed by aerial operations.

### **Preparations Continue for Drilling of Second Relief Well**

MMS reports the Development Driller II arrived at a temporary location approximately five miles from the drill site to load materials required to position the vessel and begin drilling the well. MMS expects the vessel will move to the drill location within the next 24-48 hours and prepare to begin drilling.

### **Additional Funds are Authorized for Pollution Removal Efforts**

MMS successfully amended its Pollution Removal Fund Authorization to cover response operations through May 17 with a maximum value of \$1 million. This agreement may be amended as the response situation warrants.

### **Boom Quality Flights Continue**

U.S. Fish and Wildlife Service personnel are working with BP to ensure overflights occur twice daily in the morning and evening to check that booming is deployed appropriately and any required maintenance is completed quickly.

### **Plans Begin for Potential Manatee Monitoring and Potential Rescue**

The U.S. Geological Survey is working with the Florida Fish and Wildlife Research Institute on a plan for potential manatee rescues and monitoring (by aerial surveys), in coordination with NOAA and FWS in Florida, Alabama and Louisiana. Crews collected water and sediment samples at four sites in Louisiana and seven sites in the Florida panhandle.

### **Scientists Conduct Studies on Subsurface Oil**

The NOAA Research-funded mission of the R/V Pelican is back at the spill site with six scientists from National Institute for Undersea Science and Technology and currently engaged in efforts to learn more about subsurface oil.

### **Teams Continue Shoreline Cleanup and Assessments**

SCAT teams surveyed 19 miles of Dauphin Island, Ala., and the Jackson County shoreline with minimal tarball findings. An additional five teams were deployed to Bon Secour National Wildlife Refuge (Ala.) to recover tarballs.

*Total response vessels: nearly 560  
Containment boom deployed: more than 1.2 million feet  
Containment boom available: approximately 200,000 feet  
Sorbent boom deployed: more than 380,000 feet  
Sorbent boom available: more than 870,000 feet  
Oily water recovered: more than 5 million gallons*

*Dispersant used: more than 517,000 gallons  
Dispersant available: more than 250,000 gallons  
Overall personnel responding: approximately 17,000*

## **SATURDAY, MAY 15**

### **Secretaries Napolitano and Salazar Seek Clarification of BP's Redress Intentions**

Secretary Napolitano and Secretary Salazar sent a letter to BP CEO Tony Hayward publicly holding BP's feet to fire. As the President said yesterday, this administration is committed to ensuring that those affected are compensated. The Secretaries reiterated that as a responsible party for this event, BP is accountable to the American public for the full clean up of this spill and all the economic loss caused by the spill and related events.

### **Coast Guard and EPA Approve Use of Dispersant Subsea**

The U.S. Coast Guard and U.S. Environmental Protection Agency (EPA) announced they have authorized BP to use dispersants underwater, at the source of the Deepwater Horizon leak. Oil spill dispersants are chemicals that attempt to break down the oil into small drops and prevent it from reaching the surface or the U.S. shoreline. Dispersants are generally less harmful than the highly toxic oil leaking from the source and biodegrade in a much shorter time span.

The use of the dispersant at the source of the leak represents a novel approach to addressing the significant environmental threat posed by the spill. Preliminary testing results indicate that subsea 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 is an important step to reduce the potential for damage from oil reaching fragile wetlands and coastal areas.

This course of action was decided upon with thorough evaluation and consideration of many factors as well as consultation with stakeholders. While BP pursues the use of subsea dispersants, the federal government will require regular analysis of its effectiveness and impact on the environment, water and air quality, and human health through a rigorous monitoring program. EPA's directive to BP, including the monitoring plan the company must adhere to in order to ensure the protection of the environment and public health, is publicly available at [www.epa.gov/bpspill/dispersants](http://www.epa.gov/bpspill/dispersants).

### **Secretary Salazar Visits Wildlife Rehabilitations Center**

Secretary Salazar visited Fort Jackson Wildlife Rehabilitation Center in Buras, La., today to examine efforts being undertaken by the U.S. Fish and Wildlife Service and its partners to protect and rehabilitate wildlife affected by the BP oil spill. Salazar also visited the Unified Area Command facility in Robert, La., for a briefing.

### **Fishing Restrictions Extended; More Than 92 Percent Remains Open**

NOAA Fisheries revised the federal fishery closure boundaries late on May 14. The new closure is a precautionary measure to ensure public safety and assure consumer confidence of Gulf of Mexico seafood. These changes will leave more than 92 percent of the Gulf's federal waters open for fishing, and supporting productive fisheries and tourism. More details can be found [here](#).

### **Staging Area Total Grows to 17**

17 staging areas are in place and ready to protect sensitive shorelines, including: Dauphin Island, Ala., Orange Beach, Ala., Theodore, Ala., Panama City, Fla., Pensacola, Fla., Port St. Joe, Fla., St. Marks, Fla., Amelia, La.,

Cocodrie, La., Grand Isle, La., Shell Beach, La., Slidell, La., St. Mary, La.; Venice, La., Biloxi, Miss., Pascagoula, Miss., and Pass Christian, Miss.

### **Progress Made in Relief Well Drilling Preparations**

The Development Driller III, which will dig the first relief well, is lowering the blowout preventer stack and riser. The reported depth was nearly 3,000 feet as of 7 p.m. EDT on Friday, May 14. After initial review by MMS, BP revised and resubmitted the Application for Permit to Drill the second relief well, which will be undertaken by the Development Driller II—which is on location and making preparations for initiating the drilling process.

### **Wildlife Hotline Taking Calls**

The Wildlife Hotline has received a total of 17 calls for birds, fish, marine mammals, and reptiles which have not been confirmed. The Wildlife Rehabilitation Centers in Mississippi, Alabama, and Florida have received wildlife and have been conducting to treatment and rehabilitation.

### **Water Contamination Devices Installed in Everglades**

A National Park Service crew installed three Semi-Permeable Membrane Devices in the Gulf Coast District of Everglades National Park to detect contamination in the water.

### **Mussel Watch Team is Dispatched**

A NOAA Mussel Watch team has been sent to the Gulf to collect mussel samples, including oyster tissue, sediments, and water from Atchafalaya Bay, La., west to the Brazos River, Texas. The team has partnered with the Louisiana Department of Fish and Game to collect remaining sites in Louisiana, and will then work with the NMFS Galveston Laboratory to collect sites along the Texas coast. Mussel Watch is the longest continuous contaminant monitoring program in U.S. coastal waters.

### **NOAA Research Ship Re-Deployed to Spill Response**

The NOAA Ship Gordon Gunter, previously scheduled to conduct plankton research in the Gulf of Mexico, is now providing information for oil spill related research.

*Total response vessels: more than 620*  
*Containment Boom deployed: more than 1.25 million feet*  
*Containment boom available: more than 270,000 feet*  
*Sorbent boom deployed: more than 415,000 feet*  
*Sorbent boom available: more than 900,000 feet*  
*Oily water recovered: more than 6.3 million gallons*  
*Dispersant used: more than 560,000 gallons*  
*Dispersant available: more than 260,000 gallons*  
*Overall personnel responding: nearly 17,500*

### **SUNDAY, MAY 16**

### **Riser Insertion Tube Leak Mitigation Tactic is Tested**

The Unified Area Command reports that overnight the Riser Insertion Tube Tool was successfully tested and inserted into the leaking riser, capturing some amounts of oil and gas. The oil was stored on board the Discoverer Enterprise drill ship 5,000 feet above on the water's surface, and natural gas was burned through a flare system on



board the ship.

The test was halted temporarily when the tube was dislodged, but technicians have fully inspected the system and have re-inserted the tool. While not collecting all of the leaking oil, this tool is an important step in reducing the amount of oil being released into Gulf waters

Secretary Salazar and Secretary Napolitano issued a joint statement on these efforts: "Today, BP attempted another test to contain some of the oil leaking from the riser. This technique is not a solution to the problem, and it is not yet clear how successful it may be. We are closely monitoring BP's test with the hope that it will contain some of the oil, but at the same time, federal scientists are continuing to provide oversight and expertise to BP as they move forward with other strategies to contain the spill and stop the flow of oil. We will not rest until BP permanently seals the wellhead, the spill is cleaned up, and the communities and natural resources of the Gulf Coast are restored and made whole."

### **Progress Made in Relief Well Drilling Preparations**

MMS reports the Development Driller III, which will drill the first relief well, has finished running blowout preventer (BOP) stack and riser and is currently latching the BOP to the wellhead for the first relief well. The Development Driller II, which will drill the second relief well, is on location and is making preparations for initiating the drilling process and performing BOP maintenance.

### **Wildlife Surveillance and Recovery Teams Search for Impacted Wildlife**

Seven Fish and Wildlife Service surveillance and recovery teams were deployed from the Mobile, Ala., Command Center—four via land with two support crews; two via sea on 2 separate vessels; and one via helicopter over-flight.

Two helicopters conducted flights at low levels to spot wildlife along the Biloxi Marsh, Breton Sound, SW Pass and Pas-A-Loutre. One helicopter conducted an early morning IR Thermal Imagery pilot study flight with Department of Defense scientists. The second helicopter continued its flights with DOI Assistant Secretary of Fish and Wildlife and Parks Tom Strickland over New Orleans area, Houma Command Center and SE Louisiana Refuge Complex in Lacombe, La., to observe potentially impacted wildlife.

*Total response vessels: more than 650*  
*Containment Boom deployed: more than 1.29 million feet*  
*Containment boom available: more than 285,000 feet*  
*Sorbent boom deployed: more than 440,000 feet*  
*Sorbent boom available: more than 640,000 feet*  
*Oily water recovered: more than 6.3 million gallons*  
*Dispersant used: more than 600,000 gallons*  
*Dispersant available: more than 280,000 gallons*  
*Overall personnel responding: more than 19,000*

### **MONDAY, MAY 17**

#### **SBA Provides Direct Outreach to Affected Small Business Owners**

The Small Business Administration has deployed staff to Louisiana, Mississippi, Alabama and Florida to meet individually with business owners, answer questions about the Economic Injury Disaster Loan program, issue loan applications, and provide help in completing the loan forms via business outreach centers.

SBA Administrator Karen Mills has made available low-interest economic injury assistance loans—and deferring the first payment for 12 months—for small businesses suffering financial losses following the oil spill in coastal regions of Alabama, Florida, Louisiana and Mississippi.

While small businesses are encouraged to file claims with BP, these loans can provide the critical temporary assistance needed to overcome the loss of revenue they are currently experiencing. Additionally, the agency is offering deferral opportunities for small businesses in the affected areas on existing SBA disaster loans, as well as encouraging private lenders who have borrowers in the affected areas with existing SBA-guaranteed loans to consider deferrals.

Loan applications can also be made via SBA's secure web application at [www.sba.gov](http://www.sba.gov) or over the phone at (800) 659-2955.

### **Gulf Coast Elected Officials Tour Response Command Posts**

Florida Governor Charlie Crist and U.S. Representative Bill Young visited the St. Petersburg Incident Command Post, and Alabama Governor Bob Riley and U.S. Congressman Kendrick Meek visited the Mobile, Ala., Incident Command Post to meet with local, state and federal officials involved in the ongoing response to the BP oil spill.

### **Officials Continue Direct Outreach to Gulf Coast Governors**

The federal government continues to engage closely with Gulf Coast Governors, and is providing regular response updates via conference call directly to the Governors and their staffs.

### **MMS Oversight of BP Relief Well Drilling Continues**

MMS reports that the Development Driller III, which is drilling the first relief well, installed the blowout preventer on the wellhead and is undergoing functional tests. The second relief well has progressed hundreds of feet into the seafloor after spudding on the morning of May 17. Spudding indicates the point in time when the drill penetrates the sea floor.

### **NOAA Coordinates Underwater Fish and Habitat Surveys**

NOAA's Flower Garden Banks National Marine Sanctuary is teaming up with NOAA's National Centers for Coastal Ocean Science, the Harbor Branch Oceanographic Institution and the University of North Carolina Wilmington to conduct remotely operated underwater vehicle surveys of the fish and deep water habitats of East and West Flower Garden Banks—vital marine sanctuaries in the Gulf of Mexico.

### **Fishing Restrictions Expanded; Majority of Federal Waters Remain Open**

NOAA modified the Gulf of Mexico commercial and recreational fishing closure area. It now measures 24,241 square miles—approximately 10 percent of the Gulf of Mexico exclusive economic zone. The majority of federal waters in the Gulf of Mexico are open to commercial and recreational fishing.

### **Seafood Safety Analysis Continues**

NOAA Fisheries is collecting baseline samples for seafood safety analyses on the west side of the Mississippi river. Two locations were sampled and the research vessel is now moving west of the oil spill in Louisiana waters. NOAA Fisheries also contracted a fishing vessel that left Saturday morning to sample the easternmost closed fishing zone using bottom trawl gear.

*Total response vessels: more than 750*  
*Containment boom deployed: more than 1.3 million feet*  
*Containment boom available: more than 360,000 feet*  
*Sorbent boom deployed: more than 400,000 feet*  
*Sorbent boom available: more than 750,000 feet*  
*Total boom deployed: more than 1.7 million feet (regular plus sorbent boom)*  
*Total boom available: more than 1.1 million feet (regular plus sorbent boom)*  
*Oily water recovered: more than 6.6 million gallons*  
*Surface dispersant used: approximately 580,000 gallons*  
*Subsea dispersant used: approximately 45,000 gallons*  
*Total dispersant used: approximately 625,000 gallons*  
*Dispersant available: more than 390,000 gallons*  
*Overall personnel responding: more than 17,000*

## **TUESDAY, MAY 18**

### **The President Urges Congress to Act on Legislation to Enhance Response**

President Obama again urged Congress to act quickly on a legislative package that will enable the Deepwater BP Oil Spill response to continue expeditiously, speed assistance to people affected by this spill, and strengthen and update the oil spill liability system to better address catastrophic events.

The President issued the following statement: "I am disappointed that an effort to ensure that oil companies pay fully for disasters they cause has stalled in the United States Senate on a partisan basis. This maneuver threatens to leave taxpayers, rather than the oil companies, on the hook for future disasters like the BP oil spill. I urge the Senate Republicans to stop playing special interest politics and join in a bipartisan effort to protect taxpayers and demand accountability from the oil companies."

### **Small Amounts of Oil Reach Proximity of Loop Current**

Satellite imagery indicates that the main bulk of the oil is dozens of miles away from the Loop Current, but that a tendril of light oil has been transported within close proximity. NOAA is conducting ongoing aerial observations to determine with certainty whether or not the oil has actually entered the Loop Current, and continues engage experts within and outside government to develop long-term oil movement forecasts.

Both the location of the Loop Current and the oil slick are dynamic—moving around from day to day. The proximity of the tendril of light oil to the Loop Current indicates that oil is increasingly likely to become entrained. In the time it would take for oil to travel to the vicinity of the Loop Current, any oil would be highly weathered and the natural processes of evaporation and dispersion would reduce the oil volume significantly. The oil would also be significantly diminished by ongoing chemical dispersant application.

### **Fishing Restrictions Extended, Balancing Economic and Public Health Concerns**

Out of an abundance of caution, NOAA has extended the boundaries of the closed fishing area in the Gulf of Mexico into the northern portion of the Loop Current as a precautionary measure to ensure that seafood from the Gulf will remain safe for consumers. Though the latest analysis shows that the bulk of the oil remains dozens of miles from the Loop Current, the new boundaries address the possibility that a tendril of light oil has entered or will enter it.

The closed area now represents 45,728 square miles, which is slightly less than 19 percent of Gulf of Mexico federal waters. This leaves more than 81 percent of Gulf federal waters—or nearly 195,000 square miles—still available for fishing. Details can be found at <http://sero.nmfs.noaa.gov/>.

The newly closed area is more than 150 miles from the nearest port and primarily in deep water used by pelagic longline fisheries that target highly migratory species, such as tuna and swordfish. Coastal fisheries, such as grouper, snapper and shrimp, will not be affected by the expansion of the closed area.

### **SBA Continues to Make Low-Interest Loans Available to Affected Small Businesses**

SBA Administrator Karen Mills has made available low-interest economic injury assistance loans—and deferring the first payment for 12 months—for small businesses suffering financial losses following the oil spill in coastal regions of Alabama, Florida, Louisiana and Mississippi.

While small businesses are encouraged to file claims with BP, these loans can provide the critical temporary assistance needed to overcome the loss of revenue they are currently experiencing. Additionally, the agency is offering deferral opportunities for small businesses in the affected areas on existing SBA disaster loans, as well as encouraging private lenders who have borrowers in the affected areas with existing SBA-guaranteed loans to consider deferrals.

Loan applications can also be made via SBA's secure web application at [www.sba.gov](http://www.sba.gov) or over the phone at (800) 659-2955.

### **NASA Continues to Provide Satellite Imagery to Monitor the Oil Slick**

NASA scientists and research partners are working closely to provide satellite data to those who need it in the wake of the disaster. One such scientist is Sonia Gallegos, of the Naval Research Laboratory (NRL), who recently spent several days on a boat seeing the effects of the oil spill first hand. This project, which proposes to use NASA's active and passive remote sensing capabilities to monitor oil slicks, was funded by NASA six months ago and got a serious jump start three weeks ago when the Deepwater Horizon BP oil rig caught fire and sunk.

This project is part of a larger effort by NASA's Applied Sciences Program to address coastal management issues in the Gulf of Mexico. NASA's Gulf of Mexico Initiative began in response to the impact of hurricanes Katrina, Dennis, Rita and Wilma in 2005 and overall is intended to enhance the ecological and economic health of the Gulf. NASA is working to achieve these goals through use of expertise in remote sensing, oceanography, coastal processes, signal processing and mathematical modeling.

### **Controlled Burn Conducted**

Favorable weather conditions allowed responders to conduct a successful controlled burn operation for the second consecutive day. As part of a coordinated response that combines tactics deployed above water, below water, offshore, and close to coastal areas, controlled burns efficiently remove oil from the open water in an effort to protect shoreline and wildlife.

### **Aircraft Conduct Aerial Dispersant Missions**

Modular Aerial Spray System (MASS) aircraft flew multiple missions—dispensing the same dispersant chemical being used by BP and the federal responders. These systems are capable of covering up to 250 acres per flight.

### **Coastal Waters Assessment Team Completes Sampling**

NOAA's Mussel Watch replacement team completed sampling throughout coastal Louisiana, Mississippi, Alabama and Florida, and is now focused on collecting oysters, sediments and water at eight remaining sites in Texas. In total, the Mussel Watch pre-oiling sample expedition will have visited 60 sites in the northeastern Gulf region in

partnership with NOAA's National Marine Fisheries Service, the Louisiana Department of Fish & Wildlife, Louisiana State University, and the MOTE Marine Laboratory.

*Total response vessels: more than 950*  
*Containment boom deployed: more than 1.36 million feet*  
*Containment boom available: more than 350,000 feet*  
*Sorbent boom deployed: more than 480,000 feet*  
*Sorbent boom available: more than 800,000 feet*  
*Total boom deployed: more than 1.8 million feet (regular plus sorbent boom)*  
*Total boom available: more than 1.15 million feet (regular plus sorbent boom)*  
*Oily water recovered: more than 7.65 million gallons*  
*Surface dispersant used: approximately 590,000 gallons*  
*Subsea dispersant used: approximately 53,000*  
*Total dispersant used: approximately 640,000*  
*Dispersant available: more than 300,000 gallons*  
*Overall personnel responding: more than 20,000*

## **WEDNESDAY, MAY 19**

### **Secretary Salazar Divides MMS's Three Conflicting Missions; Establishes Independent Agency to Police Offshore Energy Operations**

Secretary of the Interior Ken Salazar today signed a Secretarial Order that will lead to the fundamental restructuring of the Minerals Management Service and the division of its three conflicting missions into separate entities with independent missions to strengthen oversight of offshore energy operations, improve the structure for revenue and royalty collections on behalf of the American people, and help the country build a clean energy future.

### **Top Scientists Engaging Closely with BP's Efforts to Cap the Leak**

As a responsible party, BP is charged with capping their leaking oil well. However, the U.S. government is taking an active role to ensure that BP's approach is as strong and as innovative as possible. The Department of Energy has engaged some of the world's top scientific and engineering minds from Sandia, Los Alamos and Livermore Labs—to lend their expertise to BP's efforts to cap the well and permanently stop the leak.

These government scientists are reviewing every plan on the table, validating those that are moving forward and providing additional expertise and input on new tactics.

### **Observations Indicate a Small Portion of Light Oil Sheen Has Entered the Loop Current**

NOAA's latest observations indicate that a small portion of the oil has reached the Loop Current in the form of light to very light sheens.

In the time it would take for oil to travel to the vicinity of the Florida Straits, any oil would be highly weathered and both the natural process of evaporation and the application of chemical dispersants would reduce the oil volume significantly. However, the oil may get caught in a clockwise eddy in the middle of the gulf, and not be carried to the Florida Straits at all.

The Coast Guard has confirmed that the tar balls collected yesterday in the Florida Keys did not originate with the BP oil spill.

### **1,000s of Oil Spill Cleanup Employee Safety Guides Distributed**

The U.S. Department of Labor's Occupational Safety and Health Administration is distributing thousands of safety guides and fact sheets to employees involved with the oil spill cleanup along the Gulf Coast.

The materials supplement OSHA-required training workers must receive before they can be hired to engage in the cleanup. In addition to English, the safety guides and fact sheets initially will be printed in Spanish and Vietnamese in recognition of the diverse population inhabiting the Gulf Coast region. They will be made available by BP's education contractor, PEC, and OSHA officials at cleanup staging areas.

Secretary of Labor Hilda L. Solis is urging BP to hire local workers displaced by the oil spill, including fishermen and workers from the hospitality industry, many of whom have limited English proficiency.

### **Monitoring of Oil Flowing from Insertion Tube Continues**

MMS is working with the BP engineers to monitor the flow of liquid from the riser insertion tube tool, or RITT, as it is brought onto the vessel Enterprise for containment and storage. They continue to inject methanol to prevent build up of hydrates, and additional methanol is being delivered to the Enterprise. Samples of the produced oil are being sent to Louisiana State University (LSU) for analysis.

### **Successful Burn Conducted**

Favorable weather conditions allowed responders to conduct a successful controlled burn operation for the third consecutive day. As part of a coordinated response that combines tactics deployed above water, below water, offshore, and close to coastal areas, controlled burns efficiently remove oil from the open water in an effort to protect shoreline and wildlife.

*Total response vessels: more than 970*  
*Containment boom deployed: more than 1.38 million feet*  
*Containment boom available: more than 380,000 feet*  
*Sorbent boom deployed: more than 530,000 feet*  
*Sorbent boom available: more than 845,000 feet*  
*Total boom deployed: more than 1.91 million feet (regular plus sorbent boom)*  
*Total boom available: more than 1.22 million feet (regular plus sorbent boom)*  
*Oily water recovered: more than 7.87 million gallons*  
*Surface dispersant used: approximately 600,000 gallons*  
*Subsea dispersant used: approximately 55,000*  
*Total dispersant used: approximately 655,000*  
*Dispersant available: more than 310,000 gallons*  
*Overall personnel responding: more than 19,400*

### **THURSDAY, MAY 20**

#### **Admiral Allen Will Stay On as National Incident Commander**

Secretary Napolitano today announced that U.S. Coast Guard Admiral Thad Allen has agreed to remain in his current role as National Incident Commander for the administration's continued, coordinated response to the Deepwater BP Oil Spill after stepping down from his post as Coast Guard Commandant later this month as planned—enabling him to focus solely on managing the unprecedented response effort. As planned and previously announced, Admiral Robert J. Papp, Jr., will relieve Admiral Allen as Commandant later this month.

#### **Secretary Napolitano and Administrator Jackson Demand Transparency from BP**

Secretary Napolitano and EPA Administrator Jackson sent a letter to BP CEO Tony Hayward stressing their expectation that BP to conduct all actions in a transparent manner, with all data and information related to the spill readily available to the U.S. government and the American people. The letter stated that BP must promptly provide to the United States Government and the public all data and information regarding the Deepwater Horizon oil spill and update it daily.

### **EPA Begins Posting Results from Monitoring of BP's Subsea Dispersant Use**

EPA last night began posting results from the ongoing monitoring of BP's use of underwater dispersants in the Gulf of Mexico at <http://www.epa.gov/bpspill>. EPA received this data from BP last night and posted it within hours. Dispersants are a chemical used to break up oil into small droplets so that they are more easily degraded.

This is part of EPA's continued commitment to make air, water, sediment and dispersant monitoring data available to the public as quickly as possible and to ensure the citizens of the Gulf region have access to all relevant public and environmental health information relating to the BP oil spill.

### **Directive Issued Requiring BP to Identify and Use Less Toxic, More Effective Dispersant**

EPA issued a directive requiring BP to identify and use a less toxic and more effective dispersant from the list of EPA authorized dispersants. Dispersants are a chemical used to break up oil into small droplets so that they are more easily degraded.

The directive requires BP to identify a less toxic alternative—to be used both on the surface and under the water at the source of the oil leak—within 24 hours and to begin using the less toxic dispersant within 72 hours of submitting the alternative. If BP is unable to identify available alternative dispersant products, BP must provide the Coast Guard and EPA with a detailed description of the alternative dispersants investigated, and the reason they believe those products did not meet the required standards. EPA's directive to BP can be found [here](#).

### **Economic Cost and Societal Impact Modeling Continues**

The Department of Energy's national laboratories are working with DHS' National Infrastructure Simulation and Analysis Center (NISAC), which is modeling the economic costs and societal impact of the oil spill on energy and other industries in the Gulf and along the coast to support the response efforts of the National Incident Commander and the Unified Area Command. NISAC is a modeling, simulation, and analysis center within DHS that leverages national expertise to address infrastructure protection.

### **Riser Insertion Tube Tool Continues to Divert Leaking Oil**

BP's riser insertion tube tool continues to capture a varying rate of leaking oil, bringing it to the surface for storage and disposal.

### **Progress Continues in Drilling Relief Wells**

The *Development Driller III*, continues to drill the first relief well at approximately 30 feet per hour. The *Development Driller II* is being prepared to receive the blowout preventer, following which it will begin drilling the second relief well.

### **Natural Resource Conservation Service Continues to Build Response**

USDA's Natural Resources Conservation Service has deployed personnel and multiple vessels to assist the

Louisiana Department of Fisheries and Wildlife in monitoring oil making landfall in Terrebonne Bay and Breton Sound areas in Louisiana, and continues to assist the Louisiana National Guard with technical engineering recommendations for stabilizing beach and headland areas where sand and earthen material is being placed to plug openings to prevent the oil from entering the wetlands.

#### **Individual and Small Business Support Services Coordination Team Begins Work**

An interagency team is developing and overseeing a unified approach for coordinating supportive services to individuals and small businesses impacted by the BP oil spill. In support of the National Incident Command, the Interagency Integrated Services Team is building a coordination plan based on the operational concept of “no wrong door” to ensure individuals, families, and small business can easily access the claims process, benefits, and other services.

This team will work closely among all levels of government to ensure that BP, as a responsible party, meets its obligations and that impacted individuals are made whole. Leadership from the interagency team briefed Governors from Gulf Coast states and identified next steps for a coordinated effort to ensure all claims are properly addressed.

As part of these efforts, a central resource for information on how to obtain assistance for dealing with the impacts of the current oil spill should visit [www.disasterassistance.gov](http://www.disasterassistance.gov).

#### **Navy Ocean Survey Vessels Assist in Boom Deployment and Skimming**

Three Navy ocean survey vessels—the Wes Borden, the John Coghill and the Vanguard—continue to support boom deployment and skimming activities along the Gulf Coast.

*Total response vessels: more than 1040*  
*Containment boom deployed: more than 1.43 million feet*  
*Containment boom available: more than 370,000 feet*  
*Sorbent boom deployed: more than 560,000 feet*  
*Sorbent boom available: more than 1.28 million feet*  
*Total boom deployed: nearly 2 million feet (regular plus sorbent boom)*  
*Total boom available: more than 1.65 million feet (regular plus sorbent boom)*  
*Oily water recovered: more than 8.37 million gallons*  
*Surface dispersant used: approximately 600,000 gallons*  
*Subsea dispersant used: approximately 55,000*  
*Total dispersant used: approximately 655,000*  
*Dispersant available: more than 340,000 gallons*  
*Overall personnel responding: more than 24,700*

#### **FRIDAY, MAY 21**

#### **Team Works to Provide Scientifically Validated Flow Rate Information**

The National Incident Command's Flow Rate Technical Group (FRTG) is coordinating efforts across the federal government to support the response and inform the public by providing scientifically validated information about the amount of oil flowing from BP's leaking oil well while ensuring the vital efforts to cap the leak are not impeded.

The administration-wide response efforts have always been geared toward the possibility of a catastrophic event, and our deployment of resources and our tactics have been based on such a worst case scenario not an inexact number. With the source of the oil 5,000 feet under the ocean's surface, it has been extremely difficult to estimate oil flow rate in an environment that prohibits human access.



The FRTG reflects the federal government's clear understanding of the value of determining an oil flow rate, both in regards to the continued response and recovery, as well as the important role this information may play in the final investigation of the failure of the blowout preventer and the resulting spill. The group expects to have an initial flow assessment completed by early next week.

### **Secretary Chu Postpones Trip to China to Focus on Scientific Oil Spill Response**

Energy Secretary Steven Chu is postponing a trip to China, scheduled for next week, at the request of President Obama, in order to stay in the country to continue his work on response efforts to the BP oil spill. Secretary Chu was originally scheduled to visit Beijing and Shanghai and discuss further progress on bilateral clean energy cooperation.

Secretary Chu has been working with the Department of Energy's National Laboratories and other top scientists to help BP determine how to stop the leak, and exploring ideas about the most effective scientific and engineering approaches to the problem.

The Department of Energy has also been offering its resources and technical assistance to the Flow Rate Technical Group.

### **Federal Officials Meet with BP to Discuss Top Kill Method**

Federal officials and scientists have been working with BP engineers on the review of the various operations, procedures and contingencies that will be used during the "top kill" attempt. Federal officials met with the BP Top Kill Management Team to discuss critical decision processes regarding carrying out the top kill. The current schedule for the "top kill" is May 23-25, and the total operation could take several days to complete.

### **Plans Are Made for Long-Term National Parks Recovery Process**

National Parks Service Science Advisor Dr. Gary Machlis will lead an Interior Department Science Team to work on long-term recovery strategies. NPS is currently identifying and developing multi-disciplinary position descriptions and working with human resources to initiate personnel actions. Most of the long-term recovery positions will be "Emergency Hires". DOI has deployed more than 630 personnel to focus on the BP Oil Spill response.

*Total response vessels: more than 1100*  
*Containment boom deployed: more than 1.46 million feet*  
*Containment boom available: more than 370,000 feet*  
*Sorbent boom deployed: more than 560,000 feet*  
*Sorbent boom available: more than 1.28 million feet*  
*Total boom deployed: more than 2 million feet (regular plus sorbent boom)*  
*Total boom available: more than 1.65 million feet (regular plus sorbent boom)*  
*Oily water recovered: more than 8.94 million gallons*  
*Surface dispersant used: approximately 600,000 gallons*  
*Subsea dispersant used: approximately 70,000*  
*Total dispersant used: approximately 670,000*  
*Dispersant available: more than 340,000 gallons*  
*Overall personnel responding: approximately 24,000*

### **SATURDAY, MAY 22**

### **The President Signs an Executive Order Establishing Bipartisan Commission**

President Obama announced that he has signed an executive order establishing the bipartisan National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling with former two-term Florida Governor and former Senator Bob Graham and former Administrator of the Environmental Protection Agency William K. Reilly serving as co-chairs.

The bipartisan National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling is tasked with providing recommendations on how we can prevent—and mitigate the impact of—any future spills that result from offshore drilling.

The commission will be focused on the necessary environmental and safety precautions we must build into our regulatory framework in order to ensure an accident like this never happens again, taking into account the other investigations concerning the causes of the spill.

The commission will have bipartisan co-chairs with a total membership of seven people. Membership will include broad and diverse representation of individuals with relevant expertise. No sitting government employees or elected officials will sit on the commission.

The Commission's work will be transparent and subject to the Federal Advisory Committee Act. The Commission will issue a report within six months of having been convened.

#### **EPA Releases BP's Response to Dispersants Directive**

The EPA released BP's response to its directive on dispersants, which required BP to evaluate available, pre-approved dispersants for toxicity and effectiveness and report back to EPA within 24 hours. EPA will continue to work over the next 48 hours to ensure BP is complying with the directive. BP's response to EPA's directive, as well as the directive itself, can be found [here](#).

BP and several of the dispersant manufacturers have claimed some sections of BP's response contain confidential business information (CBI). By law, CBI cannot be immediately made public except with the company's permission. EPA challenged these companies to make more information public and, as a result, several portions of the letter can now be made public. EPA is currently evaluating all legal options to ensure that the remaining redacted information is released to the public. EPA continues to strongly urge these companies to voluntarily make this information public so Americans can get a full picture of the potential environmental impact of these alternative dispersants.

#### **Preparation Continues for BP's Top Kill Attempt to Stop Leaking Oil**

BP and federal scientists and engineers continue to prepare for the top kill operation, which is tentatively scheduled for Tuesday, May 25. From the command centers in Robert, La., and Houston, Texas, federal officials continue to review BP's various procedures and contingencies for the top kill. Scientists from Sandia, Los Alamos and Livermore National Laboratories are examining the risks associate, and BP continues to evaluate options for lower toxicity dispersant and alternative supply chains.

#### **Wildlife Rescue Flights Continue**

U.S. Fish and Wildlife Services conducted four flights today for recon/wildlife rescue missions and bird surveys.

#### **Officials Plan and Prepare for Any Potential Impacts to Tribal Lands**

DOI's Bureau of Indian Affairs continues to work with tribes along the Gulf Coast to determine potentially impacted

tribal lands, and conduct pre-planning, including coordinated efforts with local emergency agencies, in preparation for any future impact.

*Total response vessels: more than 1150*  
*Containment boom deployed: more than 1.52 million feet*  
*Containment boom available: more than 310,000 feet*  
*Sorbent boom deployed: more than 560,000 feet*  
*Sorbent boom available: more than 1.27 million feet*  
*Total boom deployed: more than 2 million feet (regular plus sorbent boom)*  
*Total boom available: more than 1.58 million feet (regular plus sorbent boom)*  
*Oily water recovered: more than 9.73 million gallons*  
*Surface dispersant used: approximately 630,000 gallons*  
*Subsea dispersant used: approximately 85,000*  
*Total dispersant used: approximately 715,000*  
*Dispersant available: more than 375,000 gallons*  
*Overall personnel responding: approximately 24,900*

## **SUNDAY, MAY 23**

### **Secretary Salazar Meets with Federal Science Team Working at BP Command Center**

Secretary Salazar traveled to the BP Command Center in Houston to meet with the federal science team that is working with BP officials, scientists and engineers to help stop the flow of oil from BP's well. Since day one, Secretary Salazar has continued to hold BP accountable for meeting critical deadlines as they attempt to close the well.

### **Oil Cleanup Efforts Continue to Build in Louisiana**

Response personnel and Shoreline Cleanup and Assessment Teams, along with hundreds of volunteers, continue to clean the Louisiana coastal areas impacted by the Deepwater BP oil spill. Approximately 400 people, more than 300 vessels and 45 aircraft are on-scene in Iberia, Jefferson, Lafourche, Plaquemines, and Terrebonne Parishes investigating reports of oil, cleaning impacted areas and evaluating response efforts to ensure the oil is removed with the most environmentally responsible methods.

Response crews and Shoreline Cleanup and Assessment Teams have positioned more than half a million feet of boom in the region. They are manually removing oil with shovels and rakes, skimming the oil off the surface, applying dispersant and conducting controlled burning operations at every opportunity to minimize coastal impact.

Additional response personnel and equipment is being surged into areas where modeling and aerial surveillance indicate a greater potential for shoreline impact. Anyone who locates oil on the shore should avoid contact and report the sighting to (866) 448-5816.

### **Fish and Wildlife Operations Continue to Expand**

Assistant Secretary of Fish and Wildlife and Parks Tom Strickland visited Robert, Port Fourchon and Delta National Wildlife Refuge to oversee wildlife rescue missions and plans. Fish and Wildlife Service is working to expand their operations further to the west pursuant to reports of the oil spill impacting assets in that direction. Up to 10 personnel will be based out of Grand Isle and a barge will be moved to Trinity Island. An additional helicopter has been obtained to assist with wildlife rescue missions.

### **Property Damage Claims Processed**

The administration will continue to hold the relevant companies accountable for repairing the damage and repaying Americans who've suffered a financial loss. BP continues to process claims via its claims website ([www.bp.com/claims](http://www.bp.com/claims)) and its helpline (1-800-440-0858). BP reports that 23,451 claims have been opened, from which \$27.8 million has been disbursed. No claims have been denied at this time. There are more than 420 claims adjusters on the ground. To file a claim, visit [www.bp.com/claims](http://www.bp.com/claims) or call BP's helpline at 1-800-440-0858. Those who have already pursued the BP claims process and are not satisfied with BP's resolution, can call the Coast Guard at (800) 280-7118.

### **Controlled Burn Conducted**

Favorable weather conditions allowed responders to conduct a successful controlled burn operation. As part of a coordinated response that combines tactics deployed above water, below water, offshore, and close to coastal areas, controlled burns efficiently remove oil from the open water in an effort to protect shoreline and wildlife.

*Total response vessels: more than 1150*  
*Containment boom deployed: more than 1.73 million feet*  
*Containment boom available: more than 275,000 feet*  
*Sorbent boom deployed: more than 730,000 feet*  
*Sorbent boom available: more than 1.25 million feet*  
*Total boom deployed: more than 2.46 million feet (regular plus sorbent boom)*  
*Total boom available: more than 1.52 million feet (regular plus sorbent boom)*  
*Oily water recovered: more than 10.24 million gallons*  
*Surface dispersant used: approximately 685,000 gallons*  
*Subsea dispersant used: approximately 100,000*  
*Total dispersant used: approximately 785,000*  
*Dispersant available: more than 340,000 gallons*  
*Overall personnel responding: more than 22,000*

### **MONDAY, MAY 24**

Secretary Napolitano and Secretary Salazar Visit Louisiana to Inspect Response

Secretary Salazar and Secretary Napolitano today visited Louisiana to inspect the ongoing, unprecedented federal response to the BP oil spill—accompanied by a bipartisan Senate delegation including Senator Dick Durbin (D-IL), Senator Jeff Bingaman (D-NM), Senator Lisa Murkowski (R-AK), Senator Sheldon Whitehouse (D-RI), Senator Mary Landrieu (D-LA), and Senator David Vitter (R-LA).

In Louisiana, Secretary Salazar and Secretary Napolitano met with Governor Bobby Jindal and local community and industry leaders to discuss the latest response efforts in Louisiana and along the Gulf Coast with federal officials leading the effort as well as BP representatives.

They also conducted a flyover tour of the Louisiana coastline to view firsthand the spill's impact on these vital coastlines, and cleanup efforts underway.

The visit was Secretary Salazar's seventh and Secretary Napolitano's fourth visit to the Gulf Coast and the affected area since day one.

### **Fishery Failure is Determined, Balancing Economic and Public Health Needs**

Commerce Secretary Gary Locke determined there has been a fishery disaster in the Gulf of Mexico due to the economic impact on commercial and recreational fisheries from the ongoing Deepwater Horizon oil spill. The affected area includes the states of Louisiana, Mississippi and Alabama.

This action was taken because of the potentially significant economic hardship this spill may cause fishermen and the businesses and communities that depend on those fisheries. The disaster determination will help ensure that

the Federal government is in a position to mobilize the full range of assistance that fishermen and fishing communities may need.

Locke made the determination under Section 312(a) of the Magnuson-Stevens Act. The declaration was made in response to requests from Louisiana Governor Bobby Jindal and Mississippi Governor Haley Barbour based on the loss of access to many commercial fisheries and the existing and anticipated environmental damage from this unprecedented event.

### **BP Continues to Process Damage Claims**

The administration will continue to hold the relevant companies accountable for repairing the damage and repaying Americans who've suffered a financial loss. BP continues to process claims via its claims website ([www.bp.com/claims](http://www.bp.com/claims)) and its helpline (1-800-440-0858). To file a claim, visit [www.bp.com/claims](http://www.bp.com/claims) or call BP's helpline at 1-800-440-0858. Those who have already pursued the BP claims process and are not satisfied with BP's resolution, can call the Coast Guard at (800) 280-7118.

### **NOAA Mobilizes Three Teams of Scientists to Collect Strategic Samples**

In response to the Deepwater BP oil spill, NOAA's Mussel Watch program has mobilized three teams of scientists to test shellfish, sediment and water at 60 locations along the Gulf of Mexico from the Florida Keys to Brazos River, Texas.

The mission of this Mussel Watch effort is to collect additional baseline data on contamination in strategic areas of the Gulf shoreline so that if the oil hits a particular area, new samples can be taken that would reveal the full impact of the spill.

These preliminary samples will be tested for 60 oil-related compounds—to include polycyclic aromatic hydrocarbons, known as PAHs. NOAA will use this data as part of the natural resources damage assessment that determines the type and amount of restoration that is required for the Gulf.

### **Wildlife Rescue Flights and Observations Inform Booming Priorities**

U.S. Fish and Wildlife Service conducted overflights for reconnaissance, wildlife rescue missions and bird survey missions. One flight near the Biloxi Marsh observed two small islands with nesting colonies of pelicans, gulls, and terns. In response, a request was submitted to place boom around these two islands.

### **Drilling Continues on Both Relief Wells**

BP continues to make progress in drilling both relief wells—more than 10,000 feet down for the first and more than 8,500 feet for the second.

*Total active response vessels: more than 1,200*  
*Containment boom deployed: more than 1.75 million feet*  
*Containment boom available: more than 380,000 feet*  
*Sorbent boom deployed: more than 990,000 feet*  
*Sorbent boom available: more than 1.07 million feet*  
*Total boom deployed: more than 2.74 million feet (regular plus sorbent boom)*  
*Total boom available: more than 1.45 million feet (regular plus sorbent boom)*  
*Oily water recovered: more than 10.83 million gallons*  
*Surface dispersant used: approximately 700,000 gallons*  
*Subsea dispersant used: approximately 115,000*  
*Total dispersant used: approximately 815,000*

*Dispersant available: more than 300,000 gallons  
Overall personnel responding: more than 22,000*

*\*\*\* This is a general narrative of key actions the U.S. government took to save lives and mitigate the BP oil spill's impact on public health, the environment and the economy. (Detailed and specific after-action information is still being collected, as with any major event.) \*\*\**

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## **Enhanced Subsea Blow out Preventer (BOP) Stack Testing for Dynamically Positioned Rigs in the Gulf of Mexico**

### **Purpose**

Subsea BOP stacks are critical safety equipment designed to secure a well in the event of flow. They are tested to ensure that they will function and secure the well. The testing process also confirms there are no leaks in the system that would diminish system integrity. This file note is to document current subsea BOP stack testing practices for dynamically positioned (DP) rigs, and identify areas of enhancement for Gulf of Mexico (GoM) operations.

### **Standard Practices**

Current GoM Mineral Management Service (MMS) regulations require BOP stacks to be stump tested at surface with water, pressure tested once installed on the well and then every 14 days thereafter. There is no GoM MMS regulatory requirement to test the BOP emergency systems once the BOP stack is installed subsea.

Global industry practice before running a BOP stack to the wellhead at the mud line is to function and pressure test it on the rig deck. Where not required by regulation, this is done to avoid unnecessary downtime. The surface test is performed by installing the BOP stack on a test stump and hooking up the hydraulic and electric power and the control systems. Since the BOP stacks have two redundant pod systems, the surface tests include both pods. The function and pressure testing of the BOP stack is typically done using one pod and then it is only function tested using the other pod. This function test includes actuating the components, but not pressure testing them. In addition to function and pressure testing the normal operating functions on the BOP stack, the emergency systems are tested as well. These systems include:

- Deadman
- Autoshear
- Emergency Disconnect System
- Remote Operated Vehicle (ROV) access

BOP stack emergency systems are not typically tested once the BOP stack is on the seabed.

The following is a summary of the emergency systems and how tests are typically performed on the test stump at surface.

#### **Deadman**

- Designed to close programmed rams when BOP stack loses hydraulics and electrical power
- Tested at surface by cutting the power and hydraulics to the BOP stack and verifying the programmed rams have closed

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#### Autoshear

- Designed to close programmed rams if the Lower Marine Riser Package (LMRP) has an unplanned separation from the BOP stack
- Tested by inducing a signal that simulates LMRP disconnect, then verifying the shuttle valves for the programmed rams work as designed. This can be done by “dry firing” (no hydraulic pressure) the system to verify the program is working and the shuttle valves operate. The Autoshear can be programmed to close the same rams as the Deadman.

#### Emergency Disconnect System (EDS)

- Designed to close programmed rams and disconnect the LMRP from the BOP stack
- The EDS system can be set for multiple scenarios (i.e. with or without drill pipe in the hole, running casing, etc.)
- Typically tested at surface by initiating the signal with no hydraulic pressure on the system to ensure the program is working as designed.

#### ROV Intervention

- A ROV stab panel is installed on the BOP stack to enable ROV intervention to operate select BOP functions
- The ROV system is tested by plugging in a stab to the panel and operating the functions. The pump rates at surface do not necessarily simulate what a ROV could produce subsea.

#### **Subsea BOP Stack Emergency System Testing**

As stated earlier, the reason to test the BOP stack once subsea is to ensure that the stack will work as designed to secure the well if required and to verify that there are no leaks in the system that would diminish system integrity. A minimum condition of success would include confirmation that the emergency systems will close the blind shear rams. This can be accomplished by activating the Deadman system. Also, verifying the ROV intervention system is operable will ensure redundancy of closing the blind shear rams and provide opportunity to function at least one other ram, typically a pipe ram.

The risk in testing the Deadman is that in cutting power and hydraulics to the BOP stack and relying on subsea battery power to operate, there could be a drain on the batteries. There is also a risk that the system will not re-start as designed and the LMRP would need to be pulled back to surface to enable repairs. Both of these are manageable risks.

There does not appear to be any significant risk in testing the ROV intervention system once the BOP stack is installed on the well. However, standard ROV systems can only pump seawater in the volumes required. Seawater is adequate as an emergency control fluid, but Stack-magic is preferred for normal operations. This will require retrofits to standard ROV systems.



Autoshear and EDS testing would include actuation of rams and involve disconnecting the LMRP. Testing LMRP release is not a critical operation to secure the well, could damage a connector and imports significant risk to the operation. Since the Deadman test would test the blind shear ram closing functions, it is not necessary to perform these additional tests at the seabed.

A key question arises if the Deadman and ROV intervention systems are tested on the wellhead at the mud line as visual confirmation of ram position is not possible. How do you know the systems worked as designed?

In the case of the Deadman system test, there are two indicators to determine the system worked as designed. Firstly, a ROV should see the control fluid vent as the rams are closed. The second indicator is the volume of fluid pumped to open the rams, which is counted at the BOP stack. If the volume pumped is as expected, it would be a reliable positive indication that the Deadman system operated as designed. There is not a way to get a false positive test.

When the ROV intervention system is tested, there is one current indicator to detect that the system worked as designed. As with the Deadman test, when the rams are opened, the volume of fluid pumped to perform the operation is counted at the BOP stack. If the volume pumped is as expected, this is positive indication the rams were closed by the ROV. A future consideration is to count the gallons the ROV pumps to close the rams, however it is unclear which ROVs have this capability and modification is likely required.

### **Recommendation**

Short and long term actions are required to improve subsea BOP stack testing, reliability and intervention. The short term solution includes enhanced testing procedures when the BOP stack is installed on the well as described above. Long term solutions would include BOP stack system design modifications, improved operational practices and alternative solutions for contingency and intervention. These solutions will require input from operators, drilling and service contractors, and equipment manufacturers.

In order to ensure the BOP stack on a BP-operated DP rig in the GoM will function as designed to secure a well, the Deadman and ROV intervention ram closure systems will be tested when the BOP stack is installed subsea.

For the Development Driller III relief well, we will do a surface ROV intervention system test using the ROV pump and Stack-magic control fluid. To test the emergency system once the stack is connected to the wellhead subsea, we will test the Deadman.

Scott Sigurdson  
VP Engineering, Drilling and Completions

4/27/10

### Safeguards on BP's Relief Well

The Blow Out Preventer (BOP) has a control system that can place the Lower BOP in a safely closed position by the following methods:

- Normal manual function of the BOP, with redundant control pods and ability to activate both from the drill floor and remotely
- Emergency Disconnect Sequence - surface initiated system
- Deadman system – activates when there is a loss of power or communication to BOP Stack
- Auto shear function – activates when the Lower Marine Riser Package (LMRP) separates from Lower BOP
- Remotely Operated Vehicle (ROV) intervention with two dedicated ROV Control Panels

These systems are tested as follows:

- System integrity of the emergency disconnect system – Only one full system hydraulic function test is required when BOP maintenance is performed in between wells. Any other tests should be done without hydraulics to avoid possible equipment damage
- Surface test of deadman/auto shear functions, with both the casing shear rams and lower blind shear rams, and with the casing shear rams disabled
- Though not required, BP intends to test the deadman system on the seafloor
- ROV intervention functions (i.e., hot stab) before the BOP is placed on the seabed and each time the BOP is on the surface for maintenance, with tests for the ROV control panels on both the LMRP and the lower BOP

The tests of the secondary control systems have typically not been required in the past, but other than the deadman test on the seafloor, they are a condition of the permit to drill the relief well. MMS inspectors will witness all of these tests.

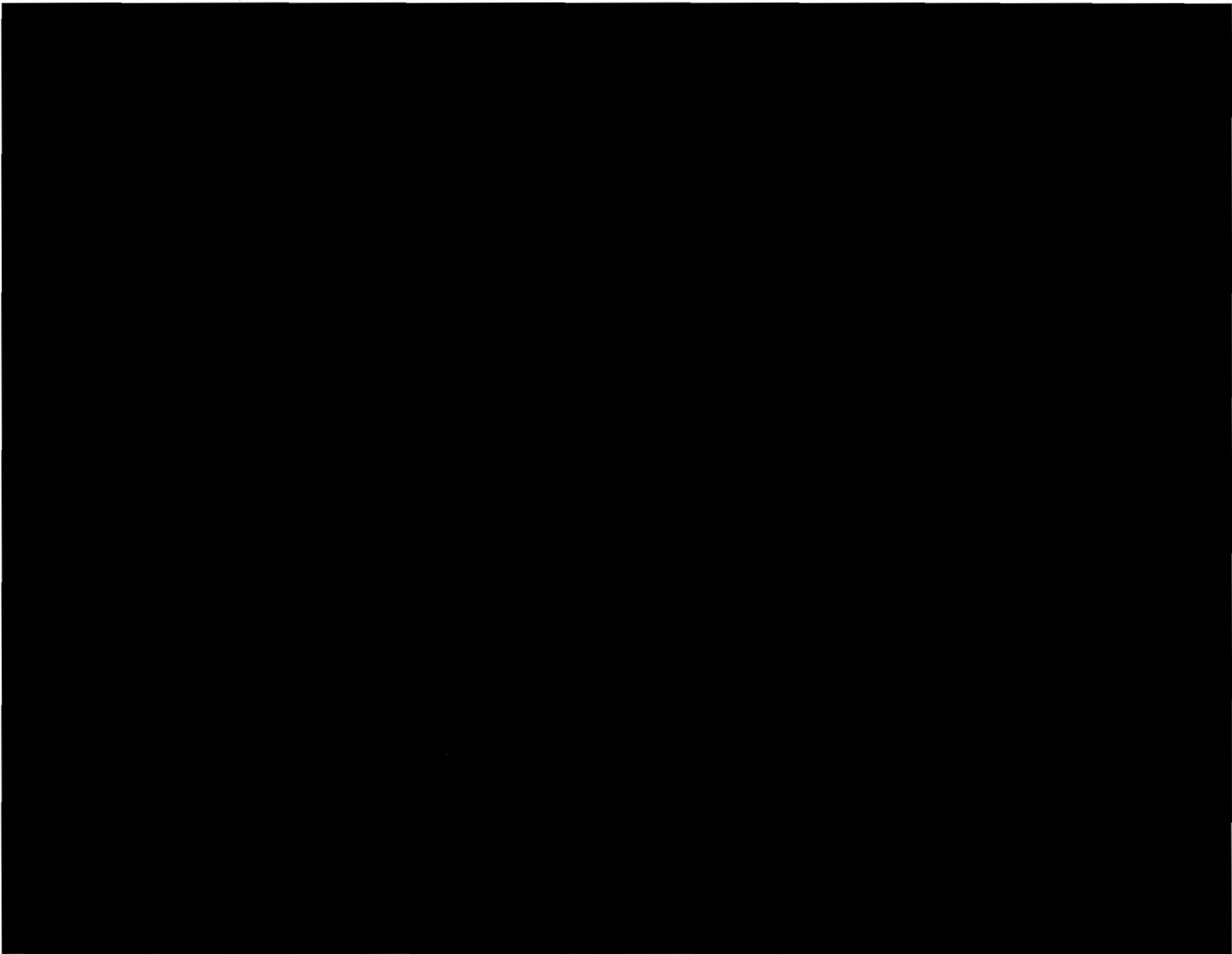
Conditions of approval that were placed on the APD for geological and geophysical hazards:

- A caution for shallow gas at 1550 and 3261 ft below mud line (bml)



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- A caution for a low potential shallow water flow at 831-936 ft and 1198-1825 ft bml and for a moderate potential shallow water flow at 2791-3261 ft bml
- The well cannot be spud until the MMS has reviewed the results of the 2D High Resolution Seismic survey



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**INTERAGENCY MEMORANDUM**

**TO:** Mike Bromwich, Director, BOEM  
**FROM:** Dr. Marcia McNutt, Director, USGS  
**DATE :** June 28, 2010  
**SUBJECT:** USGS Support for Macondo Well Control and Containment; Observations Regarding Technical Problems with Deepwater Efforts

**I. BACKGROUND**

On May 7, 2010, the Secretary dispatched me to the Gulf to provide science-based and technical coordination for the Unified Command responding to the Deepwater Horizon Incident. Since then I have been based almost full-time at the Unified Command Center in Houston, Texas to support and coordinate the efforts of Federal scientists and BP engineers who are working to develop solutions to the crisis.


When we first learned of the leak, I led the USGS response, and launched the USGS Tactical Oil Response Team and its sub-team, the USGS Geospatial Information Response Team (GIRT). The International Charter to support the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Coast Guard (USCG) was also activated.

The GIRT was the first team we stood up when the crisis began, and it continues to coordinate interagency demands for geospatial products that help the response effort in the field. The USGS Tactical Oil Spill Response Team deals with the immediate, tactical needs in the response to the crisis. Many of their activities are on the ground and in support of the FWS and NPS as they anticipate impacts of the spill (e.g., establishing pre-spill baselines through sampling) and are directly impacted by oil ashore.

In addition to these groups, I also coordinate the Oil Spill Science Team, which supports longer-term science needs associated with the spill, performing more in depth studies on mitigation strategies and broader integrated science questions. Other technical working groups I have formed or coordinate include the Hazard Response Executive Committee (HREC) which has broad oversight over USGS science in this emergency. HREC has jurisdiction over all of the above.

I also have been assigned by the Secretary to Houston to coordinate a federal team at BP to help with well containment and ultimately with killing the well.

I also set up the Strategic Sciences Working Group, which includes a number of distinguished scientists from the private and government sector, to work on scenario planning for cascading consequences from the oil spill considering the Gulf as one large



coupled ecosystem from the phytoplankton up to humans. For each scenario, they looked at the likelihood of each event, its impact, and what signs we would look for to know that it is happening. They considered events such as the possibility of dispersed oil causing hypoxia in the midwater, leading to collapse of fisheries and economic ruin of select fishing communities over others, etc. Their work can potentially inform the Gulf Coast Restoration Plan.

I took over as the lead of the Flow Rate Technical Group (FRTG) on May 23. The FRTG is designed to support the response and inform the public by providing scientifically validated information about the amount of oil flowing from the leaking well.

Recent technical review teams I have set up in Houston are to oversee the relief wells and the safety of throttling back the flow of the well if a hurricane should come through. These two teams have provided important oversight on key operations that will occur in the near future. They seriously question the ability of the geologic formations in the vicinity of the Macondo well to contain hydrocarbons leaking from a well that has lost integrity and mitigate the impact of a potential blowout situation.

The challenge of characterizing the effects of contamination resulting from the free flow of oil and gas from the drilling site lies in the enormity of the volume of oil, the expanse of sea, air, and land into which it flows, and the inability to predict exactly where this oil and the associated dispersant is going and how it will impact the various ecosystems with which it interacts, on scales from microscopic to human.

While there are numerous technical efforts underway that we should discuss, this memorandum is to provide you with background information on the well control and containment efforts to assist your understanding of the technical issues of operations in deep water under current technology.

This memorandum is based on internal, daily incident reports and my personal, first hand experiences. It also reflects numerous personal communications with officials from other agencies, BP and other scientists working on the response. I commend to you the incident reports as a good source of real time information about the well intervention and containment efforts. A CD containing an electronic copy of these reports has been provided separately.

Below is a brief summary/timeline of the well control and containment efforts highlighting technological difficulties by time period and my personal observations for your consideration.

## **II. OBSERVATIONS AND ANALYSIS**

### Brief Chronology of Well Control Efforts

*On April 22 and thereafter:* Immediately after the fire was put out there were several attempts to seal the well by activating the BOP (Blow Out Preventer) using ROVs



(remotely operated vehicles) plugged directly into the hydraulics. On April 22 the blind rams were activated, with no effect, and on April 26 the middle pipe rams were activated. When the casing shears were activated on April 29, one of two leaks at the riser kink momentarily stopped, but then started again. This was the only indication that the BOP was functioning. The rams were closed again on May 2. On May 5 there were attempts to close the middle pipe rams – there was no evidence of ram movement and no change in flow. In some cases, it was clear that the ram that the ROV was attempting to activate was not correctly connected through the hydraulic hoses.

*May 8:* One hundred ton cofferdam lowered to seafloor in an attempt to contain the largest of the leaks in the riser at the free end by capturing the flow and channeling it through a riser warmed by hot seawater (to prevent hydrate formation) to the surface. The cofferdam fails, becoming instantly iced up with methane hydrates as the rising plume is trapped inside the coffer dam.

*May 16:* Riser Insertion Tube Tool (RITT) operational for recovering oil from riser to surface ship. RITT is variously successful in pulling oil to the surface through a marine riser, peaking for short periods of time at 8000 barrels per day rates.

*May 26:* Top Kill begins. *May 29:* Top Kill ends, without success.

*June 3:* Top Hat #4 in place on top of Lower Marine Riser Package (LMRP). Experience in managing hydrates learned from the failure of the cofferdam and the success of the RITT is applied to the design of the Top Hat, and it pays off with a smooth procedure. Collection of hydrocarbons begins to Enterprise.

*June 11:* Production of hydrocarbons begins through choke line to semi-submersible platform, the Q-4000. Production eventually peaks at about 9000 barrels per day. Flow continues to leak into the ocean around the top hat, but at a reduced rate.

*Ongoing:* Relief wells have continued to be drilled from soon after the incident began. What has been interesting to observe is the extra effort it took to get the BOPs on the relief wells to pass full checkouts, which of course have been under increased scrutiny without a stone unturned.

#### Analysis of What Could Have Done More Effectively

To assist in BOP activation and early intervention: Require the equivalent of an airliner “black box” that survives a catastrophic incident that will reveal what commands were sent to the BOP and what status the BOP is currently in. The data logger, which kept a record of signals sent to the BOP, blew up along with the Deepwater Horizon. Require



better documentation of current configuration of the BOPs in the field as they are modified so that it is clear how to activate the rams from the seafloor.

*Containment Dome:* Cofferdams worked well to contain leaks on wells damaged by Hurricane Katrina. The first cofferdam ONLY failed because of the mile deep location of the Macondo well that placed in the hydrate zone for methane formation.

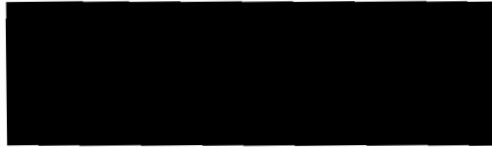
*Top Hat:* While the top hat was successful, one important part of the procedure for the installation involved flooding the cap with liquid nitrogen to prevent the formation of hydrates. Had the Macondo well been just one quarter mile deeper, this strategy would not have worked. Nitrogen would have been part of the problem rather than part of the solution, as nitrogen would have formed its own hydrate with seawater rather than inhibiting methane hydrate formation.

*RITT:* The RITT was a very specialized tool for insertion into a riser. It was not very efficient or effective, but much was learned from it in terms of inhibiting hydrate formation that made the top hat successful.

*Top Kill:* The contractor hired by BP to execute the Top Kill had been extremely successful in killing the wells that had been sabotaged by the Iraqis in Kuwait during the Gulf War. However, in those cases, it was possible to get access to the top of the well and shut it in before killing the well. The great ocean depth ruled that out in this case, making the problem far more difficult. The initial assessment after the top kill attempt is that most of the mud did go down the well, but was lost somewhere into formations. Perhaps a more thorough assessment of the state of the well's integrity would have led to a lower probability for success for top kill. Also, BP was operating under the assumption that the flow rate for the well was much lower than we now know to be the case, and the ability to kill the well is highly dependent on the flow rate.

*Better Planning:* It has simply taken too long to bring all of the containment efforts on line as BP and contractors have had to design, build, and test equipment for the first time. They are often up against basic limits of engineering in terms of the crushing pressures at these depths on the seafloor, the high temperatures and pressures of the oil and gas emanating from the well, and the constant safety menace of having dozens of vessels and ROVs, hundreds of men, helicopters, and flaring gas all operating within a confined space. Nothing has been routine, nothing turnkey, nothing off the shelf. Although some of the efforts have worked, given the environmental price, it has taken too long. Better planning would have required BP to anticipate a catastrophic event, including having the equipment to necessary to respond close at hand and ready to be deployed.





*BOP Testing:* If EVERY BOP had to go through the same exhaustive check-out procedure that the two BOPs for the relief wells have gone through, with BOEM providing thorough oversight, including an in situ deadman test, there probably wouldn't be another BOP failure. It is worth noting that the testing of the dead man switch (until these relief wells) had NEVER been done at sea, because it involves turning off all power to the rig and leaving it essentially defenseless during the testing. Because the level of scrutiny for these relief wells is so high, no corners are being cut and the BOEM is looking over every procedure in great detail. The deadmen are being tested at sea for the first time, a practice that should be required.

*BOP Design:* Even the deadman on the BOP really should not be considered a "failsafe" because if the battery dies, it fails in the open position, not in the closed position. The reason for this is because most operators would not want their blind shears activated in the case of a dead battery, and yet a simple dead battery renders the system inoperable. If the deadman on the BOP were a true failsafe, there should be a way for the system to activate NO MATTER WHAT. Or at least there should be some totally annoying alarm that alerts the rig floor that the deadman's battery is dying in the same way that the smoke detectors in your home start beeping to let you know that you have only so long to replace the battery before the smoke detectors start blaring continuously.

#### Personal Observations

My position as Director of USGS, my background and experience as an oceanographer and geophysicist, my 12-year stint as director of an oceanographic institution with a reputation for doing impossible operations using remotely operated vehicles in the deep sea, along with my access to scientific materials and documents, give me relevant expertise in addressing the difficulties of well containment strategies created by (1) distance from shore; and (2) ocean depth/pressure/temperature.

These two factors particularly play into the difficulties that BP experienced in the several notable failures, or difficulties encountered in current attempts, to shut in the well.

I have reviewed and can provide to you documentation regarding as methane hydrate stability curves (which are temperature as well as pressure dependent) and can discuss further with you their applicability to the Macondo well control difficulties.

Tether management issues as a function of ocean depth also become a factor as does maintaining the integrity of haulers laid on the seafloor - before the hydrocarbons flow. Other important issues are the variability of sea state as a function of distance from shore that affects sim-ops and the ability to run from hurricanes, etc.

One personal observation is that I have noted that the culture of BP seems to be unrealistically optimistic. They seem to hope for the best and plan for the best. The entire issue with the spacers for the drill pipe when they were cementing the main well in



the first place is a case in point. They were behind schedule, and thought that they would get a good cement job despite what all of the experts were telling them. My concern in that kind of corporate culture is that engineers might have test results staring them in the face telling them that their BOP is not functioning correctly, but they somehow gloss over the facts, and interpret them to somehow convince themselves that all is well in order to stay on schedule, and enter such in the log book for the government to sign off. Without the outside pair of eyes from the BOEM, no one sees the test as it really is. There must be safeguards in place to prevent disasters triggered by problematic corporate cultures.

Another recent example illustrates the disjointed corporate culture that permeates BP's decisionmaking processes. By happenstance, the USGS team identified flaws in BP's process for evaluating and addressing problems. One of the principal issues with shutting in the well that the geoscientists need to evaluate is IF the rupture disks in the 16" casing have failed, to what extent will the surrounding geology help you out if hydrocarbons start leaking out into the surrounding formations? Such "help" can come in the form of porous, laterally continuous sandstones that act as excellent storage for copious amounts of gas and oil or poorly consolidated formations that would stop fractures attempting to break towards the surface (in the same manner that it is hard to cleanly rip a wet piece of paper).

The USGS team discovered that BP's approach to solving this problem left potential gaps in the analysis. Rather than coordinating their scientists' efforts, the BP person in charge first went to the BP geologists, and asked them, "What is the most amount of sand you think is possibly consistent with the well logs from this well?" The geologists made an interpretation of the logs maximizing at every horizon the amount of sandstone they could possibly imagine might be consistent with the data. The geologists' interpretation was transmitted by the BP lead to the BP physical properties specialist who was asked to evaluate "Given this stratigraphic section, how much oil can you possibly store in it?" Next, that analysis was given to the BP geophysicists with a request to analyze "If you had this geologic section, what are the chances that as it is filling with oil it would breach to the surface?" None of these efforts were coordinated.

The USGS team took a broader approach. They identified the issue and evaluated whether it was consistent with the existing data. For example, their approach showed: "This well is in the middle of a submarine canyon that has been draining the muddy Mississippi Valley for eons. We find it nearly impossible to imagine that there is any sand except at very great depth in this well. Is that interpretation consistent with the well logs?"

Turns out that it is! It is an even better interpretation of the data that there is NO SAND formation that can store any oil leaking from ruptured disks or ruptured casing for any length of time. Nor are there any loose sand layers to impede faults from breaking to the seafloor. In fact, there are pre-existing faults all around which hydrocarbons can take advantage of without having to create any new pathways.



BP's failure to integrate the analysis resulted in each group seeing only a little piece of the problem, with no one going back to question the initial premise. The BP people making the final call that there was sufficient storage to shut in the well didn't have the proper analysis that would give them insight to the original data, which would likely have led them to conclude that there were not sufficient sand formations to store hydrocarbons in if the well has lost integrity. It was only through the USGS people taking the initiative to ask the right questions that this problem was exposed.

Ultimately, if the Macondo blowout had happened anywhere else but in the Gulf of Mexico (excepting perhaps areas of the North Sea), the difficulty of stopping the well, and responding to the oil spill, would have been much worse. The response would have been an order of magnitude slower, and an order of magnitude less. This is due to the fact that the level of activity in the Gulf of Mexico makes it uniquely well-situated to respond to this kind of disaster, due to the proximity of infrastructure, ports, expertise, trained personnel and available resources. And yet we still struggle to contain the well and respond to the environmental harms. This experience leads me to recommend that you evaluate how the Department can ensure that effective containment strategies are developed, tested, and available on short timeframes. These containment strategies must be temperature and pressure ready for the specific environments where wells are planned.

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

**Oil Spill Containment, Remote Sensing and  
Tracking For Deepwater Blowouts:  
Status of Existing and Emerging Technologies**

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*Final Report*



**PCCI**

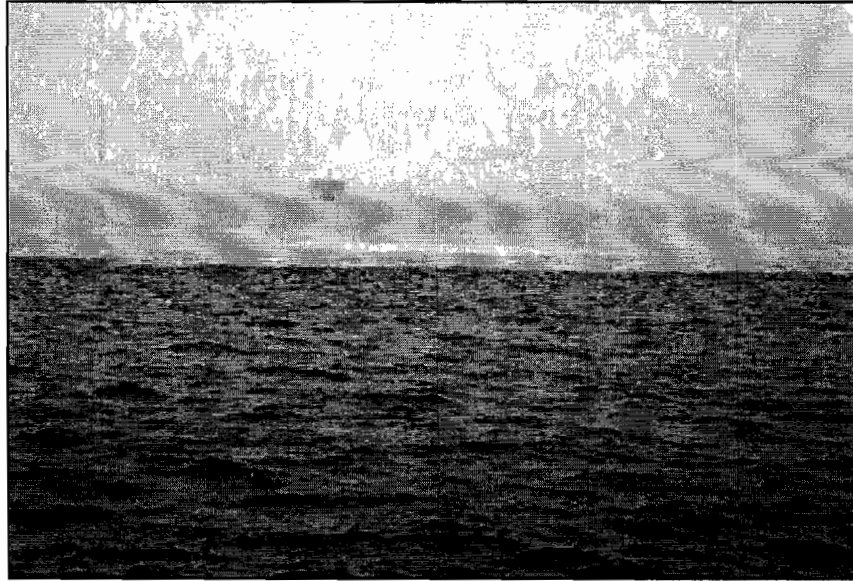
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**12 August 1999**

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**Figure 16 - Surface Boil Due to Well Broaching**

**Commentary:** The pressure required to initiate a fracture of the subsurface sediment (usually expressed in psi/ft) is a major factor in the design of casing for any well. Pore pressure (the pressure of the formation fluids) generally increases with depth, which requires higher mud densities. At some depth the required mud density approaches the fracture pressure at the last casing shoe. Thus, another casing string is required in order to continue drilling. The depth of the subsequent casing string is determined based on anticipated pore pressure with consideration given to the possibility of an influx. The last casing shoe must be capable of withstanding the mud weight used for drilling as well as the pressures developed during kick circulation. The difference between the mud weight and the pressure exerted by the mud column in addition to anticipated surface pressures is called the "kick margin". If the kick margin is not adequate, an underground blowout is likely if a severe influx is encountered.

If the innermost casing string fails to contain the pressure associated with an influx (channeled cement, hole in the casing, leaking wellhead seal, etc.), the pressure will be communicated to the next casing string which almost certainly will not be designed to handle such pressures either because of its burst rating or the fracture strength at the casing shoe. Naturally, as the point where the flow is exiting the wellbore becomes shallower, the probabilities increase that it will create a flow path to the seafloor.

Deepwater drilling requires the placement of additional casing strings at shorter intervals than shallow water or land drilling due to the lower fracture gradient of the sediments. Thus, it is not uncommon to have small kick margins during deepwater drilling. See Section 1.3 of the IADC Deepwater Well Control Guidelines (IADC, 1998) for a comprehensive discussion of drilling fluid management considerations.

## 5.0 Critical Component Analysis

The following table (Table 3) is a matrix, developed by Wild Well Control, indicating the ranking of potential exit points according to the probability of occurrence. This ranking does not indicate the likelihood of a sustained blowout being caused by a leak at or through any of the potential leak points. Such probability is included in the consequence ranking which follows (see Section 6.0).

These summary tables give an indication of components which are likely sources of flow, and source control, which should be addressed in well specific blowout contingency plans.

### 5.1 Drilling, Completion & Workover Operations

Possible failure points during drilling, completion and workover operations have been summarized in Table 3. Based on their experience with the very few problems that have been associated with these components (which were described in Section 3.2) Wild Well Control Inc. developed the blowout scenarios contained in Section 4, which assigned a probability associated with the likelihood of a deepwater blowout occurring as a result of component failure. The assignment of a probability was subjective, and based on Wild Well's experience and judgement. They have assigned a moderate probability of a deepwater blowout to problems associated with the wellhead connector, LMRP, well flow through the riser, or a broach. There is a lower probability of a deepwater blowout to problems associated with leak paths on the BOP, through the drill pipe/tubing or the casing hanger seals.

	Blowout Probability		
	Low	Moderate	High
Wellhead Connector		X	
BOP Flange/Hub Connection	X		
Choke/Kill Connection to BOP	X		
Choke/Kill Stab (LMRP)		X	
Through Riser		X	
Through Drill Pipe	X		
Broach		X	
Casing Hanger Seals	X		

Table 3 - Ranking of Potential Leak Points (Drilling/Completion/Workover)

### 5.2 Producing Wells

A similar table was developed for producing wells based on Wild Well Control's experience. See Table 4. They have assigned a moderate probability of a deepwater blowout to problems associated with the annulus valve, while all other components were assigned a low probability.

	Blowout Probability		
	Low	Moderate	High
Wellhead Connector	X		
Flowline Connector	X		
Annulus Valve		X	
Broach	X		
Casing Hanger Seals	X		

**Table 4 - Ranking of Potential Leak Points (Producing Wells)**

## 6.0 Consequence Analysis

The consequence analysis attempts to rank the consequences of a leak at various potential leak points. The consequence is primarily related to the ability to isolate the leak point via active barriers. This establishes the likelihood that a sustained blowout will result from a leak at any given point.

### 6.1 Drilling, Completion & Workover Operations

Table 5 assigns a consequence ranking to indicate the likelihood of a sustained blowout being caused by a leak at or through the potential leak points from Table 3. These relative rankings were developed by Wild Well Control Inc. based on their experience with the very few problems that have been associated with these components. They have assigned a “catastrophic” rating to a release through the drill pipe or from a broach, because the drill rig would likely shut down and be abandoned, or move off location, if these were to occur (see the blowout scenarios in Section 4). A similar result could occur as a result of blowouts originating at the wellhead connector or through the riser. These were assigned a “severe” ranking by Wild Well Control, while those associated with the BOP and LMRP were assigned a “minor” ranking.

	Relative Consequence		
	Minor	Severe	Catastrophic
Wellhead Connector		X	
BOP Flange/Hub Connection	X		
Choke/Kill Connection to BOP	X		
Choke/Kill Stab (LMRP)	X		
Through Riser		X	
Through Drill Pipe			X
Broach			X
Casing Hanger Seals		X	

Table 5 - Ranking of Consequences Due to Leaks at Various Points  
(Drilling/Completion/Workover)

### 6.2 Producing Wells

A similar table was developed for producing wells based on Wild Well Control’s experience. See Table 6. They have assigned a “catastrophic” consequence of a deepwater blowout to a broach, and “severe” to blowouts resulting from the wellhead connector or casing hanger seals, while all other components were assigned a low probability. These relative consequence rankings are consistent with those applied to those for drilling, completion and workover operations.



## **7.0 Technical Hurdles to Deepwater Oil Spill Response**

The following sections describe probable technical hurdles to be overcome in order to locate, contain, track and recover the uncontrolled flow of oil from the previously identified deepwater blowout scenarios. Problems associated with identifying and correcting the cause of the blowout using well control techniques are discussed in the IADC Deepwater Well Control Guidelines (International Association of Drilling Contractors, 1998) and are not addressed here. Section 7.1 identifies problems associated with subsea containment of oil from a deepwater blowout. Section 7.2 describes technical hurdles foreseen in the subsea injection of dispersants at the wellhead. Section 7.3 defines the problems related to released oil remote sensing and tracking. Section 7.4 identifies problems related to recovery of the oil if it reaches the sea surface. The problems identified in 7.1 through 7.4 are summarized in 7.5.

### **7.1 Subsea Oil Containment**

#### **7.1.1 Deepwater Currents**

Deep water currents and the water depth itself will be a challenge for subsea oil containment. The availability of installation vessels with a suitable dynamic positioning system will be a limiting factor. In addition, the lack of information on plume formation and behavior will make it difficult to predict areas where the oil might surface. Predicting the behavior of deepwater currents is a technical hurdle to be overcome for both relief well planning and for modeling plume behavior.

#### **7.1.2 Manipulation of Heavy Objects**

Intervention or containment at the wellhead may require the placement and/or removal of large equipment pieces weighing several tons at depth. Manipulation of heavy objects on the seabed by means of a ROV can only be done in conjunction with surface support or subsea lifting devices such as syntactic foam buoys, etc. The blowout area may be filled with debris from the surrounding structure and pipes that have fallen down. In order to access the BOP one may have to remove some of the debris, which could be very difficult to do. Existing technology for ROVs includes hydraulic cutting devices in many different forms suitable for cutting nearly any steel or concrete structure. In order to accomplish this, the ROV will need to move very close to the object and must physically lock itself to it in order to complete the task. The blowout plume and subsea current could make this a very risky and difficult task.

#### **7.1.3 Subsea Collectors**

While the logical approach to controlling oil released from a deepwater blowout would appear to be to contain and collect the oil at the blowout source, the difficulties associated with the design and installation of an effective collector in deep water makes these devices impractical.

The Ixtoc 1 collector, Figure 17, despite being suspended from a jackup platform in rather shallow water, suffered damage during a storm and was given up and dismantled before the

The dimensions of the device required to accommodate this volume, in combination with the water depth handling requirements, makes the approach impractical and expensive given the low probability of blowout occurrence. The most serious limitation of the system is the cost, which was estimated at \$58,784,000 in 1985.

The latest comprehensive summary of subsea blowout collection devices is contained in Section 6 of the DEA-63 Project Report (Neal Adams Firefighting, Inc, 1991). This report generally categorizes the collectors as bell-shaped devices, rigid-wall cylinders or flexible columns (See Figure 19). Among the technical hurdles associated with deepwater subsea collectors, the following were included:

- They all limit access to the wellhead to some degree, and most prevent using other types of well control measures such as vertical intervention.
- They have limited tolerance for debris on the seabed.
- None are in stock and few, if any will handle all blowout situations. Long lead times for construction are anticipated.
- They would require a seal against the seafloor to prevent entraining a large volume of seawater in the plume. This situation may be mitigated if a subsea template can be installed around the wellhead or BOP, to which the device can be attached.
- They would require a diameter sufficient to encapsulate the entire stack, with provision to accommodate a leaning wellhead/stack assembly.
- Riser size is critical for bell systems. Small riser diameters result in a backpressure and spill under of oil at the bottom of the bell.
- Rigid cylinders may be limited in deepwater because of the large surface area of the cylinder exposed to current forces along the water column. Heavy anchoring would be required.
- Flexible columns have been shown in laboratory experiments to suffer considerable whipping and flapping associated with the flow of blowout fluids and gas. They lack the ability to withstand significant pressure differentials across the walls.

These difficulties have caused most researchers to conclude that sealed containment of blowout oil is not practical in deepwater with existing technology.

This conclusion was also reached in a recent evaluation of the state-of-the-knowledge and practical opportunities for dealing with submerged oils that was recently published (Brown, et. al., 1998). The authors concluded that in most circumstances, it is not realistic to expect responders to contain or recover submerged oils.

#### **7.1.4 Installation and Approach**

The installation of any oil containment device will need to be coordinated with well control personnel. The blowout plume will make it difficult to approach the well with anything but very massive equipment pieces or ROVs. The operation of ROVs will be difficult around the blow out point. The jet zone will cause vast amounts of water to flow towards the well. The danger of having lighter equipment sucked into the flow is large. Many ROVs have been rendered useless by relatively minor blowout plumes. A further complication is that conventional acoustic based navigation systems or sensors on the ROV may not work as intended due to the heavy turbulence in the area. Both Acoustic Doppler Current Profilers (ACDPs) and ROV mounted tracking

# Deepwater Gulf of Mexico 2008: America's Offshore Energy Future



**MMS**

U.S. Department of the Interior  
Minerals Management Service  
Gulf of Mexico OCS Region

## CHALLENGES AND REWARDS

Significant challenges exist in deep water in addition to environmental considerations. Deepwater operations are very expensive and often require significant amounts of time between initial exploration and first production. Despite these challenges, operators often reap great rewards. **Figure 3** shows the history of discoveries in the deepwater GOM. There was a shift toward deeper water over time, and the number of deepwater discoveries continues at a steady pace.

In addition to the significant number of deepwater discoveries, the flow rates of deepwater wells and the field sizes of deepwater discoveries are often quite large. These factors are critical to the economic success of deepwater development. **Figure 4** illustrates the estimated sizes and locations of 127 proved deepwater fields. In addition to their large sizes, the fields have a wide geographic distribution and range in geologic age from Pleistocene through Paleocene.

**Figure 5** illustrates existing and potential hubs for deepwater production. For purposes of this report, deepwater hubs are defined as surface structures that host production from one or more subsea projects. These hubs represent the first location where subsea production comes to the surface, and the hubs are the connection point to the existing pipeline infrastructure. Note that potential hubs are moving into deeper waters, expanding the infrastructure and facilitating additional development in the ultra-deepwater frontier.



## DEEPWATER GULF OF MEXICO 2008: AMERICA'S OFFSHORE ENERGY FUTURE

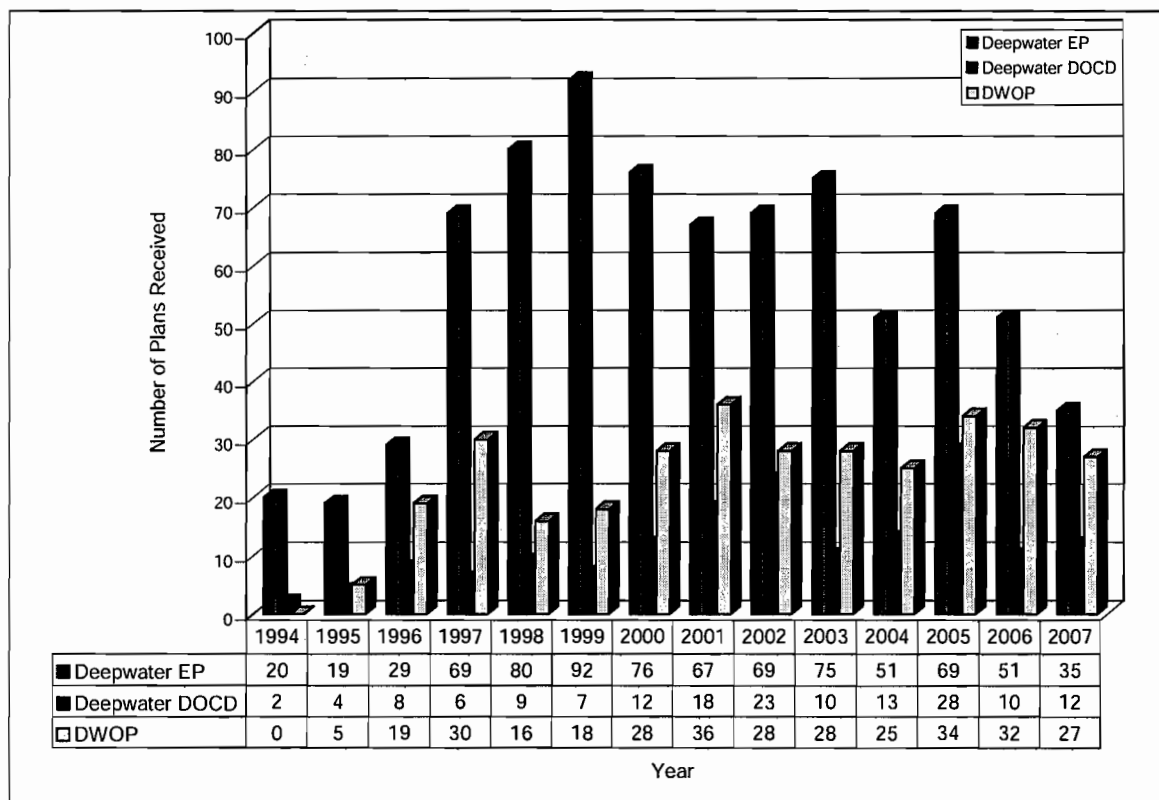


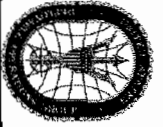
Figure 29. Deepwater EP's, DOCD's, and DWOP's received since 1994.

### HIGH PRESSURE, HIGH TEMPERATURE

High-pressure, high-temperature (HP/HT) development is one of the greatest technological and regulatory challenges to the oil and gas industry today. The basic building blocks of structural integrity are being challenged. Metals and elastomers that have been in use for many years now face unique environmental conditions. The MMS is working with industry to evaluate the risks and set limits to mitigate these potential hazards. The MMS is also sponsoring research and participating in internal and industry-related conferences to stay at the forefront of new technology, and MMS is actively involved in developing options that will best promote human safety and environmental integrity. High-pressure, high-temperature compounds the technological challenges faced in deepwater exploration and especially in deepwater completion and production. Consequently, there is tremendous potential for growth and development in the HP/HT area.

### NEW TECHNOLOGY

In 2007, new technology applications addressed all areas of deepwater activities, including drilling, completion, production, and workover operations. In addition, MMS personnel and members of the industrial community updated API recommended practices and other regulatory documents to accompany the new technological advances.



# National Response Resource Inventory Response Resources/Capabilities Remaining in each District

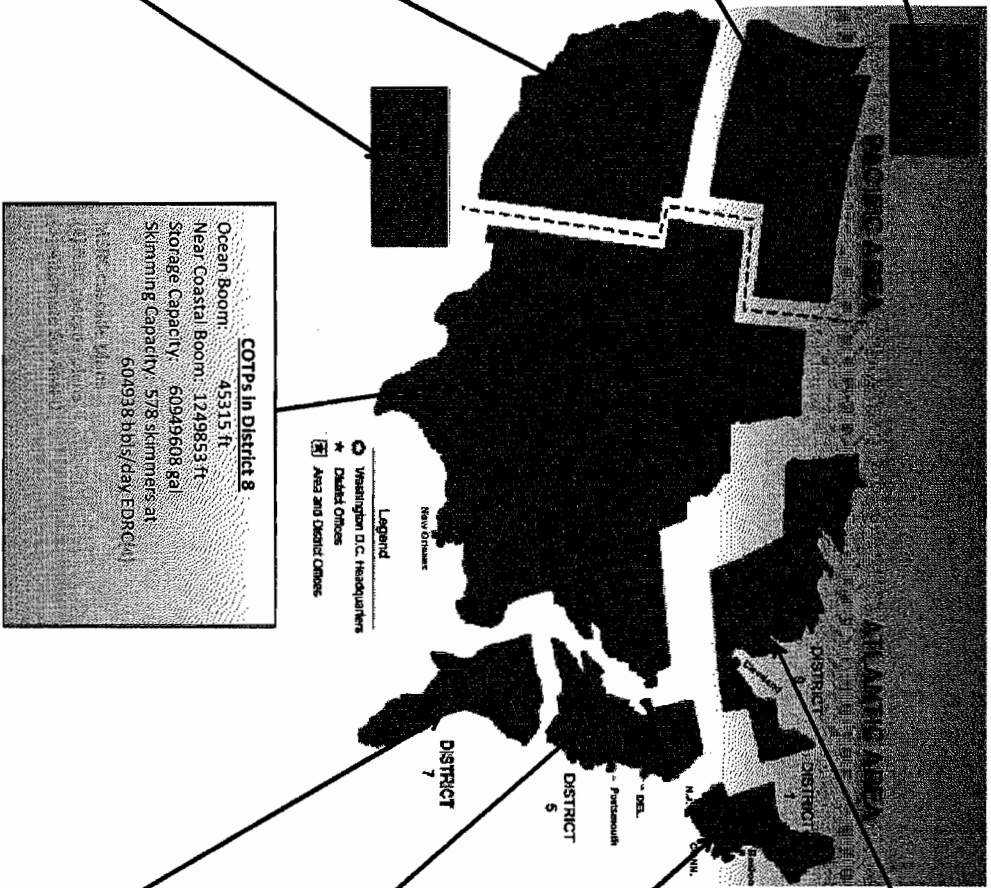


**COTPs in District 12**  
 Ocean Boom: 94311 ft  
 Near Coastal Boom: 442408 ft  
 Storage Capacity: 31188828 gal  
 Skimming Capacity: 375 skimmers at 501013 bbls/day EDRC

**COTPs in District 13**  
 Ocean Boom: 44717 ft  
 Near Coastal Boom: 2127970 ft  
 Storage Capacity: 22290483 gal  
 Skimming Capacity: 153 skimmers at 383124 bbls/day EDRC

**COTPs in District 11**  
 Ocean Boom: 88081 ft  
 Near Coastal Boom: 380403 ft  
 Storage Capacity: 16702687 gal  
 Skimming Capacity: 234 skimmers at 654440 bbls/day EDRC

**COTPs in District 14**  
 Ocean Boom: 33026 ft  
 Near Coastal Boom: 107850 ft  
 Storage Capacity: 3587446 gal  
 Skimming Capacity: 73 skimmers at 99813 bbls/day EDRC



**COTPs in District 9**  
 Ocean Boom: 0 ft  
 Near Coastal Boom: 72637 ft  
 Storage Capacity: 10530378 gal  
 Skimming Capacity: 59 skimmers at 126752 bbls/day EDRC

**COTPs in District 1**  
 Ocean Boom: 41336 ft  
 Near Coastal Boom: 286999 ft  
 Storage Capacity: 17299083 gal  
 Skimming Capacity: 153 skimmers at 259806 bbls/day EDRC

**COTPs in District 5**  
 Ocean Boom: 24752 ft  
 Near Coastal Boom: 216025 ft  
 Storage Capacity: 50695800 gal  
 Skimming Capacity: 111 skimmers at 151074 bbls/day EDRC

**COTPs in District 7**  
 Ocean Boom: 39620 ft  
 Near Coastal Boom: 211375 ft  
 Storage Capacity: 20260920 gal  
 Skimming Capacity: 128 skimmers at 297893 bbls/day EDRC



## Homeland Security

Graphic represents the owned OSRO response resources/capabilities (Boom, Storage, and Skimming) that are available in each COTP zone to meet regulatory requirements. Information is based upon updated Response Resource Inventory System (RRI) data as of 07/10/2010 and all OSRO equipment notifications received by the NSFC. The NSFC has received equipment notifications from 100% of the 41 OSROs responding to the Deepwater Horizon spill as listed in the IAPs and 94% of all OSROs listed in the RRI



**K**

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ONE HUNDRED ELEVENTH CONGRESS

# Congress of the United States House of Representatives

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

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May 3, 2010

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Honorable Ken Salazar  
Secretary  
U.S. Department of the Interior  
1849 C Street, N.W.  
Washington DC 20240

Dear Secretary Salazar:

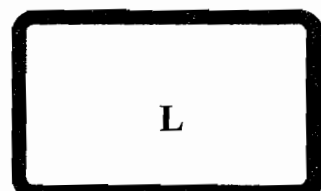
The April 20, 2010 explosion aboard Transocean's *Deepwater Horizon* oil rig and subsequent oil discharge is quickly becoming one of the most significant environmental disasters in recent history. As the Interior Department, Coast Guard, and industry experts quickly work to contain the spill, thousands of barrels of oil are seeping into our Gulf Coast waters and are threatening nearby shores. In addition to this ongoing environmental disaster there are 11 oil well workers who perished as a result of the explosion aboard the rig. Although investigators have yet to determine the cause of this incident, British Petroleum (BP), which leases the submerged land, suspects that a "blowout" may have occurred and that a critical failsafe device appears to have malfunctioned.<sup>1</sup> These events call into question numerous issues associated with the Department's safety regulations and whether it improperly granted certifications to BP, Transocean, and the *Deepwater Horizon*.

Accordingly, the Oversight and Government Reform Committee is investigating the events leading up to and following the incident. As an initial matter, we will assess whether the Interior Department's Minerals Management Service (MMS), which oversees offshore drilling activity, has promulgated regulations necessary to ensure the safety and operability of vessels drilling in the Gulf of Mexico. News reports indicate that MMS may have sidelined regulatory efforts that would have brought the U.S. oil industry in line with prevailing industry safety standards, which mandate the use of remote-controlled acoustic shut-off switches.<sup>2</sup> If true, MMS will need to explain why it chose to do so.

The Committee will also investigate whether MMS improperly awarded safety certifications to BP, Transocean, and the *Deepwater Horizon* rig. Reports indicate that the *Deepwater Horizon* appears to have had a faulty "dead man" shut-off switch which, if

<sup>1</sup> "Leaking Rig's Safeguards Questioned; Hundreds Of Species At Risk," *Greenwire*, April 29, 2010.

<sup>2</sup> Russell Gold, Ben Casselman, Guy Chezzan, "Oil Well Lacked Safeguard Device," *The Wall Street Journal*, April 29, 2010.



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functioning properly, could have averted this massive spill. The malfunctioning "failsafe" device raises serious questions about any safety inspections or audits conducted by MMS or third parties during the certification process. This, in turn, casts serious doubt upon any safety awards that MMS may have granted to BP and/or Transocean within the past year.<sup>3</sup>

The American people also have a right to know whether the federal government possessed and implemented an appropriate emergency response plan to mitigate this disaster. Though U.S. Coast Guard assets quickly arrived on-scene to assist with the fire and rescue effort, there appears to have been a delay in dispatching significant resources to assist in the environmental clean-up. Meanwhile, a vast oil slick has begun to reach Gulf Coast shores.

To assist this Committee with its investigation, we respectfully request that you provide the following information no later than May 7, 2010:

1. Copies of all rules and regulations governing the safety and operational requirements for vessels that extract mineral resources from the Gulf of Mexico and the Outer Continental Shelf in effect on April 20, 2010;
2. Copies of all policy manuals governing the enforcement of rules and regulations referred to in #1;
3. Copies of all proposed rules and regulations, including comments thereto, governing the safety and operational requirements for vessels that extract mineral resources from the Gulf of Mexico and the Outer Continental Shelf. This includes, but is not limited to, those that address remote-controlled acoustic shut-off devices, as well as the auditing of safety and environmental management programs (SEMS);
4. All communications between private sector entities and the Interior Department, as well as internal communications, referring or relating to #3;
5. All documents referring or relating to #3, including any internal or third party studies conducted for the Department on remote-controlled acoustic shut-off devices and any ensuing recommendations;
6. All documents and communications referring or relating to any safety awards or certifications impending or bestowed upon BP, Transocean, and/or the *Deepwater Horizon* oil rig;
7. A list of Department personnel responsible for evaluating or otherwise certifying BP, Transocean, and/or the *Deepwater Horizon* to operate in the

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<sup>3</sup> Mike Soraghan, "BP, Other Oil Companies Opposed Effort To Stiffen Environmental, Safety Rules," *Greenwire*, April 27, 2010.



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Gulf of Mexico. This list should include names, titles, a brief description of their responsibilities, and contact information;

8. Copies of all audits or inspections conducted with respect to BP, Transocean, and/or the *Deepwater Horizon*;
9. All communications between BP, Transocean, and the Interior Department, as well as internal Department communications, referring or relating to #8;
10. The results of any preliminary investigations into the causes of the *Deepwater Horizon* incident;
11. Copies of all emergency response plans in effect on April 20, 2010, as well as any amended plans since April 20, 2010, including a timeline of the Department's response efforts; and
12. All communications between the Interior Department, federal agencies, and the White House referring or relating to the *Deepwater Horizon* explosion, including coordination for emergency relief.

Please note that, for purposes of responding to this request, the terms "records," "communications," and "referring or relating" should be interpreted consistently with the attached Definitions of Terms.

The Committee on Oversight and Government Reform is the principal investigative committee of the U.S. House of Representatives. Pursuant to House Rule X, the Committee has authority to investigate "any matter" at "any time."

Thank you for your attention to this important matter. If you have any questions, please feel free to contact me at any time. Should your staff require additional information, they may reach Thomas Alexander, Senior Counsel, at (202) 225-5074.

Sincerely,



Darrell Issa  
Ranking Member

Cc: The Honorable Edolphus Towns, Chairman

Attachment

### Definitions of Terms

1. The term "record" means any written, recorded, or graphic matter of any nature whatsoever, regardless of how recorded, and whether original or copy, including, but not limited to, the following: memoranda, reports, expense reports, books, manuals, instructions, financial reports, working papers, records notes, letters, notices, confirmations, telegrams, receipts, appraisals, pamphlets, magazines, newspapers, prospectuses, interoffice and intra office communications, electronic mail (e-mail), contracts, cables, notations of any type of conversation, telephone call, meeting or other communication, bulletins, printed matter, computer printouts, teletypes, invoices, transcripts, diaries, analyses, returns, summaries, minutes, bills, accounts, estimates, projections, comparisons, messages, correspondence, press releases, circulars, financial statements, reviews, opinions, offers, studies and investigations, questionnaires and surveys, and work sheets (and all drafts, preliminary versions, alterations, modifications, revisions, changes, and amendments of any of the foregoing, as well as any attachments or appendices thereto), and graphic or oral records or representations of any kind (including without limitation, photographs, charts, graphs, microfiche, microfilm, videotape, recordings and motion pictures), and electronic, mechanical, and electric records or representations of any kind (including, without limitation, tapes, cassettes, disks, and recordings) and other written, printed, typed, or other graphic or recorded matter of any kind or nature, however produced or reproduced, and whether preserved in writing, film, tape, disk, videotape or otherwise. A record bearing any notation not a part of the original text is to be considered a separate record. A draft or non-identical copy is a separate record within the meaning of this term.
2. The term "communication" means each manner or means of disclosure or exchange of information, regardless of means utilized, whether oral, electronic, by document or otherwise, and whether face-to-face, in a meeting, by telephone, mail, telexes, discussions, releases, personal delivery, or otherwise.
3. The terms "referring or relating," with respect to any given subject, means anything that constitutes, contains, embodies, reflects, identifies, states, refers to, deals with or is in any manner whatsoever pertinent to that subject.